

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 background on.

Enjoy the read!
Ed Canuel
Bo Gregersen
Ivan Kolev

AROUND THE REGION.....

DENMARK

Denmark and the U.S. join forces in Growth Initiative. On May 31st, U.S. Secretary of State Hillary Rodham Clinton and Danish Prime Minister Helle Thorning-Schmidt launched Green Partnerships for Growth (GPG) in Copenhagen. This bilateral initiative builds on the successes of previous Green Partnership events in 2010 and 2011. Spear-headed by U.S. Embassy Copenhagen, Green Partnerships, a collaboration with the Confederation of Danish Industry (DI), builds transatlantic bridges in the cleantech sector by actively pursuing and facilitating opportunities for private industry collaboration. The GPG, led by Embassy Copenhagen in collaboration with DI and AmCham Denmark, also will include other key partners from the public and private sectors. This initiative fosters green growth, connecting U.S. and Denmark with the experience, knowledge, products and services of companies in both countries. Read more [here](#).

(Photo: (L-R) Ambassador Fulton, Secretary of State Clinton and Prime Minister Thorning-Schmidt; by Hasse Ferrold)

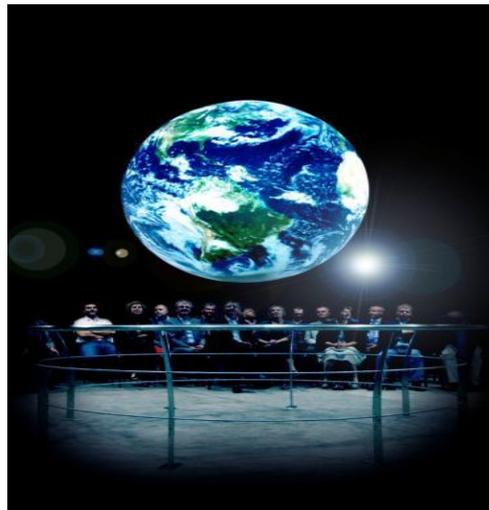


eHealth events. eHealth week 2012 recently concluded in Copenhagen. This annual European conference was co-organized by the European Commission and the Healthcare Information Management Systems Society. Nearly 40 U.S. companies participated. U.S. Embassy Copenhagen organized an eHealth Innovation Contest, featuring six large American corporations: IBM, Microsoft, Dell, HP, Accenture and VMware. Technology professionals judged Danish startups in an idea competition focusing on eHealth solutions. Kaiser Permanente Chairman & CEO George Halvorson and HHS National Coordinator for Health IT Dr. Farzad Mostashari spoke and

witnessed the contest. The Embassy also organized a reception at Ambassador Fulton's residence, sponsored by Accenture, Hyland Software, Microsoft and Oracle. Read more [here](#) and [here](#).

Danish-U.S. Medical Cooperation. Danish and American scientists have joined forces to develop a new drug against prostate cancer. The new drug G202 is currently being tested on humans. The researchers developed a method of targeting cancer cells directly. Success in trials could open up opportunities in combating incurable types of cancer. Read more [here](#).

Science on a Sphere. Developed by NOAA, Science on a Sphere uses computers and video projectors to display planetary data onto a six foot diameter sphere, analogous to a giant animated globe. Such a sphere was a centerpiece of the U.S. Center at COP15, highlighting U.S. contributions to a scientific understanding of the Earth's dynamic climate system. Today, the sphere continues to thrill students and other attendees visiting the Danish Visual Climate Center, led by serial entrepreneur Martin Skibsted. Read more about the Sphere [here](#) and the Visual Climate Center [here](#). (Picture: www.visualclimatecenter.com)



ESTONIA

Baltic States' largest solar energy station to be opened in South East Estonia. The solar panels will turn towards the light automatically and the 100 KW station will produce energy even in a cloudy day in winter, gathering light that is reflected from snow. Read more [here](#).

Electricity production from renewable sources increased to 13%. In 2011 compared to the previous year, the production of wind energy increased by nearly a third, the production of hydro energy over 10% and electricity from biomass over 5%. Read more [here](#).

Annual World Conference on Science and Technology Parks held in Tallinn. Over 500 delegates from 60 different states convened for the three-day conference which focused on cooperation of research institutions, universities and science parks in professional innovation support. Read more [here](#).

FINLAND



Integrated Carbon Observation System (ICOS) headquarters to be established in Finland. ICOS is a network of researchers and research stations set up to monitor the concentration, release and sequestration of greenhouse gases. The headquarters, to be established in connection with the Finnish Meteorological Institute (FMI), is expected to begin operations in 2013. Read more [here](#). (Picture: ICOS logo)

Finland's largest wind turbine inaugurated in Vaasa. Finnish wind turbine manufacturer Mervento recently completed installation of an innovative direct-drive turbine, designed for average winds, produces electricity when the wind is blowing at 4–25 meters per second. The 125-metre-high wind turbine is the first of its kind, designed specifically for cold conditions. Read more [here](#).

Carbon-neutral public sauna under construction in Helsinki. As part of Helsinki's year as World Design Capital 2012, architect Tuomas Toivonen and designer Nene Tsuboi are building a bathing house for both steam-lovers and design enthusiasts. Sustainability guides the design and the sauna will showcase carbon-neutral solutions developed in collaboration with experts from Fortum Energy Company. Read more [here](#).

(Picture: www.goodnewsfinland.com)



Stora Enso in bid to become a global renewable materials company. Finnish paper company Stora Enso plans to build a 1.6 billion euro world-class integrated mill based on locally grown renewable materials. Construction at Beihai city in Guangxi, southern China, is expected to begin later this year with production planned to start in late 2014. Read more [here](#).

GERMANY

Sunny Germany sets solar world best. On May 26th nearly 50 percent of the nation's midday electricity needs was produced from solar. Germany continues its focus on renewables after closing eight nuclear power plants, and vowing to scrap the remaining nine by 2020. Read more [here](#).

ICELAND

Three oil zones mapped out off Iceland's shores. The Icelandic Minister for Foreign Affairs Össur Skarphéðinsson underscored that oil production north of Iceland will be permitted within strict environmental legal framework and will not begin unless necessary equipment to prevent pollution has been established. Read more [here](#).

Selling Icelandic expertise on geothermal energy in the U.S. Icelandic company Glacier Securities is consulting on an extensive development project to build a geothermal energy plant in Nevada. Read more [here](#).

Parliament lifts VAT on electric vehicles. The new bill exempts and repays VAT on electric and hydrogen powered vehicles with the purpose to strengthen the competitiveness of clean energy vehicles as compared to gas and diesel powered vehicles. Read more [here](#).

U.S.-Icelandic data storage center honored. During the recent UN Rio+20 Conference, Verne Global was honored as one of the "100 Best Solutions for Future Sustainability" by the environmental project Sustainia. Read more [here](#). *(Picture: www.sustainia.me)*



LATVIA

Coordinated bottle deposit system with Baltic counterparts discussed. Latvian Minister of Environmental Protection and Regional Development Edmunds Sprudzs participated in a Baltic environmental meeting where he discussed the possibility of implementing a coordinated bottle deposit/recycling system in the Baltics. Read more [here](#).

LITHUANIA

Lithuania launches regional nuclear safety watchdog. In partnership with the U.S. embassy in Vilnius, Lithuania's foreign ministry announced the launching of a regional nuclear safety watchdog in the village of Medininkai on the Lithuanian-Belarus border. Read more [here](#).

Lithuania targets 23% share of renewable energy in 2020. The country's share of renewable energy in gross final energy consumption in 2010 accounted for 19.7%, above average for the EU states. The target for 2020 is 23%. Read more [here](#).

Google Street View gets permission. Initially reluctant to proceed with the initiative due to privacy and security concerns, Lithuanian officials gave Google the go-ahead and two cars equipped with video gear are to begin filming the streets of Vilnius before heading to other cities. Read more [here](#).

New nuclear plant to be build in Visaginas. The government expects the plant, Lithuania's largest-ever energy project, to be operational by 2020-2022. Hitachi has been chosen as a strategic investor and would own 20 percent of shares in the new facility and Lithuania would hold 38 percent. Latvia and Estonia would take stakes of 20 percent and 22 percent, respectively. Read more [here](#).

NORWAY



Aker Solutions celebrates opening of carbon capture plant at Mongstad. Aker Solutions has designed and delivered the amine plant at the CO2 Technology Centre Mongstad which is the world's largest facility for testing and improvement of carbon capture technologies. Read more [here](#).
(Picture: www.maritimeandenergy.com)

Parliament passes an ambitious and long-awaited climate change policy. A new climate and energy fund was established aimed at contributing to developing technology that will reduce emissions. Read more [here](#).

Norway to build world's biggest wooden apartment block. Norway's Bergen Region Housing plans to build a 14-story wooden apartment block overlooking the Western coastal city's famous fjords. The project seeks to promote sustainable materials while at the same time boosting Norway's vast forestry industry. Read more [here](#).

2012 Arctic Energy Agenda Roundtable conference held in Trondheim. U.S. Secretary of the Interior Ken Salazar joined Norwegian Minister of Petroleum and Energy Ola Borten Moe, Canadian and Icelandic ministers, and several oil industry CEOs to discuss sustainable resource management in the Arctic. Read more [here](#).

POLAND

European Biodiesel Conference held in Krakow. European Biodiesel 2012 comprised a highly interactive two day program focusing on successfully negotiating change in the European biodiesel market. The event attracted senior executives from all areas of the biodiesel industry including agribusiness, feedstock traders and suppliers, transportation companies, biodiesel producers, oil refiners, NGOs, financiers, automotive companies, technology providers and plant manufacturers. Read more [here](#).

RUSSIA

Kremlin establishes Science and Education Department. President Putin signed an executive order, creating the Office of the President of the Russian Federation for Science and Education Policy. The office will provide support and advice to the President in formulating and developing state science and education, and the department will implement these policies. Read more [here](#) and [here](#) (in Russian).

Scientists and businesses cooperation to bring scientific research to the market. OJSC Russian Venture Capital (RVC) recently closed the first deal which allows commercialization of the universities' high tech research. The Boreskov Institute of Catalysis of the Siberian Branch of Russian Academy of Sciences will give intellectual property rights based on its research to a project focused on industrial catalytic heaters. Read more [here](#) (in Russian).

Johnson&Johnson and Skolkovo creating a non-profit training center. The center will focus on high-tech and lifelong medical learning. Doctors will be trained in various specialties and will rely on the experience of the existing similar center in Kazan which was opened in 2008 with Johnson&Johnson participation.

SWEDEN

Breakthrough in artificial photosynthesis could boost solar future. Researchers at the KTH Department of Chemistry designed a molecular catalyst able to convert water into oxygen and protons at speeds similar to natural photosynthesis. The rapidly advancing field could lead to more efficient solutions for converting and storing solar energy. Read more [here](#).



IKEA U.S. announces new solar energy plans. The furnishing retailer announced plans to install solar energy panels on two more of its U. S. locations. Both projects will rank among the largest commercial rooftop solar installations in the U.S., and their implementation will extend the IKEA solar presence to nearly 89 percent of its U.S. locations. Read more [here](#). (Picture: [solarknowledge.blogspot.com](#))

Short-lived climate pollutants addressed in Stockholm as G-8 members join the Climate and Clean Air Coalition. U.S. Secretary of State Hillary Clinton and Sweden's Minister for Environment Lena Ek raised the awareness of Short-Lived Climate Pollutants aiming to communicate these pollutants' impacts and the opportunities that exist to address them. The G-8 countries have also agreed to collectively join the Climate and Clean Air Coalition to reduce Short-Lived Climate Pollutants, launched on February 16, 2012. Read more [here](#). Find Secretary Clinton's and Minister Ek's speeches [here](#).

Volvo Mack Trucks adding new vehicles running on alternative energy. Two new truck models will roll off Mack Trucks' production line next year, expanding the truck maker's alternative fuel lineup. Mack already produces natural-gas powered rigs such as its TerraPro refuse truck. Read more [here](#). (Picture: [www.swedishamericangreenalliance.org](#))



EUROPEAN UNION

Europe set to regulate for greener cars. The European Commission is set to propose tighter carbon emissions standards for new EU cars which would make binding a 2020 goal to lower carbon dioxide (CO₂) emissions to an average of 95 grams per kilometer (g/km). Read more [here](#).

EU figures show 3 percent drop in new car CO₂ emissions. Carbon dioxide emissions from new cars in the European Union fell an average of 3 percent in 2011, as buyers chose less polluting vehicles. Data from the European Environmental Agency (EEA), a monitoring arm of the EU, showed a decrease in the average amount of CO₂ emitted by new cars registered in 2011 to 135.7 grams per kilometer, down from 140.3 in 2010. Read more [here](#).

7th EU Environment Action Program framework set. Environment ministers adopted conclusions on setting the framework for a 7th EU Environment Action Program (EAP). The conclusions underline that the 7th EAP should set out the key elements of the future environment policy, which should be linked to the Europe 2020 Strategy and other relevant strategies, such as the EU Sustainable Development Strategy. Read more [here](#).

The Council discussed the Energy Roadmap 2050. The Council took note of progress reports on a draft regulation on energy infrastructure and safety of offshore oil and gas activities. Read more [here](#).

UNITED STATES

Novozymes opened the world's largest enzyme plant in Nebraska. The Danish company invested USD 200 million in the new plant, which encompasses nine buildings with a floor space of 137,000 square feet. The plant will specialize in developing 'world-leading' enzymes to advance both existing and advanced biofuel markets. Read more [here](#).

National Snow and Ice Data Center (NSIDC) to cut its carbon footprint. The renovated center has made a large push toward sustainability. The 50kW solar system installed on the roof and the new cooling system will allow the center to operate with 90 percent less energy than a traditional data center. Read more [here](#).

GE Energy to open new Oil & Gas training facility. GE Energy announced that it is investing \$10 million in the development of a new Oil & Gas Training Facility to support and advance training and development for its customers and employees. Read more [here](#).

Bugs in the ice sheet. Locked in frozen vaults on Antarctica and Greenland, a lost world of ancient creatures awaits another chance at life. With that ice melting at an alarming rate masses of bacteria and other microbes – some of which the world hasn't seen since the Middle Pleistocene, a previous period of major climate change about 750,000 years ago – will make their way back into the environment. Read more [here](#).

Bank of America pledges \$50 billion to combat climate change. Bank of America Corp. will contribute \$50 billion over the next 10 years to address climate change. The new set of goals will be effective on Jan. 1 2013, following the anticipated completion of the bank's current 10-year pledge of \$20 billion, which it said is four years ahead of schedule. Read more [here](#).

DOE announced \$27 million to reduce costs of solar energy projects. As part of the Obama Administration's SunShot Initiative to make solar energy cost-competitive with fossil fuels within the decade, U.S. Department of Energy Secretary Steven Chu announced the availability of more than \$27 million in new funding that will reduce the non-hardware costs of solar energy projects, a critical element in bringing down the overall costs of installed solar energy systems. Read more [here](#).

New frontiers for renewable energy. A team of researchers at the U.S. Naval Research Laboratory demonstrated a method for harvesting solar power underwater at depths of 30 feet, opening up further possibilities in renewable energy and new options for powering underwater systems. Read more [here](#).

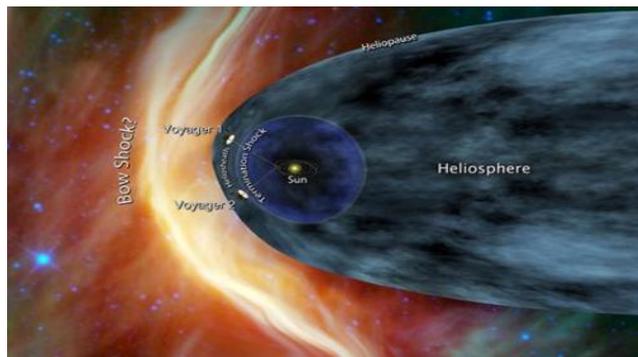
EPA issues updated, achievable air pollution standards for oil and natural gas. The updated standards were informed by the important feedback from a range of stakeholders including the public, public health groups, states and industry. The final standards reduce implementation costs while also ensuring they are achievable and can be met by relying on proven, cost-effective

technologies as well as processes already in use at approximately half of the fractured natural gas wells in the United States. Read more [here](#) and [here](#).

eBay to power data center with renewable energy. The U.S. online auction sales group plans to build a data center powered by startup Bloom Energy's renewable energy fuel cells. The company will use 30 Bloom Energy servers that use biogas derived from renewable organic waste and will only use the grid as a back-up source of power. Read more [here](#).

Voyager approaches edge of solar system.

Billions of miles beyond the orbits of the planets in our solar system the Voyager 1 spacecraft, launched from Earth in 1977, will be the first man-made object to leave the solar system, within the next year or two. Read more [here](#). (Picture: artist's rendering shows Voyager 1 and Voyager 2 at the edge of the solar system. www.usatoday.com)



First solar facility on tribal lands approved. The U.S. Department of Interior approved the first utility-scale solar energy project for development on American Indian tribal lands. The 350-megawatt K Road Moapa Solar project will be in Clark County, Nevada, about 35 miles north of Las Vegas on tribal trust land of the Moapa Band of Paiute Indians. Read more [here](#).

Bigger wind turbines make greener electricity. A report on a study in the American Chemical Society's journal *Environmental Science and Technology* shows that bigger turbines do produce greener electricity - for two main reasons. First, manufacturers now have the knowledge, experience and technology to build big wind turbines with great efficiency. Second, advanced materials and designs permit the efficient construction of large turbine blades. Read more [here](#).



U.S. Water Partnership launched. The Partnership, originally announced by Secretary of State Hillary Clinton on World Water Day in March, officially launched on June 20 at the Rio+20 Conference with over \$500 million USD in financial commitments from the partnership's 41 members, who include government agencies, academia, water coalitions, NGOs and private companies. Read more [here](#). (Picture: Secretary of State Hillary Clinton with several USWP partners on World Water Day. www.oeskanews.com)

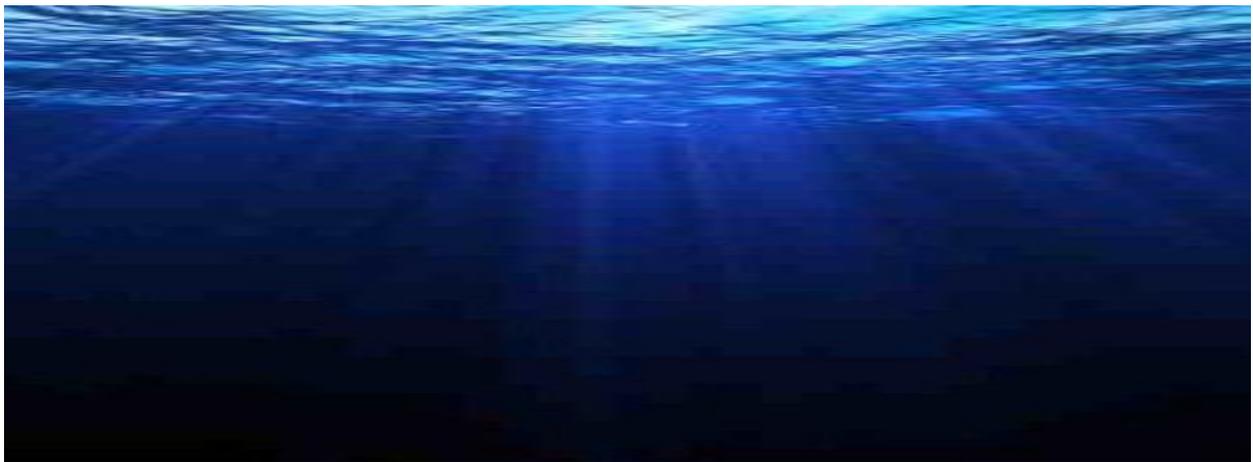
New Arctic oil and gas drilling plans. The United States is set to unveil a five-year scheme for offshore oil and gas leases that will open more of the Arctic Ocean to exploration while protecting the environment and the livelihoods of indigenous peoples. Read more [here](#).

EVENTS

July 12-13, 2012 The University of Washington, Seattle, Washington, USA. **Fourth International Conference on Climate Change: Impacts and Responses.** Read more [here](#).

FEATURED STORY

Ocean Energy



The world's oceans are a vast source of unexploited energy. Ocean energy has a wealth of potential, but needs significant R&D in order to become commercially viable. The four main types of energy generation from the ocean are tidal power, wave power, ocean thermal energy conversion (OTEC) and osmotic power. *(Picture: www.alternative-energy-action-now.com)*

Tidal Power

Tidal Power refers to energy captured from tidal motion. This motion occurs as a result of the moon's gravitational pull on the Earth. Due to this continuous force, tides are a predictable and reliable resource. Tidal power can be captured in several different ways. One technique involves an underwater turbine, similar in structure to a wind turbine, which is spun by tidal currents. Another avenue is the use of a tidal barrage. This dam-like structure is built



where ocean tides flow into bays or rivers. Water is allowed to flow in during high tides and is let out at low tides; turbines are spun when water moves in either direction. Like traditional dams, this method has the potential for negative environment effects. Tidal power in the U.S. is making a big step with its first commercially licensed tidal energy project. The venture revolves around the installation of thirty tidal turbines in New York City's East River. In Europe, the German technology company Siemens announced that it has taken on a larger stake in the British ocean energy company Marine Current Turbines Ltd. Siemens now has 45% ownership in the tidal energy company. *(Picture: www.eere.energy.gov)*

Wave Power



Ocean waves are generated by the wind. The power in these waves can be harnessed through several different methods, though chiefly by apparatuses that float on the water's surface. Successful generation of energy from wave power is highly location-dependant. Increased wave activity is found along Europe's western coast, off the coasts of Canada and the U.S., and off the south-western coasts of Australia, New Zealand, South America and South Africa. There are currently no commercial wave farms in operation,

though there are a few in the planning stages. The Swedish energy company Vattenfall has signed on to a wave-energy test project in Scotland's Orkney Islands. Presently, companies remain focused on improving wave power technology and technique. Engineering issues such as dealing with salt corrosion and storms still pose problems to some projects. *(Picture: www.theenergylibrary.com)*

Ocean Thermal Energy Conversion (OTEC)

OTEC exploits the difference in temperature between cold, deep water and warm, shallow water to run a heat engine, which generates electricity. The temperature difference must be at least 25°C (~77°F). For this reason tropical areas hold the most promise for OTEC development. In Hawaii, U.S. company Lockheed Martin and Makai Ocean Engineering are collaborating to build a 10MW pilot plant. The plant should be operational by 2015. In addition to energy output, OTEC yields fresh water from seawater as an excess product.

Osmotic Power

When salt water meets fresh water energy can be generated due to the different levels of salinity. Osmotic power, also known as salinity gradient power, can be captured at a plant with the help of a semi-permeable membrane. In order for osmotic power to become commercially available, improvements in design and production of membranes must be made. Norwegian company Statkraft and California based Nitto Denko/Hydranautics signed an agreement in 2011 for the development and production of new, more commercially geared membranes. Statkraft is a leader in osmotic power development having opened the world's first osmotic power plant in 2009.

Benefits and Obstacles of Ocean Energy

Ocean energy remains in its developmental phase, but the future is bright for this renewable energy source if it can overcome potential pitfalls. Predictability is a favorable trait for ocean energy. The tides follow a set cycle, while the energy content and speed of a wave can be measured days in advance as it rolls across the ocean. Being able to predict the characteristics of a resource enables a plant to optimize production. In comparison to other forms of renewable energy, machinery for ocean energy can often be less visible and obstructive. A major obstacle to ocean energy is site location. Certain types of plants require specific geographical features in order to perform at max capacity. Often these areas are either severely limited or lack proximity to a power grid. Another issue, especially with floating machinery, stems from a difficulty in regular maintenance. Plants can be hard to reach when out in deep waters. Turbines and mechanical parts must also be made to withstand rough oceanic storms.

Further Reading

Further information on ocean energy:

http://www.eere.energy.gov/basics/renewable_energy/ocean.html

<http://www.eu-oea.com>

Recent article from the Economist on OTEC:

<http://www.economist.com/node/21542381>

Article on recent developments in ocean energy:

http://www.greenbang.com/energy-from-the-ocean-almost-ready-for-prime-time_21616.html



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