

MAY 2014



#### HIGHLIGHTS

##### **Policy Initiatives**

Canola sector watches for biofuel mandates...

##### **Business & Market**

Orient group opts for group captive power...

##### **Finance & Investment**

EIB provides 200 million euro for climate projects...

##### **Research & Development**

Hawaii to evaluate hemp for biofuel...

##### **Climate & Environment Change**

Consortia to study impacts of climate change...

#### **Published By**

#### **BIO ENERGY COUNCIL OF INDIA**

Tel: +91 79 66309332

Fax: +91 79 66309334

W: [www.bioenergyindia.org](http://www.bioenergyindia.org)

E: [info@bioenergyindia.org](mailto:info@bioenergyindia.org)



## Policy Initiatives

### North America

#### **Canola sector watches Ont. for biofuel mandate effects**

Ontario's renewable diesel mandate should create a new market for Canadian oilseeds, but the size of that market is in question. The province's "greener diesel" rules went into effect April 1.

Two percent biofuel will be blended into regular diesel during the first compliance period, which runs from April 1, 2014, to Dec. 31, 2015.

The greenhouse gas reduction requirement for the first compliance period is an average minimum of 30 percent. Blenders receive a credit for using biofuel with a higher greenhouse gas reduction rating, which is pretty much every biodiesel or hydrogenation-derived renewable diesel on the market.

The rules call for three percent renewable diesel with an average minimum 50 percent greenhouse gas reduction in 2016 and four percent at an average minimum greenhouse gas reduction of 70 percent in 2017.

[www.producer.com/2014/04/canola-sector-watches-ont-for-biofuel-mandate-effects/](http://www.producer.com/2014/04/canola-sector-watches-ont-for-biofuel-mandate-effects/)

## Business & Market

### India

#### **Pluss Polymers initiates e-waste management program in Gurgaon**

Pluss Polymers, a materials research and manufacturing company, has initiated a campaign towards e-waste awareness among the Gurgaon community. The campaign – a brainchild of Pluss employees – aims to spread awareness on the impact of electronic waste on health and environment while emphasizing the need for their safe disposal. The company has already collected nearly 100 kg of e-waste in the first leg of this campaign, which is being conducted in collaboration with Advit Foundation.

[www.business-standard.com/content/b2b-chemicals/pluss-polymers-initiates-e-waste-management-program-in-gurgaon-114040200651\\_1.html](http://www.business-standard.com/content/b2b-chemicals/pluss-polymers-initiates-e-waste-management-program-in-gurgaon-114040200651_1.html)

#### **Mailhem Ikos Environment to tap WTE in India**

Mailhem Engineers, a leading Indian waste management and renewable energy company, and Lhotellier Ikos, a French-based 200 m Euro group specializing in infrastructure and renewable energy as well as in water management and treatment, have announced a JV to provide WTE solutions for India - Mailhem Ikos Environment Private Limited.

With the growing concerns of energy and waste management in India, Mailhem Ikos will be able to provide centralized solutions for waste management. Furthermore, the solutions will enable close to 85% of the waste to be reused in form of energy or recycled. Bringing together the domestic expertise of Mailhem and the technological prowess of Ikos, the joint venture will be able to establish large scale, up-to 500 tonnes, waste management bio gas plants in India.

[www.indiaprwire.com/pressrelease/environmental-services/20140408305700.htm](http://www.indiaprwire.com/pressrelease/environmental-services/20140408305700.htm)

#### **Orient Green opts for group captive power in biomass**

Orient Green Power Company is consolidating its biopower generation business with a sharper focus on group captive power generation. The wind and biomass-based renewable power company has informed the BSE that it will sell a 10MW biopower unit in Pollachi in Tamil Nadu to its subsidiary to enable the unit to tap the groups captive market to sell power to private sector consumers.

Company officials said Orient Green has 10 biomass power generation units totalling over 86 MW of power generating capacity. The Pollachi unit is the third power plant to opt for group captive as opposed to selling power to the state utility. One of the expected advantages is timely payment from private sector consumers. An additional 20 MW is coming up in Kolhapur through a joint venture.

Biomass, or wood-based and agro-waste, fuel costs about ₹1.5-3 a kg and up to 2.5 kg of fuel is needed to generate a unit of electricity. In Tamil Nadu tariff levels range around ₹6.50-7 a unit,

according to an investor presentation by the company.

[www.thehindubusinessline.com/companies/orient-green-opts-for-group-captive-power-in-biomass/article5888199.ece](http://www.thehindubusinessline.com/companies/orient-green-opts-for-group-captive-power-in-biomass/article5888199.ece)

### **Waterless urinals, biogas cars on display at IIT-Delhi open house**

A car that runs on biogas instead of conventional CNG, low cost waterless urinals capable of saving over 100 thousand litres of water per urinal per day, fibre wrapping to protect buildings from earthquakes and solar-powered refrigeration systems — these were some projects which showcased at the Indian Institute of Technology, Delhi on April 19.

[www.indianexpress.com/article/cities/delhi/waterless-urinals-biogas-cars-on-display-at-iit-delhi-open-house/](http://www.indianexpress.com/article/cities/delhi/waterless-urinals-biogas-cars-on-display-at-iit-delhi-open-house/)

### **MIT college sets up biogas plant to process canteen waste**

The Maharashtra Academy of Engineering and Educational Research (MAEER)'s Maharashtra Institute of Technology (MIT) College, Kothrud, has installed a biogas plant that has a capacity to generate energy equivalent to around 1.5 commercial LPG cylinders by decomposing waste from the students' canteen.

[www.indianexpress.com/article/cities/pune/mit-college-sets-up-biogas-plant-to-process-canteen-waste/](http://www.indianexpress.com/article/cities/pune/mit-college-sets-up-biogas-plant-to-process-canteen-waste/)

### **NDMC plans small-scale WTE plants**

As part of its green initiative, New Delhi Municipal Council (NDMC) plans to set up small-scale waste-to-energy plants in its localities. The first plant will be set up near Safdarjung Hospital. According to information received from sources, one plant would generate 40 MW of daily energy to meet the requirement of the neighbouring areas.

[www.timesofindia.indiatimes.com/city/delhi/NDMC-plans-small-scale-waste-to-energy-plants/articleshow/34066222.cms](http://www.timesofindia.indiatimes.com/city/delhi/NDMC-plans-small-scale-waste-to-energy-plants/articleshow/34066222.cms)

### **SGS to move climate project audit business to India**

Geneva-based SGS is one of the main auditors of projects under the UN's Clean Development Mechanism (CDM) - a program under the Kyoto Protocol to help fund climate change mitigation efforts in poor countries while generating carbon offsets for investors.

A collapse in demand for the offsets has led offset prices to crash by some 99 per cent in the past five years to around 0.15 euro each, prompting several auditors to scale back or pull out completely. SGS also provides technical advice and training to industries including oil and gas, agriculture, mining, construction and chemicals, expects to complete the move within six months.

[www.businessworld.in/news/business/environment/sgs-to-move-climate-project-audit-business-to-india/1315716/page-1.html](http://www.businessworld.in/news/business/environment/sgs-to-move-climate-project-audit-business-to-india/1315716/page-1.html)

## **North America**

### **Work to start on Virgin Islands biogas power plant**

A new 7MW biogas power plant will be built in Saint Croix, US Virgin Islands after the project received government approval at the end of March. The biogas plant will supply renewable electricity to the Virgin Island Water and Power Authority (WAPA) for the next 25 years, generated from Giant King Grass grown on the island.

[www.bioenergy-news.com/index.php?/Industry-News?item\\_id=7592](http://www.bioenergy-news.com/index.php?/Industry-News?item_id=7592)

### **VIASPACE to partner on giant king grass biomass plant**

The biomass company VIASPACE and its Nicaraguan partners are forming a company in Nicaragua to own and operate the Giant King Grass plantation and co-located 12 MW power plant.

The 12MW biopower plant will be fuelled by a 2,100 acre Giant King Grass plantation that is co-located with the Miramontes rice plantation located on and irrigated from Lake Nicaragua. In total, the project will generate 84,000,000 kWh of saleable electricity which will be transmitted on the national grid and sold both to the grid and to private customers.

[www.renewableenergymagazine.com/article/viaspace-to-partner-on-giant-king-grass-20140411](http://www.renewableenergymagazine.com/article/viaspace-to-partner-on-giant-king-grass-20140411)

### **CRIBE funds Eastern Ontario biofuels plant**

Thunder Bay-based Centre for research and innovation in the Bio-Economy (CRIBE) is providing up to \$1.5mn to leverage up to \$4mn to increase production capacity at Ensyn Technologies' Renfrew biofuel plant in Eastern Ontario.

[www.northernontariobusiness.com/Industry-News/energy/2014/04/CRIBE-funds-eastern-Ontario-biofuels-plant.aspx](http://www.northernontariobusiness.com/Industry-News/energy/2014/04/CRIBE-funds-eastern-Ontario-biofuels-plant.aspx)

### **Incbio to supply biodiesel plant to South American client**

Porto, Portugal-based biodiesel technology provider Incbio announced that it has secured an agreement to supply a 55,000 ton per year (16.5 MMgy) biodiesel plant for an undisclosed South American client.

The plant will incorporate Incbio's ultrasonic technology to produce biodiesel from locally produced palm oil, along with ion exchange resin towers for purification. Incbio expects the plant to be complete by December 2014.

[www.biodieselmagazine.com/articles/46184/incbio-to-supply-biodiesel-plant-to-south-american-client](http://www.biodieselmagazine.com/articles/46184/incbio-to-supply-biodiesel-plant-to-south-american-client)

### **BHS installs 30000 TPA material recycling facility in Bakersfield, California**

Bakersfield, California based Metropolitan Recycling (MRC), a joint venture formed by five privately held local recycling companies, has opened a new state-of-the-art 50,000 square foot (4645 square metre) Material Recycling Facility (MRF).

The facility is expected to process around 30,000 tons (27,200 tonnes) of material each year and has been fitted with equipment designed, manufactured and installed by Eugene, Oregon based Bulk Handling Systems (BHS).

[www.waste-management-world.com/articles/2014/04/bhs-installs-30-000-tpa-material-recycling-facility-in-bakersfield-california.html](http://www.waste-management-world.com/articles/2014/04/bhs-installs-30-000-tpa-material-recycling-facility-in-bakersfield-california.html)

### **TruStar Energy to build large CNG fueling station for High Plains Bioenergy**

TruStar Energy has announced the contract award for a large, fast-fill Compressed Natural Gas (CNG) fueling station for High Plains Bioenergy, a wholly owned subsidiary of Seaboard Foods – a division of Seaboard Corporation.

The two-compressor CNG fueling station will be configured to provide fuel for a wide array of Seaboard heavy-duty vehicles that move products both locally and in an over-the-road application.

[www.azobuild.com/news.aspx?newsID=18274](http://www.azobuild.com/news.aspx?newsID=18274)

### **CSR partners to convert railroad ties into biofuel**

The Coalition for Sustainable Rail has announced that it is initiating research on conversion of used railroad into an advanced biofuel. This research, funded through a generous grant from the Indiana Rail Road, is a first look into the viability of "upcycling" used railroad ties into biofuel.

[www.biomassmagazine.com/articles/10291/csr-partners-to-convert-railroad-ties-into-biofuel/](http://www.biomassmagazine.com/articles/10291/csr-partners-to-convert-railroad-ties-into-biofuel/)

### **Phoenix Energy to build California biomass gasification plant**

Phoenix Energy announced it has signed agreements to build and operate a biomass gasification plant near Lake Tahoe, Calif. The 2-MW plant will utilize forest biomass from Placer County's fire threat reduction activities to make electricity, heat and biochar—a solid carbon byproduct that is used as a soil conditioner and filter media.

[www.biomassmagazine.com/articles/10287/phoenix-energy-to-build-california-biomass-gasification-plant/](http://www.biomassmagazine.com/articles/10287/phoenix-energy-to-build-california-biomass-gasification-plant/)

### **Viridis Energy to upgrade Scotia Atlantic Biomass operational facilities**

Viridis Energy Inc.'s subsidiary, Scotia Atlantic Biomass Company Limited ("Scotia") has been awarded a capital investment incentive of up to 517,520 Canadian dollars by the Government of Nova Scotia.

Initial proceeds from the incentive will be used for the purchase of new capital equipment to improve production facilities at Scotia's plant. Additional proceeds from the incentive will be drawn over the next several months.

[www.lesprom.com/en/news/Viridis\\_Energy\\_to\\_upgrade\\_Scotia\\_Atlantic\\_Biomass\\_operational\\_facilities\\_61668/](http://www.lesprom.com/en/news/Viridis_Energy_to_upgrade_Scotia_Atlantic_Biomass_operational_facilities_61668/)

### **US wood pellet exports to Europe hit record high to meet biomass demand**

Export volumes hit a new record high in the fourth quarter of 2013 and the total shipments for 2013 were up almost 50% from the previous year and more than double that in 2011. The total value of wood pellet exports reached over 650 million dollars last year.

Europe's boom in biomass demand has led to a doubling of wood pellet exports from North America in just two years to reach 4.7 million tons in 2013, according to the latest data.

North America exported wood pellets valued at over 650 million dollars in 2013, a dramatic increase of more than 250 percent in just two years, according to new research released by the North American Wood Fibre Review.

The US South shipped almost three million tons last year, which was almost two-thirds of total export volume from North America,

A rapid expansion of pellet production capacity in the US South during 2012 and 2013 has resulted in a tripling of pellet production in the region in just two years. The expansion, which is entirely driven by demand for biomass in Europe, has increased pellet exports from 800,000 tons in 2011 to 2.9 million tons in 2013. Many of the recent investments in pellet capacity in the US South have occurred along the Atlantic coast, with Enviva and Fram Renewables expanding production in the states of Georgia, North Carolina and Virginia.

[www.clickgreen.org.uk/news/international-news/124507-us-wood-pellet-exports-to-europe-hit-record-high-to-meet-biomass-demand.html](http://www.clickgreen.org.uk/news/international-news/124507-us-wood-pellet-exports-to-europe-hit-record-high-to-meet-biomass-demand.html)

### **Southwest Renewable Resources to develop 25MW bioenergy facility in Nebraska**

[www.biomassmagazine.com/articles/10341/proposed-neb-plant-to-produce-biomass-fuel-bioenergy](http://www.biomassmagazine.com/articles/10341/proposed-neb-plant-to-produce-biomass-fuel-bioenergy)

### **Green chemistry' firm to build \$105mn biomass plant in NE Minnesota**

The company is seeking \$21.2 million in financing for the plant from the Iron Range Resources & Rehabilitation board, The Minneapolis/St. Paul Business Journal reports.

[www.bringmethenews.com/2014/04/23/green-chemistry-firm-to-build-biomass-plant-in-ne-minnesota/](http://www.bringmethenews.com/2014/04/23/green-chemistry-firm-to-build-biomass-plant-in-ne-minnesota/)

### **Novozymes increases sales of enzymes to the bioenergy industry**

[www.ethanolproducer.com/articles/10983/novozymes-increases-sales-of-enzymes-to-the-bioenergy-industry](http://www.ethanolproducer.com/articles/10983/novozymes-increases-sales-of-enzymes-to-the-bioenergy-industry)

### **W2 Energy starts biofuel production at Cambridge plant**

W2 Energy, Inc. has started biofuel production at its plant in Cambridge, Ontario. After evaluating test batches of biofuel, the company said the biofuel plant installation is expected to regularly generate fuel that meets fuel standards set by ASTM International, formerly known as the American Society for Testing and Materials (ASTM).

[www.pennenergy.com/articles/pennenergy/2014/04/w2-energy-starts-biofuel-production-at-cambridge-plant.html](http://www.pennenergy.com/articles/pennenergy/2014/04/w2-energy-starts-biofuel-production-at-cambridge-plant.html)

### **REG reaches one billion gallon biofuel milestone**

North American biodiesel producer Renewable Energy Group (REG) has sold one billion gallons of advanced biofuel. The company said it achieved the milestone through investments in value chain including its manufacturing, sales & marketing, and supply chain management capabilities.

The company noted that it is also committed to research and development as well as continuous improvement, enabling it to streamline the production process and expand the variety of raw materials used to make biodiesel.

[www.biofuelsandbiomass.energy-business-review.com/news/reg-reaches-one-billion-gallon-biofuel-milestone-240414-4218929](http://www.biofuelsandbiomass.energy-business-review.com/news/reg-reaches-one-billion-gallon-biofuel-milestone-240414-4218929)

### **Neopost signs on for pollution-free energy with Bullfrog Power**

Bullfrog Power, Canada's leading green energy provider, announced that Neopost Canada, a mailing equipment and software solutions provider, has chosen 100% green electricity and 100% green natural gas for its Canadian facilities.

In addition, Neopost Canada will be bullfrog powering all installations of mailing systems for new customers across Canada with renewable electricity. By choosing clean, green energy with Bullfrog Power, Neopost Canada is reducing its environmental impact and supporting the growth of green energy projects in Canada.

Through the multi-year agreement, Bullfrog Power's generators will put 100% green electricity onto the grid to match the power consumption of Neopost Canada's facilities and the mail machines used by customers new to Neopost.

[www.biofuelsandbiomass.energy-business-review.com/news/neopost-signs-on-for-pollution-free-energy-with-bullfrog-power-150414-4215166](http://www.biofuelsandbiomass.energy-business-review.com/news/neopost-signs-on-for-pollution-free-energy-with-bullfrog-power-150414-4215166)

### **Eastern Illinois University opens biomass research facility**

Eastern Illinois University continued its dedication to clean energy today by opening its new research facility, Center for Clean Energy Research and Education, dedicated to alternative fuel exploration.

The facility will also give additional support to the Master's in Sustainable Energy program, started at EIU in Spring 2013 as a collaborative effort by 10 departments across campus. The one-of-a-kind program allows students to receive a mixture of hands-on learning and theory inside the classroom, internships and research practicums.

The project for the facility was funded by the Charleston Area Charitable Foundation. EIU's Board of Trustees formally approved the creation of the research facility on Jan. 14, 2011.

[www.biomassmagazine.com/articles/10362/eastern-illinois-university-opens-biomass-research-facility](http://www.biomassmagazine.com/articles/10362/eastern-illinois-university-opens-biomass-research-facility)

### **New renewable fuels retail station breaks ground in Iowa**

The fueling site will offer ethanol blends E10, E15 as a registered fuel, E30 and E85, as well as biodiesel blends B10, B20 and B99 for jobbers and special use customers.

Iowa is the leader in renewable fuels production with 42 ethanol refineries capable of producing more than 3.8 billion gallons annually, three cellulosic ethanol facilities currently under construction and 12 biodiesel facilities with the capacity to produce nearly 315 million gallons annually.

The Iowa Renewable Fuels Association was formed in 2002 to represent the state's liquid renewable fuels industry. The trade group fosters the development and growth of the renewable fuels industry in Iowa through education, promotion, legislation and infrastructure development.

[www.biodieselmagazine.com/articles/66628/new-renewable-fuels-retail-station-breaks-ground-in-iowa](http://www.biodieselmagazine.com/articles/66628/new-renewable-fuels-retail-station-breaks-ground-in-iowa)

### **Canadian firm innovates concrete production with carbon capture**

CarbonCure Technologies has developed a new way to reduce carbon emissions, which can also potentially revolutionise the building industry.

CarbonCure Technologies, a clean-tech company based in Halifax Nova Scotia in Canada, has devised a way to inject carbon dioxide into the production of concrete blocks. According to the firm, this not only helps cement and concrete manufacturers to create a significantly green building material, but it also addresses the wider concern of global emissions reduction.

The firm, which started to attract attention in 2012, uses the concept of Carbon Capture and Storage (CCS) in its CarbonCure system. The patent-pending technology takes carbon dioxide waste, such as those from large emitters like refineries and fertilizer plants, and mixes it into the concrete during the production phase. The chemical reaction that happens, the firm explains, is a reversal of the process used to make cement, a key ingredient in concrete.

[www.eco-business.com/news/canadian-firm-innovates-concrete-production-carbon-capture/](http://www.eco-business.com/news/canadian-firm-innovates-concrete-production-carbon-capture/)

## **Latin America**

### **Albioma acquires shares in Brazilian co-gen plant**

Albioma, a France-based independent energy producer, has finalised its acquisition of the totality

of shares in Rio Pardo Termoelétrica, a cogeneration plant situated in the São Paulo region in Brazil.

The bagasse cogeneration plant, which has an installed capacity of 60MW, was commissioned in 2009. Albioma says its 'expertise should enable significant improvements in the energy efficiency of the existing structure'. The company will also have scope to build a 15MW extension.

[www.bioenergy-news.com/index.php?/Industry-News?item\\_id=7590](http://www.bioenergy-news.com/index.php?/Industry-News?item_id=7590)

### **GE's landfill gas engine technology powers WTE project in Latin America**

GE's Distributed Power business says commissioning for three of its Jenbacher gas engines is expected to take place this month at Estre Ambiental's landfill in Brazil's Guatapara City, Sao Paulo.

Once the facility begins commercial operation in May, it will be the first waste-to-energy project at an Estre landfill, one of the largest municipal solid waste operations in Latin America.

Under the scope of the project, GE will provide three 1.4MW J420 Jenbacher gas engines for an estimated total output of 4.2MW, with the potential to be expanded to 10MW in the next five years.

The new Estre Ambiental landfill project supports the initiatives of the Brazilian government to increase the production of electricity from renewable sources and may reduce the country's greenhouse gas emissions by between 36.1 and 38.9% from projected amounts in 2020. It may reduce the equivalent of about 70,000 tonnes of CO2 emissions into the atmosphere.

The announcement comes just days after GE launched its Distributed Power business in Latin America on 8 April in Mexico City. The business is focused on power generation at or near the point of use, including a potential \$1.4 billion (€1 billion) investment in technology to develop new and improved products for customers.

[www.bioenergy-news.com/index.php?/Industry-News?item\\_id=7657](http://www.bioenergy-news.com/index.php?/Industry-News?item_id=7657)

### **NexSteppe sells over 1,000ha of Palo Alto high biomass sorghums in Brazil**

[www.biofuelsandbiomass.energy-business-review.com/news/nexsteppe-sells-over-1000ha-of-palo-alto-high-biomass-sorghums-in-brazil-170414-4217104](http://www.biofuelsandbiomass.energy-business-review.com/news/nexsteppe-sells-over-1000ha-of-palo-alto-high-biomass-sorghums-in-brazil-170414-4217104)

### **Analytica Bio-Energy, Green Giant sign agreement to develop carbon credits**

Analytica Bio-Energy has announced the engagement of Green Giant Venture Fund as part of the Company's plans to develop and forward sell Carbon Credits.

Green Giant is a leading broker in the global Carbon Credits market. Green Giant Venture Fund will develop these credits and the required documentation for ABEC. Green Giant Venture Fund will also seek to secure multiple forward sale offers of these Credits on behalf of /for ABEC.

[www.biofuelsandbiomass.energy-business-review.com/news/analytica-bio-energy-green-giant-sign-agreement-to-develop-carbon-credits-160414-4215520](http://www.biofuelsandbiomass.energy-business-review.com/news/analytica-bio-energy-green-giant-sign-agreement-to-develop-carbon-credits-160414-4215520)

## **Europe**

### **Work progresses with Bulgarian gasification plant**

Eqtec Iberia, part of Spanish holding company Ebioss Energy, is progressing with the construction of its 5MW Karlovo renewable plant located in Bulgaria's Plovdiv province. The biomass-to-energy plant will process straw and woodchips to generate enough electricity to power 2,000 homes.

The plant is scheduled for completion by the end of 2014 and will help Bulgaria produce 16% of its energy demand from renewable sources – a target which must be met by 2020.

[www.bioenergy-news.com/index.php?/Industry-News?item\\_id=7612](http://www.bioenergy-news.com/index.php?/Industry-News?item_id=7612)

### **Belarus gets \$90mn for biomass district heating project**

The World Bank has approved a loan worth \$90mn (£54m) for a biomass district heating network in Belarus. The project will finance replacement of existing gas and oil boilers with biomass, installation of individual building-level heat substations with temperature control and the upgrade of district heating networks.

[www.energylivenews.com/2014/04/01/belarus-gets-90m-for-biomass-district-heating-project/](http://www.energylivenews.com/2014/04/01/belarus-gets-90m-for-biomass-district-heating-project/)

### **Xebec announces commissioning of first biogas to renewable hydrogen purification plant in Europe**

[www.newswire.ca/en/story/1334245/xebec-announces-the-commissioning-of-the-first-biogas-to-renewable-hydrogen-purification-plant-in-europe](http://www.newswire.ca/en/story/1334245/xebec-announces-the-commissioning-of-the-first-biogas-to-renewable-hydrogen-purification-plant-in-europe)

### **UK's first waste wood biomass plant starts**

The plant will produce 10.3MW of electricity and divert 67,000t of waste away from landfill.

[www.nce.co.uk/features/bio-power-energy-uks-first-waste-wood-biomass-plant/8661274.article?blocktitle=Top-features&contentID=1079](http://www.nce.co.uk/features/bio-power-energy-uks-first-waste-wood-biomass-plant/8661274.article?blocktitle=Top-features&contentID=1079)

### **Ingenious Clean Energy backs first AD plant in the UK**

The plant, managed by Generation X, is expected to produce around 8,500MWh of electricity every year when complete the equivalent of powering 2,600 homes. The plant will allow Thomas Swan to reduce its reliance on and consumption of fossil fuel derived electricity by as much as 100% and heating by up to 20%.

[www.renewableenergyfocus.com/view/37852/ingenious-clean-energy-backs-first-anaerobic-digestion-plant-in-the-uk/](http://www.renewableenergyfocus.com/view/37852/ingenious-clean-energy-backs-first-anaerobic-digestion-plant-in-the-uk/)

### **Neol to perform ag-waste-to-oil scale-up testing at CB2G**

Neol's Microbioil-2.0 technology platform uses a microorganism that can convert ag waste like wheat straw into industrial oils for biodiesel production.

Grenada, Spain-based Neol Biosolutions S.A. has reached an agreement with the Center for Second Generation Biofuels (CB2G) of the Spanish National Renewable Energy Center (CENER) to initiate scale-up testing of its Microbioil-2.0 technological platform.

[www.biodieselmagazine.com/articles/46055/neol-to-perform-ag-waste-to-oil-scale-up-testing-at-cb2g](http://www.biodieselmagazine.com/articles/46055/neol-to-perform-ag-waste-to-oil-scale-up-testing-at-cb2g)

### **British airways selects Essex site for biofuel plant**

[www.buyingbusinesstravel.com/news/1622308-ba-chooses-essex-site-biofuel-plant](http://www.buyingbusinesstravel.com/news/1622308-ba-chooses-essex-site-biofuel-plant)

### **Vega Biofuel delivers 3,000 tons of biocoal to Europe**

Vega Biofuels received a 3,000 ton order from ECEM Salzburg Energy and Environment Consulting which will be the initial Bio-coal order produced at Vega's Joint Venture torrefaction manufacturing facility in Allendale.

[www.en.portnews.ru/news/179026/](http://www.en.portnews.ru/news/179026/)

### **First AD plant to convert food waste to biogas opened in wales**

The £6mn plant will process 11,000 tonnes of food waste collected from local homes and businesses by the council each year, diverting it from landfill to produce energy and biofertiliser for local farmland. The Welsh Government provided almost £2.4mn in initial funding to support the project.

[www.waste-management-world.com/articles/2014/04/first-ad-plant-to-convert-food-waste-to-biogas-opened-in-wales.html](http://www.waste-management-world.com/articles/2014/04/first-ad-plant-to-convert-food-waste-to-biogas-opened-in-wales.html)

### **Britain gives green light to almost double the number of RE projects over the next 5 years**

[www.voiceofrussia.com/uk/news/2014\\_04\\_24/Britain-set-to-increase-offshore-and-biomass-energy-projects-5939/](http://www.voiceofrussia.com/uk/news/2014_04_24/Britain-set-to-increase-offshore-and-biomass-energy-projects-5939/)

### **DECC unveils three biomass projects**

The first eight projects to be unveiled under the Government's Contracts for Difference (CfD) scheme include two coal to biomass conversions and a dedicated biomass plant with Combined Heat and Power (CHP), it has been announced.

[www.mrw.co.uk/news/decc-unveils-three-biomass-projects/8661728.article?blocktitle=Most-commented&contentID=-1](http://www.mrw.co.uk/news/decc-unveils-three-biomass-projects/8661728.article?blocktitle=Most-commented&contentID=-1)

### **Navitas Environmental to develop £60mn biopower facility**

The facility would process 86,000 tonnes of dry waste wood per year to generate 12MW of renewable energy, enough to provide electricity for 17,000 homes.

[www.hertsad.co.uk/news/business/construction\\_of\\_st\\_albans\\_biomass\\_facility\\_receives\\_go\\_ahead\\_1\\_3576659](http://www.hertsad.co.uk/news/business/construction_of_st_albans_biomass_facility_receives_go_ahead_1_3576659)

### **Algae cultivation, biodiesel project to be demoed in Portugal**

A consortium of biotechnology experts has started to build a one-hectare pilot unit for the production of microalgae in Portugal, according to Wageningen UR, one of the companies involved in the project. The unit will demonstrate an integrated approach to produce microalgae biomass with biodiesel validation in a sustainable manner.

The demonstration pilot unit is one of the milestones expected from the Integrated Sustainable Algae (InteSusAl) project, which aims to optimize production of algae by both heterotrophic and phototrophic routes. It will also demonstrate integration of these production technologies to achieve the microalgae cultivation targets of 90 to 120 dry tons per hectare per year.

[www.biodieselmagazine.com/articles/64926/algae-cultivation-biodiesel-project-to-be-demoed-in-portugal](http://www.biodieselmagazine.com/articles/64926/algae-cultivation-biodiesel-project-to-be-demoed-in-portugal)

## **Africa**

### **Tanzania: Biogas projects lights up 9000 households**

Tanzania Domestic Biogas Programme (TDBP), a renewable energy technology project based in Arusha has successfully manufactured and installed 9000 biogas plants in various households in Tanzania in the last five years.

[www.allafrica.com/stories/201404010297.html](http://www.allafrica.com/stories/201404010297.html)

### **Portuguese firm delivers 2.4 MMgy biodiesel plant to Tunisia**

The biodiesel has been delivered to Biokast Energy S.A., and unit will process used cooking oil collected from restaurants in Tunisia.

[www.biodieselmagazine.com/articles/54849/portuguese-firm-delivers-2-4-mmgy-biodiesel-plant-to-tunisia](http://www.biodieselmagazine.com/articles/54849/portuguese-firm-delivers-2-4-mmgy-biodiesel-plant-to-tunisia)

## Other Countries

### **Z Energy to build 5 MMgy biodiesel facility in New Zealand**

The plant would process tallow from the meat industry to produce 20mn litres of biodiesel a year which can be blended with traditional mineral diesel.

### **Envac to supply vacuum waste collection system to chinese hospital**

Stockholm, Sweden based underground automated vacuum waste collection specialist, Envac, has secured its largest tri-system contract with Hainan Cancer Hospital, an international centre of healing and research in Haikou City, China. Under the deal, estimated to be worth almost €3.6mn, Envac will install a system to the general waste of over 11,000 staff and patients, as well as the laundry of the 1200 bed hospital.

The development will integrate Envac's general waste system, its linen collection system, which will transport laundry around the entire site, and the kitchen waste system throughout the hospital's 230,000 m<sup>2</sup> build area.

[www.waste-management-world.com/articles/2014/04/envac-to-supply-vacuum-waste-collection-system-to-chinese-hospital.html](http://www.waste-management-world.com/articles/2014/04/envac-to-supply-vacuum-waste-collection-system-to-chinese-hospital.html)

### **Imdaad to use biofuel in waste collection vehicles**

As part of its new "Go Green" initiative to build sustainable communities in the UAE, Imdaad has started using biofuel in three of its waste collection vehicles in a bid to reduce its carbon footprint by using a natural and renewable alternative to fossil fuel. The company claims it is the only FM outfit in the UAE to make use of biofuel in its waste collection vehicles, and that the trucks running on biofuel will help in the reduction of particulate emission without any degradation in performance.

[www.constructionweekonline.com/article-27602-imdaad-to-use-biofuel-in-waste-collection-vehicles/#.U1IfAaIkiho](http://www.constructionweekonline.com/article-27602-imdaad-to-use-biofuel-in-waste-collection-vehicles/#.U1IfAaIkiho)

### **World's first biomass JV cluster to be launched in Sandakan**

The world's first biomass joint-venture cluster has been launched at the 5<sup>th</sup> International Palm Oil Expo (PalmEx) 2014 in Sandakan. Chief Minister Datuk Seri Musa Aman is expected to launch the event which is jointly organised by the Ministry of Industrial Development (MID), Department of Industrial Development and Research (DIDR), Fireworks Event (M) Sdn Bhd, Palm Oil Industry Cluster (POIC) Sabah Sdn Bhd, Sandakan Bulkiers Sdn Bhd and Sandakan Municipal Council.

[www.theborneopost.com/2014/04/29/worlds-first-biomass-jv-cluster-to-be-launched-in-sandakan/](http://www.theborneopost.com/2014/04/29/worlds-first-biomass-jv-cluster-to-be-launched-in-sandakan/)

# Finance & Investment

## India

### **EIB provides 200 million euro for climate projects in India**

The European Investment Bank (EIB) announced a 200 million euro loan agreement with India Infrastructure Finance Company Ltd (IIFCL) to help finance projects that will contribute to the mitigation of climate change in India.

The project schemes will be identified and presented by IIFCL. The EIB will ensure that all projects are economically and financially viable, technically adequate and in compliance with the Bank's social and environmental standards and Guide to Procurement. The long-term loan will be repaid in installments over the next 20 years. The EIB finance will cover up to 50% of the total project cost.

This is the sixth operation of its kind in India and the Bank's first lending operation with IIFCL, a government entity that promotes infrastructure investments. This loan is being provided under the EUR 4.5 billion Energy Sustainability and Security of Supply Facility.

The Framework Loan will support the EU-India Strategic Partnership in the area of climate change, fostering the development of renewable energy and the efficient use of energy. It will also contribute to meeting energy demand and thus encourage economic growth and development in India.

**[www.neurope.eu/article/eib-provides-200-million-euro-climate-projects-india](http://www.neurope.eu/article/eib-provides-200-million-euro-climate-projects-india)**

### **Climate change research gets Norwegian aid**

Research on climate change and biodiversity in India received a boost on Tuesday with a Rs. 14-crore grant from the Norwegian Embassy to Bangalore-based Ashoka Trust for Research in Ecology and the Environment (ATREE) for five years.

While climate change research in India tends to focus on "adaptation measures" such as crop diversity or groundwater storage, these new resources will help ATREE look at "mitigation", including an assessment of emissions and land use change. The institute would launch a program that consolidates their climate change research, which comprises independent projects on subjects such as hydrology and forestry, he said.

The grant will also support 40 Indian Ph.D. students to undertake research in the field of sustainability, and enable faculty and student exchanges between Norwegian research institutes and ATREE. India and Norway have had a history of strong cooperation in the field of environmental research, said Norwegian Ambassador Eivind S. Homme, who launched the collaboration at the ATREE office.

**[www.thehindu.com/news/national/karnataka/climate-change-research-gets-norwegian-aid/article5963655.ece](http://www.thehindu.com/news/national/karnataka/climate-change-research-gets-norwegian-aid/article5963655.ece)**

## North America

### **USDA rural development supports biofuel investment**

USDA Rural Business-Cooperative Service Administrator Lillian Salerno went on a three-state Midwest tour last week to highlight USDA investments that are helping expand business opportunities in the bio-economy, including biofuels.

The new Farm Bill expands the potential for economic growth in rural America by maintaining momentum for the emerging bio-based industry and the more than 3,000 bio-based companies across the country.

The company has received nearly \$22 million in USDA Rural Development loan guarantees since it opened 13 years ago.

[www.domesticfuel.com/2014/04/15/usda-rural-development-supports-biofuel-investment/](http://www.domesticfuel.com/2014/04/15/usda-rural-development-supports-biofuel-investment/)

### **Colorado biofuel company raises a cool \$71 million in new funding**

Cool Planet Energy Systems Inc. raised another \$71.6 million in equity funding weeks after it broke ground on the company's first biofuel refinery. The Greenwood Village-based alternative energy company reported the fundraising round in a filing to the U.S. Securities and Exchange Commission.

Cool Planet has previously been backed by Google, BP and a consortium including General Electric, ConocoPhillips and NRG Energy. It reported \$49 million in new debt funding in September. Cool Planet's regulatory filing said \$51 million of the new funding will repay some debt. The company is building the first of three Louisiana bio-refineries it predicts will cost a total \$168 million to complete.

[www.bizjournals.com/denver/blog/earth\\_to\\_power/2014/04/colorado-biofuel-company-raises-a-cool-71-million.html](http://www.bizjournals.com/denver/blog/earth_to_power/2014/04/colorado-biofuel-company-raises-a-cool-71-million.html)

### **\$3 million earmarked for biofuels production fund**

Gov. Terry McAuliffe's budget has earmarked \$3 million over two years for a biofuels production fund.

[www.timesdispatch.com/news/latest-news/million-earmarked-for-biofuels-production-fund/article\\_a6e4863c-bb52-11e3-912e-0017a43b2370.html](http://www.timesdispatch.com/news/latest-news/million-earmarked-for-biofuels-production-fund/article_a6e4863c-bb52-11e3-912e-0017a43b2370.html)

### **CRIBE invests 1.5 million canadian dollars to increase capacity of Ensyn's biofuels facility in Canada**

Ontario, Canada-based non-profit research organization Centre for Research and Innovation in the Bio-Economy (CRIBE).

The Centre for Research and Innovation in the Bio-Economy (CRIBE) is investing 1.5 million canadian dollar to increase the production capacity of Ensyn Technologies' biofuel plant in Ontario, according to CNW news group.

According to CNW, the investment will help increase Ensyn's annual production capacity from 3 million liters to 13 million liters.

[www.vcpost.com/articles/23147/20140404/crife-invests-c-1-5m-to-increase-capacity-of-ensyns-biofuel-facility-in-canada.htm](http://www.vcpost.com/articles/23147/20140404/crife-invests-c-1-5m-to-increase-capacity-of-ensyns-biofuel-facility-in-canada.htm)

### **Ben Franklin to invest \$25,000 in bio-energy holdings**

The Ben Franklin Technology Partners of Northeastern Pennsylvania's (BFTP/NEP) Board of Directors has approved the investment of \$939,885 in support of regional economic development. BFTP/NEP's goal is to help lead northeastern Pennsylvania to a better economic future by building partnerships that develop and apply technology for competitive advantage.  
[www.moscowvillager.com/article/20140412/NEWS/140419939](http://www.moscowvillager.com/article/20140412/NEWS/140419939)

### **USDA funds help 3 Nebraska biofuel plants**

Undersecretary of Agriculture Doug O'Brien has announced that U.S. Department of Agriculture is making nearly \$60million in payments to 195 producers to support the production of advanced biofuels. The company produces biodiesel from soyabean and other oils at facilities located in Sergeant Bluffs and Algona, Iowa and St. Joseph.

The company operates an ethanol processing facility in Lezington, Neb. Ethanol produced from sorghum feedstock (versus corn) qualifies as an advanced biofuel and therefore is eligible to receive payments under the Advanced Biofuel Producer Payment Program.

The funding is being provided through the Advanced Biofuel Producer Payment Program, which was established in the 2008 farm bill and reauthorized in the recently signed 2014 farm bill.

Through this program and others at USDA, the department is working to support the research, investment and infrastructure necessary to build a robust and lasting biofuels industry that creates jobs and broadens the range of feedstocks used to produce renewable fuel. It has supported the production of more than four billion gallons of advanced biofuel and the equivalent of more than 40 billion kilowatt hours of electric energy.

[www.hpj.com/archives/2014/apr14/apr7/0314BiofuelSupportdbsr.cfm](http://www.hpj.com/archives/2014/apr14/apr7/0314BiofuelSupportdbsr.cfm)

### **Clarkson University clean energy project receives federal grant**

A Clarkson University project in the Department of Civil and Environmental Engineering in the US has received a grant of \$499,124 to support research into anaerobic digesters that help break down organic waste for application in the energy production industry.

The grant was awarded by the US Department of Agriculture through the Agriculture and Food Research Initiative (AFRI).

Anaerobic digesters are airtight containers or pits which contain bacteria that break down waste and produce methane gas, which is then burned to create electricity and heat. The technology reduces waste, lowers costs for farmers, making small farms more self-sufficient.

[www.biofuelsandbiomass.energy-business-review.com/news/clarkson-university-clean-energy-project-receives-federal-grant-140414-4214093](http://www.biofuelsandbiomass.energy-business-review.com/news/clarkson-university-clean-energy-project-receives-federal-grant-140414-4214093)

## **Europe**

### **Small firms awarded £1.3mn to generate bioenergy from wetlands**

Energy Minister Greg Barker said that three UK companies have been awarded a share of over £1.3mn to spur on innovation in turning reeds and rushes from wetlands into bioenergy.

Contracts have been awarded to AMW IBERS, Natural Synergies and AB Systems, as part of a

Department of Energy and Climate Change competition to help entrepreneurs demonstrate new ways of turning plant-based material derived from harvesting wetlands into renewable heat and electricity.

Sustainably sourced bioenergy has an important part to play in the UK's future energy mix, with the potential to contribute around 11% of the UK's energy demand by 2020. The winning companies will use the funding to test their project designs in three wetland areas in the UK, including Somerset, Suffolk and Inverness.

[www.clickgreen.org.uk/news/national-news/124489-small-firms-awarded-13m-to-generate-bioenergy-from-wetlands.html](http://www.clickgreen.org.uk/news/national-news/124489-small-firms-awarded-13m-to-generate-bioenergy-from-wetlands.html)

### **Greenprav invests €35m in co-gen plant in Romania**

Greenprav, a Romania-based power producer, is developing a €35 million biomass-powered cogeneration plant in the town of Busteni.

The facility, expected to be operational by mid-2015, is being built by Irish firm Prime Energy Power, the main shareholder for SC Greenprav SRL Romania. Upon completion, the plant will produce renewable heat and power for nearby businesses and households. Around 18 million euro of the total investment will be direct financing from Greenprav.

[www.bioenergy-news.com/index.php?/Industry-News?item\\_id=7614](http://www.bioenergy-news.com/index.php?/Industry-News?item_id=7614)

### **Norway's 860 billion dollar fund to double green energy investments**

[www.in.reuters.com/article/2014/04/04/norway-oilfund-greenenergy-idINO9N0MG02U20140404](http://www.in.reuters.com/article/2014/04/04/norway-oilfund-greenenergy-idINO9N0MG02U20140404)

Norway's \$860 billion oil fund should nearly double its investments in renewable energy to up to 50 billion Norwegian crowns, the finance ministry said on Friday in a major review of the fund.

The government also plans to study the risks and benefits of allowing the fund to expand its investment portfolio to unlisted companies, the ministry added.

### **Green Investment Bank funds UK's biogas plant**

The first project funded by the UK Green Investment Bank (GIB), through its Foresight-managed fund, has started generating power.

The plant will process up to 50,000 tonnes of green and food waste annually and will produce 14,000 tonnes of compost and 36,000 tonnes of digestate every year for agricultural use.

The facility will also generate around 1.15MW of residual heat which will be used by Closed Loop Recycling – a plastic bottle recycling plant.

[www.energylivenews.com/2014/04/25/uks-green-bank-funded-biogas-plant-opens/](http://www.energylivenews.com/2014/04/25/uks-green-bank-funded-biogas-plant-opens/)

# Research & Development

## North America

### **[Engineered bacteria produce biofuel alternative for rocket fuel](#)**

Researchers at the Georgia Institute of Technology and the Joint BioEnergy Institute have engineered a bacterium to synthesize pinene, a hydrocarbon produced by trees that could potentially replace high-energy fuels, such as JP-10, in missiles and other aerospace applications.

By placing colonies of E. coli engineered to produce pinene into test tubes containing glucose, researchers were able to determine which enzyme combinations produced the hydrocarbon most efficiently.

Funded by Georgia Tech startup funds awarded to Peralta-Yahya's lab and by the U.S. Department of Energy's Office of Science, the research was reported Feb. 27, 2014, in the journal ACS Synthetic Biology.

**[www.biomassmagazine.com/articles/10238/engineered-bacteria-produce-biofuel-alternative-for-rocket-fuel](http://www.biomassmagazine.com/articles/10238/engineered-bacteria-produce-biofuel-alternative-for-rocket-fuel)**

### **North Dakota Canola for aviation biodiesel explored**

Canola from North Dakota farmers could be the next source for biodiesel for aircraft. Researchers in the northern plains have been exploring the oilseed's possibility to fill aviation fuel tanks since 2011.

The Northern Great Plains Research Laboratory in Mandan is one of eight locations testing different plant products for biofuels. The focus here has been on oilseeds such as canola, rapeseed camelina and mustard. About 1.8 gallons of biodiesel are already made from canola each year.

The oilseed varieties are being judged on their economic and environmental impacts. Researchers are trying to find varieties not used for food that fit into existing crop rotations and that improve soil quality.

**[www.domesticfuel.com/2014/04/08/north-dakota-canola-for-aviation-biodiesel-explored/](http://www.domesticfuel.com/2014/04/08/north-dakota-canola-for-aviation-biodiesel-explored/)**

### **Scripps, UCSD algae biofuel programs rated top in US by DOE**

Scripps Institution of Oceanography and UC San Diego are taking the lead in developing an energy source that has the potential to be both cheaper and cleaner than fossil fuels - algae biofuels.

A new report issued by the U.S. DOE ranked algal biofuels research programs at UC San Diego as the two best in the country. The report specifically cited the lab's outstanding research in the genetic manipulation of algae to improve the yield of key components for biofuel production. Another UC San Diego research group, the UC San Diego Consortium for Algae Biofuel Commercialization (CAB-Comm), led by UC San Diego molecular biologist Stephen Mayfield, was

recognized by the DOE as the No. 2-ranked research program.

Scripps is also planning to begin tests using 100-percent renewable diesel fuel in research vessels starting with Robert Gordon Sproul in 2014. In addition to the benefit of being renewable and nearly carbon-neutral, renewable biodiesel results in cleaner emissions, thus improving air quality relative to fuels derived from petroleum. The high rankings from the DOE report will help secure future funding for their research.

[www.biodieselmagazine.com/articles/46097/scripps-ucsd-algae-biofuel-programs-rated-top-in-us-by-doe](http://www.biodieselmagazine.com/articles/46097/scripps-ucsd-algae-biofuel-programs-rated-top-in-us-by-doe)

### **Hawaii to evaluate hemp for biofuel**

On April 30, Hawaii Gov. Neil Abercrombie signed legislation into law that allows the University of Hawaii College of Tropical Agriculture and Human Resources to establish a two-year industrial hemp remediation and biofuel crop research program.

According to information released by the governor's office, the bill, S.B. 2175, authorizes the growth and cultivation of industrial hemp in accordance with requirements established by the 2014 Farm Bill. The project begins in July, and runs through July 2016.

As far as the biofuel component of the bill goes, it says that preexisting biodiesel plants in Hawaii are capable of meeting eight percent of the state's biodiesel needs for ground transportation, and that plants could potentially increase efficiency by utilizing industrial hemp as a feedstock, thus reducing the state's reliance on imported fuel.

[www.biomassmagazine.com/blog/article/2014/04/hawaii-to-evaluate-hemp-for-biofuel](http://www.biomassmagazine.com/blog/article/2014/04/hawaii-to-evaluate-hemp-for-biofuel)

## **Europe**

### **Strategies to culture microalgae for biodiesel production identified**

The Basque Institute for Agricultural Research and Development (Neiker-Tecnalia) coordinated research to culture microalgae in a way it can become more productive in terms of amount of usable oil for obtaining a more cost effective and environmentally sustainable biodiesel.

The research was also joined by the Tecnalia Research & Innovation Foundation, the National Renewable Energy Centre (Cener, Navarra), the Department of Biochemistry and Molecular Biology of the University of the Basque Country, the Association for Environment and Security in Aquitaine (Apeisa, France) and the Centre for Application and Transformation of Agro Resources (Catar- Critt, France).

The Energreen project was developed over two years with a budget of EUR 1 million, of which EUR 660,000 came from the European Regional Development Fund (ERDF).

The aim of the project was the rehabilitation of the traditional microalgae cultures to obtain microorganisms with high energy potential. To do this, scientists established specific strategies based on nutrient limitation, which made it possible to obtain biomass with high lipid content.

The culture model proposed in Energreen makes it possible to obtain reserve lipid enriched biomass while an increase in carbohydrates is produced, which gives rise to an energetically enriched microalgae biomass. The residual biomass generated after the extraction of oil has been evaluated for its methanogenic potential for biogas production.

Microalgae are an ideal source of bioenergy, since they do not compete with harvests destined for

food and could potentially produce higher yields. However, Neiker-Tecnalia experts point out that further progress is needed in the developments to allow the industrialization of the microalgae production process for bioenergy purposes.

[www.fis.com/fis/worldnews/worldnews.asp?monthyear=4-2014&day=2&id=67586&l=e&country=&special=&ndb=1&df=0](http://www.fis.com/fis/worldnews/worldnews.asp?monthyear=4-2014&day=2&id=67586&l=e&country=&special=&ndb=1&df=0)

# Climate & Environmental Change

## India

### **IPCC chairman urges nations to look beyond politics to fight climate change**

Rajendra K. Pachauri, IPCC chairman has appealed to the world community to replace the north-south distinction by concern for "humanity at large".

As a UN body - Intergovernmental Panel on Climate Change (IPCC) - in its latest report has set an alarm bell ringing for the world to the looming threats of global warming.

[www.timesofindia.indiatimes.com/home/environment/global-warming/IPCC-chairman-urges-nations-to-look-beyond-politics-to-fight-climate-change/articleshow/33185258.cms](http://www.timesofindia.indiatimes.com/home/environment/global-warming/IPCC-chairman-urges-nations-to-look-beyond-politics-to-fight-climate-change/articleshow/33185258.cms)

### **Global warming will lead to food insecurity: IPCC**

The 30-volume report, Climate Change 2014: Impacts, Adaptation, and Vulnerability, is the second installment of the IPCC's fifth assessment report.

IPCC report says unseasonal rains in India and excessive snowfall in the US all point to erratic weather patterns and climate change. Unchecked global warming will exacerbate fresh-water scarcity as well as hurt food production, driving up prices and increasing food insecurity and malnutrition.

These are among the key conclusions of the IPCC's report released on Monday in Yokohama for governments to consider while formulating their policies to address global warming.

[www.articles.economicstimes.indiatimes.com/2014-04-01/news/48767341\\_1\\_national-action-plan-climate-change-ipcc](http://www.articles.economicstimes.indiatimes.com/2014-04-01/news/48767341_1_national-action-plan-climate-change-ipcc)

### **India drafts policy to cut carbon emissions from deforestation**

India, one of the world's largest polluters, has drafted a national policy aimed at reducing its carbon emissions from deforestation as part of a global scheme which financially rewards developing nations for carbon stored through forest preservation.

But some environmentalists are skeptical, saying the move is unlikely to yield results as previous compensation schemes have not led to serious cuts in emissions.

India has the tenth largest forest coverage in the world. It is also the world's fifth largest carbon emitter, accounting for 5% of global greenhouse gases, according to the Indian government.

Around 300 million people - one quarter of India's population - are dependent on forestland, which occupies about 20 percent of the country's total territory. The national draft policy said there was significant scope for improving quality of forest cover by addressing degradation which is major problem facing centuries-old woodland in India.

The REDD+ program could provide for the capture of around 1 billion tonnes of additional CO<sub>2</sub> over the next three decades and significant financial incentives. "REDD+ can be a part of an effective strategy and tool for mitigation and adaptation of climate change, improving ecological and environmental services, biodiversity conservation as well as enhancing the forest based livelihood of forest dependent communities," said the draft policy document.

[www.dnaindia.com/india/report-india-drafts-policy-to-cut-carbon-emissions-from-deforestation-1984639](http://www.dnaindia.com/india/report-india-drafts-policy-to-cut-carbon-emissions-from-deforestation-1984639)

## North America

### **Canada's economy battered by climate change catastrophes in 2013**

Extreme weather events such as the flooding in Calgary and Toronto nearly kept the federal government from meeting its budget targets last year.

The Alberta flood alone cost the Canadian economy \$4.8 billion in economic losses. The clean-up bill came to \$1.9 billion — the single most costly disaster in Canadian history — and 90 per cent of it was on the federal tab because Canadians cannot buy flood insurance.

The Intergovernmental Panel on Climate Change warned that the effects of global warming are already noticeable and could spiral out of control without action.

[www.vancouversun.com/business/economy/Canada+economy+battered+climate+change+catastrophes+2013/9692432/story.html](http://www.vancouversun.com/business/economy/Canada+economy+battered+climate+change+catastrophes+2013/9692432/story.html)

## Europe

### **Climate change 'making extreme rainfall in England more likely'**

Climate change caused by humans has made the likelihood of extreme rainfall similar to that seen in England this winter significantly higher, according to analysis seen by the Guardian.

Rainfall events that would previously have occurred only once in a century are now likely to be witnessed once every eighty years in the south of England, the Oxford University work shows.

The scientists who conducted the study warned that this estimate of the frequency of extreme rainfall was based solely on current levels of observed rainfall in the recent past, compared with historical levels and those predicted for the future under a wide variety of possible scenarios under climate change.

[www.theguardian.com/environment/2014/apr/30/climate-change-extreme-rainfall-england-flooding](http://www.theguardian.com/environment/2014/apr/30/climate-change-extreme-rainfall-england-flooding)

## Other Countries

### **Consortia to study impacts of climate change in Asia, Africa**

A study on the impacts of climate change in Asia and Africa will be conducted by four new multi-partner research consortia and it will include case studies in India, Bangladesh, Pakistan and Nepal.

The announcement of the consortia was made during a conference organised at the joint initiative

of Canada's International Development Research Centre (IDRC) and the UK's Department for International Development (DFID).

The consortia is led by ICIMOD (International Centre for Integrated Mountain Development (ICIMOD) headquartered in Kathmandu. Bangladesh Centre for Advanced Studies, The Energy and Resources Institute (TERI) in India and the Pakistan Agricultural Research Council are its partners in Asia.

The Consortium working in deltas include the Bangladesh University of Technology and Engineering, and Jadavpur University in India and include research on the Ganges-Brahmaputra-Meghna and the Mahanadi deltas.

Other two consortia working in semi-arid regions include the Indian Institute for Human Settlement and the Sustainable Development Policy Institute of Pakistan.

The CARIAA will focus on three types of "hot spots" of the world, namely, semi-arid regions in Africa and South and Central Asia, major river deltas in Africa and South Asia, and the Himalayan River Basins. The purpose of forming the consortia is to contribute to effective policies and action on the ground that would minimize the climate change impacts.

CARIAA will provide key insights into future water supply and into effective adaptation options available at a local, national and regional scale in the countries dependent on the Hindu Kush Himalayan glaciers. The study which will find ways to adapt in some of the most vulnerable regions in Asia and Africa will be funded under a 7 year research initiative -- Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA). The program will cost Canadian dollar 70 million.

[www.zeenews.india.com/news/world/consortia-to-study-impacts-of-climate-change-in-asia-africa\\_928989.html](http://www.zeenews.india.com/news/world/consortia-to-study-impacts-of-climate-change-in-asia-africa_928989.html)