

DOST maps out new energy sources through LiDAR

By Joy M. Lazcano
S&T Media Service, DOST-STII

The government goes beyond hazards maps as the Department of Science and Technology (DOST) ventures out to far-reaching applications of its Light Detection and Ranging (LiDAR) technology as it maps out possible renewable energy resources through the PhiLiDAR project.

The PhiLiDAR project is actually an expansion project of the Disaster Risks Exposure and Assessment for Mitigation program which originally aims to produce 3D flood and hazard maps for the 18 major river systems of the country.

With the vast potential of its generated information resources, several applications, including the identification of mining resources and renewable energy, were lined up in the top list for exploration.

Nilo Peña of the Philippine Council for Industry, Energy, and Emerging Technology Research and Development of DOST, speaking on renewable energy during the recent Asia and Pacific Centre for Transfer of Technology (APCTT) conference at the Marco Polo Hotel in Davao City, revealed that the science

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An orthophotographic shot from the DREAM-LiDAR which shows the vegetation of an area. (Photo courtesy of www.upd.edu.ph)

DOST, PLDT in partnership for faster, more secure access to gov't websites

By Allan Mauro V. Marfal
S&T Media Service, DOST-STII



QUICK, SECURE, AND MORE EFFICIENT ACCESS TO GOVERNMENT WEBSITES. Department of Science and Technology Secretary Mario G. Montejo (seated, 2nd from right) leads the signing of the Memorandum of Agreement that will enable DOST and PLDT to come up with solutions for a more secure and more efficient access to government websites. Also in photo are (seated, R-L) Senator Paolo Benigno 'Bam' Aquino and PLDT Executive Vice President Eric R. Alberto and Head for Regulatory Affairs and Policies Atty. Ray Espinosa, (at the back, L-R) PLDT Vice President for Corporate Relationship Management Renato Castaneda, Vice President and Head of PLDT ALPHA Enterprise Jovy Hernandez, DOST Undersecretary and ICT Office Executive Director Louis Napoleon Casambre, and ICT Office Deputy Executive Director for e-Governance Denis F. Villorente (Photo by Gerardo Palad, S&T Media Service, DOST-STII).

The Department of Science and Technology (DOST) signed a Memorandum of Agreement (MOA) with Philippine Long Distance Telephone (PLDT) Company to help Filipino internet users in the country towards more secure, efficient, and faster access to various government websites. The signing was held last September 07, 2015 at Information and Communications Technology (ICT) Office in Diliman, Quezon City.

Said MoA defines the establishment of the fiber optic facilities that will link PLDT to the Philippine Open Internet Exchange (PHOpenIX) which is being operated by DOST's Advance

Science and Technology Institute (DOST-ASTI).

PHOpenIX, the first and only Internet exchange in the Philippine Internet industry operated by a neutral institution, was established by DOST-ASTI in 2007. It allows exchanges of Internet traffic in a free-market environment among local internet and data service providers.

Meanwhile, PLDT will provide rack space with power in its VITRO Data Center facility, where DOST can set up and operate its third PHOpenIX node. The first two nodes are operated by DOST-ASTI in Diliman and Globe Telecom in Makati.

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department is engaging on two resource-mapping projects on solar and wind energy for the whole country.

The APCTT conference titled "Southeast Asia Regional Training Programme on Renewable Energy Resource Assessment and Mapping" is a collaboration among the United Nations Economic and Social Commission in Asia and the Pacific, International Renewable Energy Agency, DOST's Technology Application and Promotion Institute and DOST Regional Office XI.

The objective of the projects is to determine the feasibility of establishing solar and wind farms in select areas of the country based on the data and information obtained through LiDAR technology.

This will work along with other cutting-edge Synthetic Aperture Radar and Interferometric Aperture Radar technologies that generate 2D and 3D images on the surface elevation and other geodetic deformation for mapping purposes with a resolution of one meter horizontal resolution.

Aside from these technologies, DOST-PCIEERD will use data coming from the Philippine Atmospheric, Geophysical, and Astronomical Services Administration synoptic and agromet stations and the Advanced

Science and Technology Institute's sensors through the DOST's weather observation network.

The agromet stations measure empirical data such as wind speed and direction, rainfall amount, intensity, pressure, relative humidity, temperature, solar radiation, sunshine duration, soil temperature, and soil moisture.

Through these data, DOST will determine possible source areas for the said renewable energies.

Peña says that Philippines has the highest installed wind power generation in the ASEAN region. With an estimated wind power potential of 76,000 megawatts, it is expected to triple in 15 years. Wind farms are already installed in Ilocos Norte, Rizal, and in some parts of the country while solar farms are present in provinces of Cagayan De Oro, Negros Occidental, and in Pampanga – the largest-- with 150 megawatts of power.

Growth slack in solar energy

However, the slow growth of solar energy in the country is blamed on the high cost of solar generation system. According to Peña, DOST's research and development on high efficiency but low cost solar cells have not insert to the previous sentence come into fruition.

Furthermore, the low feed-in tariff which the government requires power companies to purchase solar powers at P9.68 is still low compared with the P17.95 proposed by the National Renewable Energy Board.

Solar power, however, is more attractive to some off-grid areas in the country where households are still unreached by local power distributors. Yet even with patchy users in some islands of the country, the generation of solar energy is only estimated at 0.01 percent. Combined with the wind energy produced by the iconic Bangui wind turbines, the Philippines only produced 0.02 percent in 2012.

However, the Philippines may not be on the losing side, as the country is the first among the ASEAN economies to establish policies on renewable energy through Republic Act 9513 of 2008, which was enacted to hasten the country's exploration and development of renewable energy. Other countries in the ASEAN region have yet to formulate their own policies on renewable energy.

For this reason, DOST is helping out private players in the renewable energy generation and the government in identifying the efficient areas for the four renewable energy sources: hydropower, solar, wind, and biomass.

Through this, PLDT subscribers can experience better, faster access to government websites hosted in PHOpenIX.

DOST Undersecretary and ICT Office Executive Director Louis Napoleon Casambre admitted that the quality of the Internet in the Philippines relative to the rest of the world has been the subject of much criticism in the news, social media, and congressional hearings.

"One of the factors contributing to this negative observation is that our local providers are not peered with each other through a local exchange," said Casambre. "Internet traffic from one provider to another still has to pass through international channels before arriving to its intended local destination, causing unnecessary congestion of our connection to the rest of the internet."

Meanwhile, DOST Secretary Mario G. Montejó said that DOST's partnership with PLDT will allow the government over P21 million-worth of free use of the PLDT dark fiber for two years.

"Consequently, this will save the Filipino people significant time whenever they try to access government websites. This arrangement marks a stronger public-private partnership, especially in the field of connectivity," said Montejó.

"The PLDT Group has always been one with the DOST in its mandate to uplift the Filipino's quality of life, by leveraging the latest available information and communication technology capabilities that we have, and the resources that we can humbly contribute," said PLDT Executive Vice-President and ePLDT President Ernesto R. Alberto.

Senator Paolo Benigno "Bam" Aquino IV, who has been pushing for ICT connectivity, said they are not yet aiming for IP peering, but with a telco giant like PLDT as part of the PHOpenIX, it is now a step closer towards the goal.

In the same event also, DOST announced the designation of PHOpenIX as the government's official IP Exchange network in accordance with Administrative Order No. 39.

Two years ago, amid of the spate of defacements of government websites, Malacanang issued AO 39, mandating government agencies to migrate to the government web hosting service of DOST-ICT Office.

"I am happy to announce that migration of government websites is more than 80 percent complete, with the other 20 percent expected to have migrated fully by the end of this year," said Casambre.

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Framelia V. Anonas
Editor-In-Chief

Joy M. Lazzano
Copy Editor

James B. Intia
Layout

Maria Luisa S. Lumioan
Proofreader

Ferdinand D. Cartas
Circulation

Science and Technology Information Institute-
Department of Science and Technology
Bicutan, Taguig City, Metro Mla. 1631
Philippines

www.stii.dost.gov.ph

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DOST chief cheers SETUP assisted firms for rising up after Yolanda

By Joy L. Lazcano

S&T Media Service, DOST-STII



Healthy launch of veggie bread. DOST Sec. Mario G. Montejo (2nd from left) enjoys a mouthful of squash bread, a new and healthy food product offered by Peter Rodriguez (3rd from left), owner of Mayong's Snackhouse in Ormoc City. Mayong's Snackhouse is among the DOST-8 SETUP beneficiaries that received technology assistance from the Science Department. Also in photo are DOST Region 8 director Edgardo Esperancilla (extreme left) and Leyte provincial director John Glen Ocaña. *(Photo by Henry A. De Leon and text by Joy M. Lazcano, S&T Media Service, DOST-STII)*

Ormoc City, Leyte- Department of Science and Technology (DOST) Chief Mario G. Montejo made rounds on three successful DOST assisted firms in Ormoc City at the recent opening of the Visayas Cluster Science and Technology Fair hosted by DOST Regional Office 8 at the Ormoc City Superdome.

In his visit, Sec. Montejo was elated to see how Eastern Visayas has recovered from the debilitating effects of Super Typhoon Yolanda two years past. "I am glad that we are seeing firms that were affected by the calamity and are now getting back on their feet," said Montejo during one of the stops at Mayong's Bakeshop and Snackhouse.

Montejo who hails from Leyte, attended the launching of Mayong's two new veggie bread products, the squash and malunggay breads, which are the firm's contribution in fighting malnutrition in the region. According to Peter Rodriguez, chief executive officer of Rodriguez Burger and Bread Co., "Mayong's strives to provide healthy and quality food products over the years, that is why we sought DOST's help in achieving that business model."

Mayong's is one of the leading fast food and bakeshop firms in Ormoc and Leyte province.

Part of DOST's assistance under the Small and Medium Enterprise Technology Upgrading (SETUP) in the province is the transfer of technology in veggie breads to form a new line of food products that address the prevailing malnutrition in the province. Aside from this, DOST assisted in guiding the company on its packaging development, consultancy on efficient sanitation standard operations, and upgrading of processing equipment.

In a report given by Dr. Ma. Lourdes Lampong, City Nutrition Action Officer, the province has "malnutrition rate of 12 percent which exceeds the 10 percent allowable rate." "We are approaching the 13 percent mark, and the government should make the necessary actions to counter this trend," added Lampong.

On the other hand, Department of Education superintendent Carmela Tamayo said that the education department is including the veggie breads, which are developed by DOST, into the department's feeding program as part of the government's initiative in countering malnutrition in the province.

Aside from Mayong's, Montejo also visited Armea Enterprises, a firm that specializes in fabricating food processing equipment.

DOST helped the firm in acquiring the much needed metal working equipment such as bending and cutting machines. Juanita Armea intimated to Montejo that she used to outsource bending and cutting of metal sheets outside Ormoc City. "We bring them to Cebu just to bend the sheets which cost us P50 per bend," says Armea.

The firm now produces various lines of baking and kitchen equipment, and steel-based architectural. It also accepts contract services on metal works.

Aside from Mayong's and Armea Enterprises, Montejo made a short trip to Brgy. Bantique also in Ormoc to see the development of another SETUP Program beneficiary. Victor Kangleon of VSK Vehicle and Equipment Rentals received a boost in his metal fabrication business when he applied for assistance in acquiring industry grade metal bending equipment. VSK is producing chassis for light vehicles and trucks, steam wheel gears, oil mill shaftings, and sprocket U-belt for the geothermal plant in Leyte.

After the DOST assistance, VSK has a production capacity of 80 chassis for trucks and light vehicles while 20 steam wheel gears, 12 oil mill shaftings and four sprocket u-belt.

Philippine Science Heritage Center goes interactive

By Ma. Luisa Lumioan
S&T Media Service, DOST-STII

The Philippine Science Heritage Center now features five new interactive and digital exhibits to provide visitors a fun and exciting platform to learn about the rich science and technology culture of the country.

A repository of the outstanding accomplishments of the Filipino scientific community, the Center is located at the Science Heritage Building inside the Department of Science and Technology Complex in Bicutan, Taguig City. The latest additions to PSHC are the following:

National Scientists Browser

Get inspired with the life and works of our national scientists through this interactive exhibit. The browser allows the visitors to view the profile, contributions, education, and awards of the 41 National Scientists in the country via touch screen computer.

Be a Biologist

This interactive exhibit features two kiosks, each with digital microscope and a monitor. Users can observe the provided specimens under the microscope through the enlarged image projected in the screen/monitor.

Pinoy Biotech

The Pinoy Biotech exhibit features the recent developments in Philippine biotechnology. Visitors can learn about the biotech product or process by touching the related image to display the information on the large screen.



Philippine Science Heritage Center launches its initial five interactive Dig. exhibits at the Science Heritage building in DOST

Play DNA

This piano-inspired exhibit is an engaging way to teach visitors the concept of DNA—the molecules that contain the code used in the development, functioning and reproduction of living organisms. Each note represents a nucleotide—the building blocks of DNA. Play the suggested music or make your own by stepping on the giant piano to “create” different DNA sequences which will be shown on the screen.

Who's Who in Philippine Science

This exhibit showcases the recipients of National Academy of Science and Technology awards including recently recognized Academicians, Outstanding Young Scientists,

and Outstanding Books or Monographs, among others.

Formally launched last July 27, the new interactive exhibits are only a prelude of more things to come. More exhibits will be installed as the PSHC gears toward becoming a World Class Science Center in the country.

Established in 1998, the Center also conducts various activities such as science career orientation, seminar-workshop for teachers, and science symposia, to bring science closer to the public.

The PSHC is under the management of the NAST Philippines. It is open from Monday to Friday, 9:00 am to 4:00 pm. For reservations, contact the NAST Secretariat at tel. nos. (02) 838-7766 or (02)837-2071 loc 2171.

in focus



Datu Mahimugnanon. Sec. Mario Montejo receives the title Datu Mahimugnanon as Bae Noreta Gabao, the keeper of the Tiguahanon, a Manobo culture from the northern tribe of Bukidnon, prays the Panubad-tubad for God to bestow upon Sec. Montejo the skills as datu. Mahimugnanon is from the Manobo word “mugma” which means “to create and innovate”, aptly describing the Secretary’s role as head of the Department of Science and Technology which spearheads innovations in research and development in the country. The conferment was officiated during the “Gabi ng Sining at Siyensya”, part of the Science Nation Tour, a nationwide information campaign that aims to make Filipinos, especially those in the countryside, “feel” science and technology integrated in their daily lives. The tour hopped its sixth leg in Northern Mindanao region on Aug 20-23. **(Text by Framelia V. Anonas, Photos by Henry A. de Leon, S&T Media Service)**