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the 6th Asian School on
Renewable Energy:
Advanced Micropower
Systems**

**Launching of
“Fahiali Bandharu”**

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Practices and Retrofits
Options in Refrigeration
and Air-conditioning**

Maldives Participates in the 6th Asian School on Renewable Energy: Advanced Micropower Systems



Maldives Participates in the 6th Asian School on Renewable Energy: Advanced Micropower Systems. The five-day workshop was held at Puri Pujangga, UKM Bangi, Malaysia. This program that commenced on 1 July 2013 was organized by the Solar Energy Research Institute (SERI) of the National University of Malaysia (UKM) in cooperation with the Islamic Educational, Scientific and Cultural Organization (ISESCO); the United Nations Educational, Scientific and Cultural Organization (UNESCO); and the Turkish International Cooperation and Development Agency (TIKA).

During the inaugural ceremony, SERI welcomed the delegates, and ISESCO and TIKA delivered their remarks. The ceremony was officiated by the CEO of Malaysian Green Technology Corporation who highlighted the importance of accessibility to electricity and the use of solar energy for a sustainable economic development.

The objectives of the school include promoting the use of environment-friendly technologies in the developing countries of Asia; creating awareness among policy-makers, academicians and professionals of developing Asian countries on the concept of sustainable energy technologies such as solar, wind, biomass, fuel cell and hydrogen energy; introducing micro-financing schemes for micropower technologies; and orient the participants with the practical aspects of micropower system applications.

During the Technical Session 1 lectures were given to the participants on solar photovoltaic technology, solar thermal technologies (Active System), Pico hydro power system, solar thermal technologies (passive design and low energy architecture) and biomass technologies.

During the course of the program participants were given hands on training on the use of HOMER software and RETSCREEN software to design micropower systems. Also participants were taken on visit to Advanced Fabrication Silicon Solar Cell Laboratory, UKM to demonstrate the making of solar panels. In addition, practical training on solar energy technologies was given at the Green Technology Innovatoin Parks, UKM.

Participants from Azerbaijan, Bangladesh, Brunei, Iran, Iraq, Kazakhstan, Kyrgyzstan, Libya, Maldives, Tajikistan, Pakistan, Yemen and Malaysia presented their country background and the use of renewable energy on the fourth day of the workshop.

Launching of “Fahiali Bandharu”



“Fahiali Bandharu” was launched on the Male' North Harbor on 22 July 2013. The programme was launched by the Minister of Environment and Energy, Dr. Mariyam Shakeela. “Fahiali Bandharu” is one of the three components of the “Fahiali” programme which was launched during May 2013. The programme was developed with the intention of negating the effects of climate change, as well as reducing the amount of money spent on electricity. During the ceremony, an MoU was signed between the Ministry and Maldives Ports Limited regarding the maintenance and installation of Energy Efficient Harbor Lights which were donated by the Ministry.

Under this programme, 200 Energy Efficient Harbour Lights were donated to 5 regions throughout the Maldives. These regions are; Male', Kulhudhufushi, Thinadhoo, Fuvahmulah and Hithadhoo. Upon installation of these 200 Lights, 0.87 million Rufiyaa is expected to be saved from the electricity bill.

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Speaking at the ceremony, Dr. Mariyam Shakeela stressed upon the importance of the energy sector in the progression of sustainable development. She also stated that energy usage in the Maldives is increasing yearly, thus the need for energy efficiency and energy conservation. Concluding her speech, Minister said that she expects this programme to provide further assistance in achieving the goal of carbon neutrality and have a direct benefit on the Maldives economy.



The ceremony was attended by several Ministers, Heads of the Departments of the Ministry and council members from the five regions receiving lights. Symbolic handing over of the Energy Efficient Harbor Lights to the council members also took place during the ceremony.

Ministry signs an M.O.U with FENAKA to repair the R.O plants established in 10 islands

A Memorandum of Understanding was signed between the Ministry of Environment and Energy and FENAKA Corporation to repair the R.O plants established in 10 islands on 1 July 2013. The R.O plants were placed to minimize the negative effects of the extended drought periods and lack of rainfall during the end of North-West monsoon. Under this MoU, R.O plants placed in H.A Ihavandhoo, Sh. Funadhoo, N. Velidhoo, N. Maalhendhoo, Raa. Alifushi, Baa. Hithaadhoo, L. Isdhoo, GA. Villingili and GDh. Gahdhoo will be repaired.

Minister of State for Environment and Energy, Mr. Abdul Matheen Mohamed signed this agreement on behalf of the Ministry. The Managing Director of Fenaka, Mr. Mohamed Nimal signed the MoU on behalf of FENAKA Corporation Limited.



According to the MoU, the R.O plants in these islands 10 islands are to be refurbished within 180 days.

Workshop on Good Service Practices and Retrofits Options in Refrigeration and Air-conditioning

Ministry of Environment and Energy and the Ministry of Fisheries and agriculture jointly conducted one day workshop on “Good Service Practices and Retrofits Options in Refrigeration and Air-conditioning” at the Maldives Institute of Technology. The workshop was aimed for the R&AC technicians at the fisheries industry.



The main objective of this workshop is to impart theoretical knowledge and practical skills on retrofit options in refrigeration and air conditioning, and to create awareness about the good service practices. The lectures and the practical sessions were delivered by the lecturers of the Maldives institute of Technology. Development of design for retrofit options for the HCFC phase out in fisheries sector has been carried out by the Maldives institute of technology.

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At the closing ceremony of the workshop certificates for the participants were handed over by the Dr. Mohamed Shiham Adam, Director General of the Maldives Marine Research Centre and Mr. Mohamed Zahir, Director General of the Environment Department.

This training workshop is conducted under the a Memorandum of Understanding signed between The Ministry of Environment and Energy and Ministry of Fisheries and Agriculture to assist the fishing industry in Maldives to switch over from HCFC based Refrigeration and Air-Conditioning (RAC) technologies to HCFC free alternatives that are Ozone and Climate friendly

Winners of Maldives Green Fund Logo competition announced

Winners of Maldives Green Fund logo competition was announced by the Minister of Environment and Energy, Dr. Mariyam Shakeela. The winning logo of the Maldives Green Fund Logo Competition was announced and cash prize allocated for the winning logo was handed over at a special ceremony held at the Ministry of Environment and Energy, Green building. The winning logo was submitted by Mr. Hussain Athif, Dhoadhi, Sh. Kanditheemu.



Speaking at the ceremony, the Minister Dr. Mariyam Shakeela said that, the winning logo represents well the purposes of the Maldives Green Fund. Minister also said that the logo reflects on the rich culture of Maldives and is very original. The Minister congratulated Mr. Hussain Athif for winning the competition and thanked the panel of judges for their hard work and dedication in selecting the best logo.



The logos submitted for the competition was evaluated by an artist from National Centre for the Arts, Curator Mr. Ahmed Naeem, Director General of Environment Department of the Ministry, Mr. Mohamed Zahir and Manager of ICCRRIP Project, Ms. Najfa Shaheem Raazee. A total of 66 logos were submitted for the Maldives Green Fund Logo Competition.

Low Carbon Partnership Agreement signed between Maldives and Japan

The Government of the Republic of Maldives signs a Low Carbon Partnership Agreement with the Japanese government to promote Low Carbon Development. The signing was held on 29 June 2013 at Okinawa, Japan.

The agreement would help Maldives to mitigate the effects of climate change by increasing environmental friendly low carbon investments and establishing low carbon technologies in Maldives. This agreement would also help to gain further assistance from the government of Japan in the field of low carbon development.

Minister of Environment and Energy, Dr. Mariyam Shakeela signed this partnership agreement on behalf of the Government of Maldives. The Minister of Environment Mr. Nobuteru Ishihara signed this agreement on behalf of the Government of Japan. The Maldivian Ambassador for Japan, Mr. Ahmed Khaleel also joined this signing ceremony.

The agreement was signed under the “Bilateral Offset Credit Mechanism (BOCM)” initiative carried out by the Japanese Government in order to promote Low Carbon Development and Economy, to attain the sustainable development goal set by the United Nations Framework Convention on Climate Change (UNFCCC).

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This agreement would enable the establishment of deep sea cooling facility in Ibrahim Nasir International Airport, carried out by Male' Water and Sewerage Company (MWSC) and Hitachi Plus Technologies Limited. This Project aims to use environmental friendly energy system to cool the airport terminal area. All the investments for this project will be covered by the Japanese Government under this mechanism.

Corporation Agreement signed to implement “Montreal Protocol on Substances that Deplete the Ozone Layer”

An Agreement has been signed between the Ministry of Environment and Energy and Maldives Customs Service to increase the collaboration between the two parties in implementing the “Montreal Protocol on Substances that Deplete the Ozone Layer”. The Agreement was signed on 18 July 2013 at a special ceremony held at Maldives Customs Building. The Montreal Protocol on Substances that Deplete the Ozone Layer was designed to reduce the production and consumption of ozone depleting substances in order to reduce their abundance in the atmosphere, and thereby protect the earth's fragile ozone Layer.

On behalf of the Ministry of Environment and Energy, Dr. Mariyam Shakeela assigned the Agreement and from the Maldives Customs Service, the Commissioner General Mr. Mohamed Ashwan signed the Agreement.

Custom's role in environmental preservation is becoming increasingly recognized. Environmental challenges faced to the Maldives cannot be met by the

efforts of the Environment Ministry. We need to network among us and work actively to promote partnerships in protecting the environment



Speaking at the ceremony, Minister Dr. Mariyam Shakeela said that, Customs role in environmental preservation is becoming increasingly recognized and implementing environmental conventions cannot be met by the efforts of the environment Ministry alone. Recognizing the important role of Maldives Customs Service in implementing International Conventions by managing and controlling the import of substances that are harmful to the environment, Minister Dr. Shakeela thanked the Maldives Customs Service for the co-operation received during the CFC phase-out. She also noted the the current work being carried out by the Maldives Customs Service in controlling the import of HCFCs and thanked their effort

Maldives chairs the first session of the International Conference: “Advancing Ozone and Climate Protection Technologies: Next Steps”



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The Second International Conference focusing on the alternatives for air conditioning, foams, refrigeration, and other sectors, with a special focus on standards for climate-friendly alternatives has begun today in Bangkok. The first Session of the two day Conference: “Technology Innovations, Opportunities and Challenges” was moderated by the Permanent Secretary of Ministry of Environment and Energy Mr. Ahmed Saleem. While opening the session for the discussion, Mr. Saleem highlighted that it is time for the introduction and switching to new technologies which are more climate friendly.

This conference is organized by the United Nations Development Programme, the United Nations Environment Programme, the United States of America, the European Commission, and the Alliance for Responsible Atmospheric Policy.

The conference is attended by over 300 participants, including representatives from industry, governments, environmental organizations, and academia. The two day Conference is being held just after the meeting of the Montreal Protocol Open-Ended Working Group.

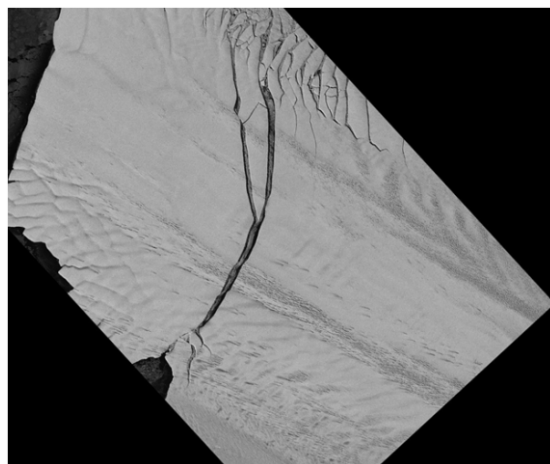
This conference offers the opportunity for stakeholders to share information and updates on technologies, policies, standards, and the availability and end-uses of climate-friendly alternatives.

further stated that this was affecting the tourism industry as well and that the solution lies in expanding the renewable energy sector of the Maldives. In her presentation, she stressed upon the various challenges faced in the exploitation of renewable energy and alternatively, the ways in which IRENA can provide assistance to overcome these challenges.

The IRENA is an intergovernmental Agency whose mission is to make an impact in the world of renewable energy by maintaining an independent position and providing reliable and comprehensive services that complement existing sustainable and renewable energy projects. The small scale waste-to-energy full project proposal submitted by the Maldives, focusing on three regions, namely Addu City, R.Vandhoo and HDh.Kulhudhufushi is currently under review by the Panel of Experts at IRENA. An executive summary of the proposal was initially submitted to IRENA, and was selected among the 19 proposals shortlisted from the originally submitted 80 proposals. Bilateral discussions are currently underway on the sectors in which IRENA could provide further assistance and IRENA has pledged to support the Maldives in these sectors.

New Findings

30-kilometre ice crack makes PIG calve



A massive crack has split the Pine Island glacier (PIG) in Antarctica, creating an iceberg the size of New York City.

Such breaks in the ice shelf, where the glacier extends off the land and floats above the water, happen fairly regularly – PIG also birthed icebergs in 2001 and 2007. But this crack took longer than usual to spread, allowing the ice shelf to grow for longer and resulting in a whopper of an iceberg.

Honourable Minister Dr. Mariyam Shakeela attends the 5th Meeting of the Council of the IRENA

Minister of Environment and Energy, Honourable Dr. Mariyam Shakeela represented the Republic of Maldives as the head of the delegation at the 5th Meeting of the council of the International Renewable Energy Agency (IRENA), held in Abu Dhabi.

The Minister, Dr. Mariyam Shakeela gave a presentation themed “IRENA as the Global Hub for renewable energy” in which she highlighted the importance of reducing unfavourable changes to the environment. In addition to this, she also stated that 35 percent of our GDP is spent on oil importation, of which, 80 percent is utilized for electricity generation alone and that this leads to the government spending a large amount of money on subsidies in an effort to make electricity more affordable, making the system collectively unsustainable. She

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The crack was first spotted by NASA in 2011. On Monday, the German Earth-observation satellite, TerraSAR-X, penetrated the Antarctic darkness with radar and confirmed that the break had spread across the whole 30-kilometre width of the ice shelf, calving a new iceberg into the Southern Ocean.

All eyes are on PIG because it is the longest and fastest-flowing glacier in Antarctica and it's at risk of collapse.

PIG drains about 10 per cent of the West Antarctic ice sheet. The ice flows from the sheet, along the glacier and melts, making PIG a significant contributor to rising sea levels. The thinning of the ice shelf makes PIG move, and melt, even faster and makes it more fragile.

"The crack and break itself isn't particularly unusual," says Adrian Jenkins of the British Antarctic Survey in Cambridge, UK. "What is more important is the continual thinning of the ice shelf, which has been, on average, a continuous process since Antarctic record keeping began."

Source: www.newscientist.com

Trade-Offs Between Food Security and Climate Change Mitigation Explored



(Credit: Copyright IIASA)

July 16, 2013 — Improving crop yields using sustainable methods could cut greenhouse gas emissions by as much as 12% per calorie produced according to a new study published in the journal *Environmental Research Letters*. At the same time, these changes could provide more food to people in need.

Agriculture and land use change contributed about 1/3 of total human greenhouse gas emissions in the past decade, through crop cultivation, animal production, and deforestation. By producing more food on less land, it may be possible to reduce these emissions, but this so-called intensification often involves increasing fertilizer use, which can lead to large emissions of nitrogen-containing gases that also contribute to global warming.

"The most efficient way to ensure sustainable intensification on the crop side is to rely on practices and technologies that are not more fertilizer-demanding, such as new varieties, improved rotations, integrated crop-livestock practices, and precision farming," says IIASA researcher Hugo Valin, who led the study.

The study's findings particularly apply to developing countries. In many cases farming in these countries is not as efficient as it could be, and so investing in better farming practices could lead to big benefits both in terms of food security and greenhouse gas emissions.

The study found that increasing livestock yields was more effective at reducing greenhouse gas emissions than increasing yields from crops that people eat. Overall, closing yield gaps by 50% for crops and 25% for livestock would lead to a 12% savings in greenhouse gas emission per calorie produced.

However, says Valin, "Increasing livestock yield is not as beneficial to food security as can be increase crop yield, just because meat and dairy are a small share of diets, especially in developing countries."

To conduct the study, Valin and colleagues explored scenarios using IIASA's GLOBIOM model. Scenarios are modeling tools for understanding the links between future policies, actions, costs, and outcomes -- in this case, scenarios allow researchers to look at future food production both from crops and livestock, greenhouse gas emissions, and the trade-offs and co-benefits of different pathways of crop yield improvement.

The new study also emphasizes the effects of increased food production on demand. All things being equal, more food availability leads to lower prices and therefore greater demand. That extra demand means that farmers will want to continue expanding, to produce even more food.

Source: www.sciencedaily.com

Sun's quiet spell not the start of a mini ice age

Those hoping that the sun could save us from climate change look set for disappointment. The recent lapse in solar activity is not the beginning of a decades-long absence of sunspots – a dip that might have cooled the climate. Instead, it represents a shorter, less pronounced downturn that happens every century or so.

Sunspots – dark patches that appear on the sun's surface due to intense magnetic fields – are the seat of solar activity and can affect Earth's climate in a number of ways, although the size of the effect is debated. They virtually disappeared between 1645 and 1715, a period now known as the Maunder minimum. Simultaneously, Northern Europe experienced the worst winters of the Little Ice Age, a period of exceptionally cold weather that began in the 16th century, leading some to suggest that a similar, prolonged sunspot minimum could offset global warming.

Sunspot numbers wax and wane in a natural cycle that lasts 11 years or so. The current cycle is meant to be at its peak now, but sunspots have been scarce since 2008, leading to speculation that we were about to enter another Maunder minimum.



New type of cycle

The latest comparisons between the ongoing maximum and historical data suggest this isn't so. "Cycle 24 [the present one] is different, but it is not an indication that we are going into a Maunder minimum," Giuliana DeToma of the High Altitude Observatory in Boulder, Colorado, told the American Astronomical Society's Solar Physics Division meeting in Bozeman, Montana, yesterday.

Instead, the sun's recent activity is more akin to a short series of weak cycles at the beginning of the 19th and 20th century. Unlike the decades-long break of the Maunder minimum, those reductions in sunspots lasted for just one or two cycles and were less dramatic.

In 1933, Wolfgang Gleissberg predicted that these minor dips should occur regularly, every century. The latest measurements seem to confirm them, throwing up a new facet of the sun's magnetic dynamo to investigate – the Gleissberg cycle.

"We're in a new age of solar physics," says David Hathaway of NASA's Marshall Space Flight Center in Huntsville, Alabama, who analysed the same data and came to the same conclusion. "We don't know why the Gleissberg cycle takes place but understanding it is now a focus."

Dud repeat

As for when the next Maunder minimum may happen, DeToma will not even hazard a guess. "We still do not know how or why the Maunder minimum started, so we cannot predict the next one."

Paul Charbonneau of the University of Montreal, Canada, who was not involved in the latest analysis, agrees with their conclusions. "Even though many people have claimed that we may be going into a grand minimum, nothing I have heard or read I found particularly convincing," he says.

According to the Gleissberg cycle, the next solar maximum – in about 2024 – will probably be a dud too, but then cycles will become more energetic once again, and any cooling effect the brief downturn has had on Earth's climate will also vanish.

Source: <http://www.newscientist.com>

Spotlight

Atoll Formation (Standard Theory)



The standard theory of atoll formation states that a volcanic island forms in deep tropical waters, giving coral polyps a foundation to grow on (above, top). In time, the volcano becomes dormant and the island begins to subside. Coral reefs, originally fringing the edges of the island, become a barrier reef outlining the contour of the original coastline (above, middle). After the original island slips entirely beneath the waves, all that is left is a coral atoll (above, bottom). (Images by Robert Simmon, NASA GSFC)

Frilled Shark



Photograph by Awashima Marine Park, Getty Images

Humans rarely encounter frilled sharks, which prefer to remain in the oceans' depths, up to 5,000 feet (1,500 meters) below the surface. Considered living fossils, frilled sharks bear many physical characteristics of ancestors who swam the seas in the time of the dinosaurs. This 5.3-foot (1.6-meter) specimen was found in shallow water in Japan in 2007 and transferred to a marine park. It died hours after being caught

Here's what several million years of evolution can do to you. Fossils show that the frilled shark has been around in one form or another for 150 million years, but it wasn't until the Cretaceous period some 95 million years ago that it developed its curious tricuspid teeth. These teeth have become extremely effective at capturing the various cephalopods on which the frilled shark feeds.

Source: national geographic

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