

Deep Dived Workshop - Gigatech Solutions for Gigaton Problems: Floating Solar

8 June 2018

6 ADB Avenue, Mandaluyong City 1550, Metro Manila,
Philippines

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Introduction



Floating solar PV is expected to grow rapidly due to certain key advantages, including avoided land-use competition through utilizing space on freshwater reservoirs, and providing complementarity with hydropower production in terms of hybrid operation and reducing evaporation.

With this, the Deep Dive Workshop, presented the concept of floating solar PV and the current state of the technology to ACEF attendees and worked to develop interest among the ADB staff and Asia-Pacific government officials to explore floating solar. The workshop also helped encourage partnerships between stakeholders to overcome technical and non-technical barriers.

Interesting topics such as the Prospects of Floating Solar Power Plant in Bangladesh, Floating Tidal Instream Energy, Deploying Floating Solar Key Factors for Decision Making Experiences from Singapore were discussed during the workshop.

89 participants, 29 speakers from 27 countries attended the 1 day workshop.

Annex 1: Programme

Time	Activity
09:00 – 09:10	WORKSHOP CHAIR: Cindy Tiangco, Senior Energy Specialist ADB
	Opening Remarks: Yongping Zhai, Chief of Energy Sector Group of ADB
09:10 – 09:45	<p>Session 1: The early days – historical development and technology testing</p> <p>Moderator: Cindy Tiangco, ADB Central & West Asia Energy Division Global Development through 2017, L. Pacudan, ADB CWRD Consultant Solar Energy Research Institute of Singapore (SERIS) testbed operations; Thomas Reindl, SERIS.</p>
09:45 – 10:45	<p>Session 2: Scaling up (part 1)</p> <p>Moderator: Central Asia ADB Regional TA -- Cindy Tiangco ADB CWRD 40 MW and larger plants in PRC -- Simon Li, Trina Solar Singapore's Floating Solar Program -- Atem Ramsundersingh, CEO, WEnergy Bangladesh's Outlook for Floating Solar – Rahamat Ullah Mohd. Dastagir, Additional Secretary, Planning and Renewable Energy, Power Division Ministry of Power, Energy and Mineral Resources of Bangladesh</p>
10:45 – 11:00	Coffee break
11:00 – 12:30	<p>Session 3: Scaling up (part 2)</p> <p>Moderator: Central Asia ADB Regional TA -- Cindy Tiangco ADB CWRD Bangladesh RE Development Project -- Hongwei Zhang, ADB SAEN Technology Development -- Ciel et Terre, Harold Meurisse Market prospects -- Frank Haugwitz, AECEA</p>
12:30 – 14:00	Lunch
14:00 – 15:30	<p>Session 4: Scaling up (part 3)</p> <p>Moderator: Akanksha Chaurey, IT Power Ltd. Global Perspective – K.K. Sharma, International Solar Alliance India's 10 GW Initiative - S.K. Mishra, Solar Energy Corporation of India Ltd. (SECI) India's program: engineering perspective – Ravi Rama, SJ Renewables Developer's Views from Europe and Asia -- Luc Leenknecht and Jerome Flament, Per Petum Smart Energy Solutions</p>
15:30 – 17:00	<p>Session 5: Anticipated future developments including marine applications</p> <p>Moderator: Dan Millison, Transcendery LLC Virtual pumped storage & combined cycle hydropower -- Sasank Goli, Ecogy Cleantech Floating Solar and Low-Cost Energy Storage for Developing and Threshold Countries -- Hans-Henning Judek, JE Access E-Kettuvallam Solar Houseboats – Itty Varugis, Team Sustain</p>
17:00 – 17:15	Summary and closing remarks

Annex 2: Participant List

Full Name	Agency/Ministry	Country	Type
Abhishek Adhikary	Nepal Electricity Authority	Nepal	Speaker
Abhishek Rathi	Power Grid	India	Delegate
Adelina Santos-Borja	Laguna Lake Development Authority	Philippines	Delegate
Agostinho Miguel Garcia	Sunbd- Sun Business Development	Portugal	Speaker
Akanksha Chaurey	It Power Pvt Ltd.	India	Speaker
Andre Duplessis	Schweitzer Engineering Laboratories	United States	Delegate
Andrea Jane T Urquiola	Department Of Energy	Philippines	Delegate
Angelica Delos Santos	Department Of Energy	Philippines	Delegate
Anjan Kumar Sinha	Ntpc Ltd	India	Speaker
Anurag Mishra	USAID	India	Delegate
Arie Prayudho Suwondho	Ministry Of Energy And Mineral Resources	Indonesia	Delegate
Arjun Guha	Irena	United Arab Emirates	Speaker
Asep Suwarna	USAID	Indonesia	Delegate
Atem S. Ramsundersingh	Wenergy Global Pte Ltd	Singapore	Speaker
Augustine Anthuvan	Channel Newsasia	Singapore	Delegate
Benjamin Lim	Zero Mass Water	Singapore	Delegate
Bern	Philippine Science Foundation In Rice Research And Industry	Philippines	Delegate
Bhupendra Shakya	University Of New South Wales	Australia	Speaker
Carl Ulrich	Ctc Global	United States	Delegate
Chaitanya Prakash Chudhary	Alternative Energy Promotion Center	Nepal	Delegate
Clare Richardson-Barlow	University Of Leeds	United Kingdom	Delegate
Daniel-Natanielu	Village Life Group	Samoa	Delegate
Dick Edwards	Ecodit Llc	United States	Delegate
Dr Ashvini Kumar	The Energy And Resources Institute	India	Speaker
Edmund Downie	Yunnan University	China	Delegate
Enrico Polla	Kopernik	Indonesia	Speaker
Farrukh Khalimov	Jsc Uzbekenergo	Uzbekistan	Delegate
Ferdinand G. Manegdeg	University Of The Philippines	Philippines	Delegate
Frank Zimmermann	Ilf Consulting Engineers (Asia)	Thailand	Delegate
Gabriele Sartori	Futurecarbon Australia	Australia	Delegate
Gary Jahn	U.S. Agency For International Development (Usaid)	Thailand	Delegate

Full Name	Agency/Ministry	Country	Type
Geoffrey Tan	Overseas Private Investment Corporation (Opic)	Thailand	Delegate
Gu-Yoon Chung	Enel Green Power	India	Speaker
Hans-Henning Judek	J.E. Access Ltd.	Japan	Speaker
Harold Meurisse	Ciel & Terre	Malaysia	Speaker
Ian Hutchison	Oceantera	United Kingdom	Delegate
Itamar Orlandi	Bloomberg New Energy Finance	Singapore	Speaker
Jason Hayman	Sustainable Marine Energy Ltd	United Kingdom	Delegate
Jayathunga Mudiyanseelage Athula	Sri Lanka Sustainable Energy Authority	Sri Lanka	Delegate
Jaybee	University Of San Carlos	Philippines	Delegate
Jayne Somers	Usaid	United States	Delegate
Jeevan Kumar Jethani	Ministry Of New And Renewable Energy	India	Speaker
Jiwan Kumar Mallik	Renewable Energy For Rural Livelihood (Rerl)	Nepal	Speaker
John Raymond Lumawag	Megawatt Solutions, Inc.	Philippines	Speaker
Jonathan	University Of San Carlos	Philippines	Delegate
Jonathan Xu	Trina Solar Co.,Ltd.	China	Delegate
Jorifa Khatun	Bangladesh Power Development Board	Bangladesh	Delegate
Jun Paul	Laguna Lake Development Authority	Philippines	Delegate
Karl Leung	Emerging Asia Capital Partners	Philippines	Delegate
Kembo Mida, Jr.	Chuuk Public Utility Corporation	Micronesia, Federated States Of	Delegate
Krishna Amancherla	Advisory Services - International Consultant	United States	Speaker
Krishna Nepal	Salleri Chialsa Electricity Co. Ltd.	Nepal	Speaker
Kushagra Nandan	Sunsource	India	Delegate
Kyaw Min Thu	Ministry Of Electricity And Energy	Myanmar	Delegate
Labuna Hewage Ranjith Sepala	Sri Lanka Sustainable Energy Authority	Sri Lanka	Delegate
Leandro Leviste	Solar Philippines	Philippines	Speaker
Lilita Pacudan	Adb	Philippines	Speaker
Luciano Hornay	National Direction, Renewable Energy	Timor-Leste	Delegate
Luis Del Rosario	Doosan	Philippines	Delegate
Luuk Rietvelt	Embassy Of The Kingdom Of The Netherlands	Philippines	Delegate
Madhurika Palatuwa	Sri Lanka Sustainable Energy Authority	Sri Lanka	Delegate

Full Name	Agency/Ministry	Country	Type
Marianne Eleanor Catanyag	Oceantera	Philippines	Delegate
Mark Anthony Frias	Conergy	Philippines	Delegate
Mark Errol Sarmiento	Meralco	Philippines	Delegate
Marlon	Clean Energy Investment Accelerator	Philippines	Delegate
Masoud Keyan	Tetra Tech	United States	Delegate
Md. Atiqur Rahman	Wind Resources Mapping Project	Bangladesh	Delegate
Md. Sakil Ibne Sayeed	Bangladesh Rural Electrification Board (Breb)	Bangladesh	Speaker
Md. Shafique Uddin	West Zone Power Distribution Company Ltd.	Bangladesh	Delegate
Md. Waliullah Mia	Economic Relations Division, Ministry Of Finance	Bangladesh	Delegate
Meherban Khan	Aga Khan Rural Support Program	Pakistan	Speaker
Menaka Rajaguru	Ministry Of National Policies And Economic Affairs	Sri Lanka	Speaker
Michael Hook	Sustainable Marine Energy	United Kingdom	Delegate
Mike Ashford	Chemonics	United States	Delegate
Min Lwin Thein	Electric Power Generation Enterprise	Myanmar	Delegate
Muhammed Ashraful Islam	Power Wing, Industry @ Energy Division	Bangladesh	Delegate
Nelson	Center For Renewable Energy And Appropriate Technologies/Ateneo De Davao University	Philippines	Delegate
Noah Kittner	Chulalongkorn University	Thailand	Delegate
Nor Azlyn Supingi	Sustainable Energy Association Of Singapore (Seas)	Singapore	Delegate
Noriaki Yamashita	Institute For Sustainable Energy Policies	Japan	Speaker
Om Prakash Battharai	Ministry Of Finance	Nepal	Delegate
Peter	Chongqing New Century Electrical Co., Ltd	China	Delegate
Peter Anthony Turingan	Senate Economic Planning Office	Philippines	Delegate
Quintin Pastrana	Wenergy Global	Philippines	Delegate
Rahamat Ullah Dastagir	Power Division, Ministry Of Power, Energy And Mineral Resources	Bangladesh	Delegate
Ralf Starzmann	Schottel Hydro Gmbh	Germany	Delegate
Raphael Dorilag	Oceanpixel	Philippines	Delegate
Raymond Rodrigo	Rodes Management Consultancy	Philippines	Delegate
Rene Tobias Meyer	Multi Consult Group	Philippines	Delegate
Full Name	Agency/Ministry	Country	Type
Rizka Sari	British Embassy Jakarta	Indonesia	Delegate
Roger Chua	Oceanpixel	Philippines	Delegate

Roselle Mae Colina	University Of San Carlos	Philippines	Delegate
Saima Qadir	Sustainable Energy For Pakistan Project	United States	Delegate
Sari Chandra	Usaid	Indonesia	Delegate
Sasank Goli	Ecogy Cleantech	Singapore	Speaker
Sebastian Petretschek	Tüv Rheinland	China	Delegate
Sherwynne Agub	Senate Of The Philippines	Philippines	Delegate
Sun Lian Hua	Goldwind International Holding (Hk) Limited	China	Delegate
Theodore Feierstein	Trina Solar	China	Delegate
Theresa Huschka	Conergy	Philippines	Delegate
Thomas Reindl	Solar Energy Research Institute Of Singapore (Seris)	Singapore	Speaker
Thuy Duong Tran	The Delegation Of The European Union To Viet Nam	Vietnam	Delegate
Tom Dreessen	Efficiency Valuation Organization (Evo)	Indonesia	Delegate
Tuong Do Duc	Usaid	Vietnam	Delegate
Ulukman Madanov	State Committe For Industry, Energy And Subsoil Use	Kyrgyzstan	Delegate
Viktoria Mozgacheva	Bishkekteplo Energo	Kyrgyzstan	Delegate
Vusal Mirzayev	The Ministry Of Finance	Azerbaijan	Delegate
Weslie Capute	Live Solutions	Philippines	Delegate
X Suliya	ADB	China	Delegate
Xie Qing	Chongqing New Century Electrical Co., Ltd	China	Delegate
Yanis Boudjouher	Reex Capital Asia	Singapore	Delegate
Yasushi Tanaka	The Energy Conservation Center, Japan	Japan	Speaker
Yoselvina Kune	Kopernik	Indonesia	Speaker
Yufeng Yang	ADB	China	Delegate
Yun Yang	GCF	Korea (South), Republic Of	Delegate
Zaman Huseynov	The Ministry Of Finance Of Azerbaijan Republic	Azerbaijan	Delegate
Zhyldyz Makeeva	State Committe For Industry, Energy And Subsoil Use	Kyrgyzstan	Delegate
Zuming Liu	Solar Energy Research Institute, Yunnan Normal University	China	Speaker