



Western Norway
University of
Applied Sciences



Norwegian Embassy



Norwegian innovation and investment
delegation to Sri Lanka

Presentation of participants

Empower New Energy

Terje Osmundsen, Investor/Financial Partner



EMPOWER
NEW ENERGY

Terje Osmundsen has a unique track-record in the pioneering of solar power development within emerging markets through the position of Senior Vice President for Business Development at Scatec Solar AS and the successful development and structuring of large-scale solar PV in South Africa, West Africa, Jordan and Egypt. He has extensive executive management experience from the Oil & Gas sector, is a seasoned board member and chairman of Caritas, Norway. He has a background from politics and government, including the Prime Minister's office. Empower New Energy is a Renewable Energy Finance company founded in 2017. The company brings equity capital including impact and climate finance to small and medium-scale power projects. Through our Accelerator vehicle, we invest in decentralized hydro, solar and wind projects that leads to verifiable CO2 reductions, job creation and community development. We focus on 1-10 MW projects in Sub-Saharan Africa, Asia and Latin-America with a long-term power sales agreement.



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Norsk Solar

Arvid Solheim, Project Consultant, Sri Lanka



NORSK
SOLAR

Norsk Solar is a subsidiary of the Norsk Vind Group, Norway's largest private wind power producer. The NV Group has a substantial track record with a combined capacity of more than 700 MW of renewable energy projects in operation and under construction. We are developing solar PV plants in many countries, on a Build-Own-Operate ("BOO") basis. We usually take ownership of the entire lifecycle of a project, from screening to financing and implementation. In Sri Lanka, we currently focus on becoming co-investors in a number of 1MW land-based PV plants and investment decision in Q3 2018. We promote our own concept of floating PV-plants and in agreement with the Sri Lanka Sustainable Energy Authority and the CEB we will build a 50kW floating PV-plant in Bandaragama. We aim for this to be the starting point for a string of floating PV-plants in Sri Lanka, built in conjunction with hydropower plants using Norsk Solar technology.



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Norsk Solar

Are Selstad, Director, Business Development



Are Selstad is co-founder and business development responsible at Norsk Solar, with special focus on Eastern Europe, Asia and Central America. He has an MSc. from Mannheim University. His professional activities focus on international projects, in particular the erection of foreign subsidiaries for Norwegian industry. Main reference areas are Central and South East Asia and Southern Africa. He has been active in Sri Lanka for two decades.



Norsk Solar is looking at Sri Lanka for a continued development of sustainable energy projects. Please see Arvid Solheims profile for a closer presentation of Norsk Solar and their Sri Lankan activities.

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REC Solar

Torgeir Ulset, Business Development Manager



Torgeir Ulset is a Chemical Engineer from the Norwegian Institute of Technology. He has been involved in product development and worldwide sales of Solar Grade Silicon and mono and multicrystalline wafers in Elkem Solar and REC Solar since 1997. He held the position of Sales Manager in Asia Pacific for REC Solar from late 2015 until October of 2017. REC is a leading vertically integrated solar energy company. Through integrated manufacturing from silicon to wafers, cells, high-quality panels and extending to solar solutions, REC provides the world with a reliable source of clean energy. Current yearly production capacity is 1.5 GW of modules made in Singapore with Norwegian feedstock - leading to one of the lowest carbon footprint of any module available in the market. REC is a Bluestar Elkem company with headquarters in Norway and operational headquarters in Singapore.



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Solbære AS

Simona Petroncini, Founder/CEO



Solbære AS, a Norwegian solar technology company based in Bergen on the West Coast of Norway. Solbære AS develops and delivers high quality photovoltaic - PV solutions to businesses and private. By collaborating closely with our Customers, we deliver and commission the right PV solution based on their needs, requirements and local conditions. We work closely with our local partners by sharing experience and implement best practice to provide high quality PV system. Solbære AS takes great pride in collaborating with local colleges and universities to encourage and learn students on the benefits and uses of solar energy.

The founder of Solbære AS, Simona Petroncini, has 20 years experience in energy, operational and services, together with a deep understanding and high competence in solar technology and green electricity market both in Norway and Internationally. Simona's background is engineering and MSc in Environmental Sustainability and Renewable Energy.



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SUN Elektroservice

Sivakumaran Sundaran, Senior Engineer - Statens vegvesen and CEO - SUN Elektroservice



Sundaran works at the Norwegian Public Roads Administration (Statens Vegvesen) as senior engineer, and is the CEO of SUN Elektroservice, a private entity in Bergen.

He has more than 20 years of experience in electrical installations in houses, industrial buildings, airports and oil platforms. He has also worked as head of technical staff for many years, and for the last 6 years he has been working with risk monitoring engineering, and follow-up of electrical installations in tunnels in Western Norway.



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Solpluss

Yngvar Sæterp, CEO



Yngvar Sæterp founded the solar energy company, Solpluss, in 2008 and is today both CEO and Chairman. Solpluss is one of the top installers of private photovoltaic systems and pushing forward on innovative solutions and systems for commercial buildings and buildings in the public sector. Solpluss has installed photovoltaic systems for several well-known companies such as Veidekke (Norway's largest construction company), Statsbygg (the Norwegian government's key advisor in construction and property affairs), Avinor (a wholly-owned state limited company under the Norwegian Ministry of Transport and Communications and is responsible for 45 state-owned airports), the Norwegian Public Roads Administration etc. Solpluss has also installed the largest wall-mounted CIGS-system in the Nordic countries. This is by many considered to be a beacon amongst buildings and how they can use solar energy solutions to evolve.



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Current Solar

Inge Vikesdal, CEO

Current Solar AS is a developer of floating PV solutions based in Kristiansand, Norway. The company is operating a sea based floating pilot installation in Singapore, in cooperation with REC Solar, and are currently exploring floating opportunities in Asia and Africa together with project developers and investors. The floating solution presented by Current Solar can be locally manufactured from readily available parts in most locations and thus provide an added local benefit in addition to the solar power generation resulting from the implementation of their system.

Inge Vikesdal has a MSc (Finance & Int.Banking) from Heriot-Watt university and held the position of VP Finance in REC Wafer division from 2002-2008.



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Gexcon AS

Sturle Harald Pedersen, CEO/President

Sturle Harald Pedersen is CEO of Gexcon, a world-leading company in the field of safety and risk management and advanced dispersion, explosion and fire modelling. Gexcon develops, maintains and uses FLACS – the leading CFD tool for dispersion, fire and explosion safety. A range of R&D activities at Gexcon addresses challenges related to the safe extraction, use and storage of energy from renewable sources. Research projects include Improving Hydrogen Safety for Energy Applications through pre-normative research on vented deflagrations (HySEA), 3D Risk Management for Hydrogen installations (Hy-3DRM), Safe Hydrogen Fuel Handling and Use for Efficient Implementation (SH2IFT), as well as initiatives on the use of fuel cell technology for maritime applications and low carbon emission vehicles – all providing knowledge to the safe use of hydrogen as a green energy carrier. Gexcon has also developed a FLACS module for simulating atmospheric flow and energy capture in wind turbines.

GEXCON



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GCE Subsea Maritime Association

Trond Strømgren, Senior Advisor Renewable
Energy and Hydrogen Value Chain

Trond Strømgren represents two clusters within the maritime and ocean based industries. He works with marine renewable energy, subsea solutions and hydrogen as storage for energy. Strømgren holds an MSc from the Department of Electric Power Engineering at the Norwegian University of Science and Technology.

GCE Subsea is an industry driven initiative for strengthening and internationalizing businesses, research and education. The organisation focus on crossover use of world leading subsea expertise to develop and strengthen technologies for exploitation of offshore wind, tidal and wave power.

Maritime Association Sogn & Fjordane is a professional association for companies operating in the ocean based industries. The organisation manages or collaborates in several projects aiming to build vessels with hydrogen propulsion and projects working to establishing hydrogen infrastructure.



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WindSim AS

Arne R. Gravdahl, CTO & Founder

Arne R. Gravdahl holds a Ph.D in Turbulence modelling from The Norwegian Institute of Technology in Trondheim. For more than 20 years he has been working within the area of Computational Fluid Dynamics, CFD. He is the founder of WindSim AS, where he today holds the position as CTO. WindSim AS is a software company developing the simulator WindSim used within the wind energy sector for optimizing the energy production from wind farms. Since 2013 he holds a part time position as associate professor within wind energy at the Norwegian University of Life Sciences.

windsim



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WindSim AS

Jay Jayasooriya , Country Manager - India

Jay Jayasurya is responsible for all aspects in developing and managing the business strategy for the Indian Market and other Asian countries. Focus is on WindSim activities in marketing the CFD technology to optimize wind turbine placement, Consultancy and Bankable Reports on Wind Resource Assessment, Micro Siting the Wind Farm design with pre construction assessment and also Post Construction Site Analysis. Jayasurya has a Post Graduate in Sociology & International Diploma in Wind Energy by LIFE Academy -Sweden & SIDA. He is executive Board Member of the Norway Business Association of India (NBAI).

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Greenstat

Tore Solheimslid, Green Energy Analyst

Greenstat AS develops and operates projects related to sustainable energy and technology, supporting the transition from fossil to renewable energy production and consumption. In our hydrogen focus area, we seek to produce and sell hydrogen for the transport sector, industry, maritime and for energy export. In the early phase, a significant portion of our work has been consulting relevant players on their potential usage and/or production of hydrogen.

GREENSTAT



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Prototech AS

Crina Silvia Ilea, Senior Researcher

Dr.Crina Silvia Ilea has studied at the Babes-Bolyai University (BBU), Romania and the University of Bergen, Norway. Her master and PhD work lead to developing a new modified sol-gel method for obtaining nanoparticles and filled in 3 patents. Since 2010 she has been working as a researcher scientist at Prototech AS and has been involved in different research projects focused on pyrolysis, gasification, fuel cells, electrolysis, renewable energies, energy storage, obtaining and characterization of nanoparticles and thin films and nanotechnology. Dr. Ilea focuses on developing and designing different hybrid concepts for offshore, maritime, fish farming and space applications, e.g. Green Fish Farm(GFF)[®]. She is also responsible for the Green Fish Farm[®] development at Prototech. She is also CEO of ProBio AS focusing on developing a light and compact container for handling the fish sludge to generate syngas and fertilizer.

cmr Prototech



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GK

Johannes Skorpen Dahl, Head of section for implementation, Bergen



- for et bedre miljø

Johannes Skorpen Dahl, 30 years old, and head of section for implementation in GK Bergen. Leading a group of project managers who do a wide arrays of tasks in ventilation, heating and cooling and automation

GK is Scandinavia's leading end-to-end technical facility manager and contractor. We work with all technical systems in all kinds of buildings, and have departments within project design, installation and service. Our team of more than 3000 employees in Norway, Sweden and Demark provides world-class projects and technical services to some of Europe's harshest environments. Out track record comprises large, complex installation projects, such as a new hospitals, museums, theatres, hotels and data centres.



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Optimosoftware

Shantha Ruban, Investor and CEO/Founder - Programus UK



Ruban is a serial entrepreneur with over 30 years' experience in Software research and development, the last 10 years of which has been spent in developing ground breaking software solutions for the "Sports & Leisure" and "Telecommunication" industries. He is inventor and co-owner of a European patent for 'Product Catalog Production' software system, which attracted a multi-million pound investment from Intel Corporation and 3I Venture Capital in 1999/2000.



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University of Agder

Alfred A. Christy, Professor of Chemistry



UNIVERSITY OF AGDER

Prof. Alfred A. Christy obtained a BSc in Chemistry from the University of Peradeniya, and MSc and PhD from the University of Bergen, Norway. He is a professor of Chemistry at the University of Agder, Norway. Professor Christy's research interests are in the field of analytical chemistry, specially within the field of infrared spectroscopy. He has applied techniques in infrared spectroscopy to characterize surface groups of materials used in different fields such as separation science, catalysis and green energy materials such as silica and titanium (IV) oxide. He is also interested in dye sensitized solar cell research.



Professor Christy has published over 120 papers in scientific journals and presented more than 110 lectures at conferences, institutions and industrial establishments. He has also authored several book chapters.

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Dhayalan Velauthapillai, Professor in Physics and Technology

Professor Dhayalan Velauthapillai is the coordinator of the clean energy seminar arranged and Head of the research group, Advanced Nano materials for Clean Energy and Health Applications (ANCEHA) at Western Norway University of Applied Sciences (HVL), Norway. Velauthapillai is Professor in Physics and Technology at HVL. He received his PhD degree from the University of Bergen (UiB) in the field of electromagnetic modeling. He is the coordinator of the NORPART and Norwegian Embassy projects in Sri Lanka. Professor Velauthapillai has versatile research activities in the field of physics and nanotechnology. The ANCEA research group focuses on mathematical modelling, computer simulation, synthesis, characterization of advanced nano materials with particular emphasis on third and fourth generation solar cells and fuel cells. They seek to develop low weight, flexible and low cost solar cell technologies based on metal oxides, dyes, polymers and perovskite materials.



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Øyvind Frette, Head of Department of Physics and Technology

Øyvind Frette is the Head of Department of Physics and Technology at the University of Bergen. He holds a PhD in the field of optics, and have in particular been involved in problems related to understanding propagation of solar light in the atmosphere-ocean system.

The University of Bergen have a strong focus on renewable energy, and have significant project activities in geothermal energy, wind energy, and solar energy. There is also a growing activity in related fields like new energy carriers and carbon storage and handling.

The University have study programs focusing on clean energy at bachelor-, master- and PhD level, and a growing number of students that follows these programs.



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Håkon Eidsvåg

PhD Research Fellow in the ANCEA group

Håkon Eidsvåg is a PhD Research Fellow in the ANCEA group. He has an MSc from UiB on experimental development of solar cells based on localised surface plasmon resonance in metal nanoparticles. For his Ph.D he is simulating nanomaterials for clean energy applications. The focus is on Quantum-mechanical modelling of Energy-Driven Water Splitting Materials and the goal is to find new nanomaterials that can increase the overall efficiency of hydrogen production through solar driven water splitting. The group is currently looking into doping TiO₂, but will in the future focus more on testing perovskites and new materials. Many of the relevant materials for solar driven water splitting will also be of interest for research on solar cells and absorbers. Over the next years, he will also assist our collaborators in Sri Lanka with developing their theoretical simulation lab.



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Participants from Western Norway University of Applied Sciences (HVL)

Berit Rokne, Rector

Berit Rokne is the first rector of the newly merged Western Norway University of Applied Sciences. She has a PhD in Nursing Science and extensive experience as head of educational institutions. She was appointed Pro-Rector and Vice-Rector for Education at UiB before becoming the rector of HVL.



Geir Anton Johansen, Dean, Faculty of Engineering and Science

Dean and professor in radiation physics/ measurement science with a PhD-degree on radiation detectors and imaging systems. Founding member of the International Society for Industrial Process Tomography and member of the Norwegian Academy of Technological Sciences.



Kristin Fanebust Hetland, Head, Department of Computing, Mathematics and Physics

Has a Ph.D in Experimental Nuclear Physics. Has conducted research on Grid computing and data analysis in conjunction with the ALICE experiment and is a member of the ALICE experiment team at CERN.



Elin Kvaale, Head, International Office, Campus Bergen

Head of the International Office, Campus Bergen, for the last 12 years. Institutional Erasmus+ coordinator and HVL's representative in several international networks.



Elin Hovda Hageberg, Adviser, Department of Communication

Adviser for the rector and is coordinator of media contacts at HVL. Helps academic staff with communication plans and contributes with editorial advice.



Maren Stallemo, Adviser, International Office

Adviser for externally funded projects for international educational cooperation. Is also involved in the administration of international agreements on master and PhD level and coordination of networks like Scholars at Risk.

