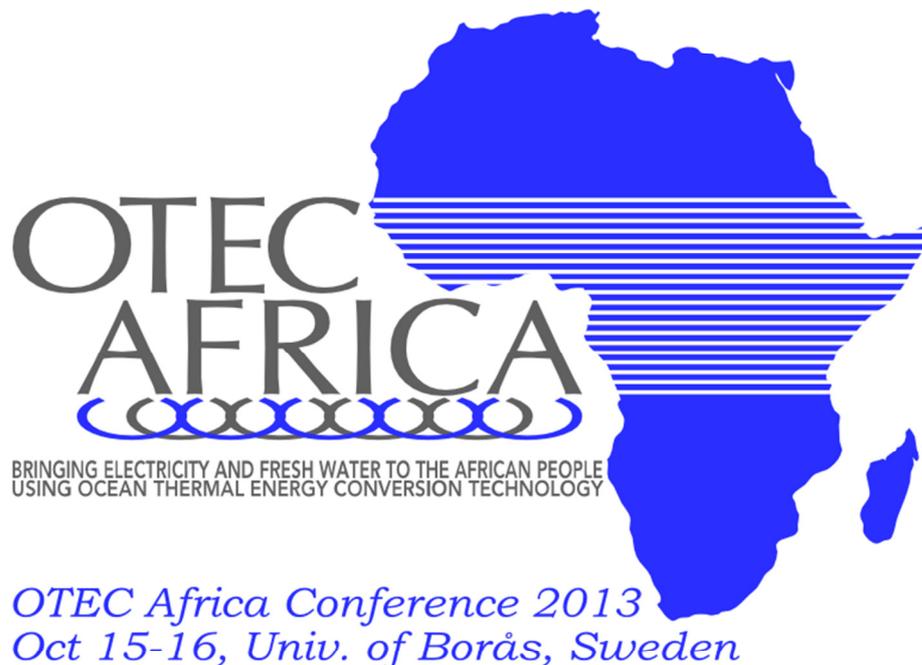


OTEC Africa Conference 2013

Conference Program



Conference Program

– Tuesday 15 October –

12.00-12.45 **Bistro Lunch at Hotel Scandic Plaza**

13.00-13.20 **The OTEC Africa Conference 2013 officially opens**

First theme : OTEC and opportunities for sustainable development

13.20-13.40 **Petter Dessne, M.Sc., M.A., OTEC Africa, Sweden**

Opening address: Setting the stage

Petter Dessne is the founder of OTEC Africa and works at the School of Business and IT, at the University of Borås.

Mr. Dessne is one of the organizers of the OTEC Africa 2013 conference.

13.40-14.00 **Björn Brorström, Ph.D., Vice-Chancellor, University of Borås, Sweden**

Welcoming address: A university for a sustainable future

Björn Brorström, a professor in economics, is the vice-chancellor of the University of Borås.

He has been instrumental in the university's recent move towards a sustainability profile, and welcomes proposals for joint research on sustainability.

14.00-14.30

Keynote speech: Ted Johnson, Ph.D., Executive Director and Head of OTEC Programs, Ocean Thermal Energy plc, USA

Keynote speech: OTEC in Africa and the Commercialization and Financing of OTEC

Dr. Johnson is Executive Director and Head of OTEC Programs, Ocean Thermal Energy (OTE) plc, where he is also an Executive Director of The Board of Directors. His history with OTEC and OTEC technology goes back 25 years and in 2009 he received the Ocean Energy Pioneer Award from the Ocean Energy Council for his achievements in OTEC.

Prior to joining OTEplc, he was at Lockheed Martin for 23 years, most recently being the Director of Alternative Energy Development at Lockheed Martin. He initially joined the Heritage Lockheed Corporation as Director of the Ocean Systems Division which originally built the Lockheed Mini OTEC System which was the world's first successful floating OTEC plant, off the Big Island of Hawaii.

14.30-14.50

Fika

14.50-15.00

OTEC – a demonstration

Dr. Lars Golmen (in charge)

15.00-15.20

Per-Anders Widell, Head of Section, The Swedish Government, Sweden

Swedish cleantech export and international aid; The Government's strategy for the development of the cleantech sector

The Swedish government will join the conference to present their view on cleantech export: Sweden is ranked as the world's third best country on cleantech production, and is the world's biggest contributor per capita to international aid.

The Swedish government aims (just like OTEC Africa) to combine these two good things, and has therefore allocated many million euros for cleantech export opportunities.

15.20-15.40

Gunnar Peters, CEO, or Pär Carlsson, Strategic Development Coordinator, Borås Energy and Environment, Sweden

Towards building sustainable and resilient cities – in Sweden and internationally

Borås Energy and Environment provides the city of Borås with district heating, district cooling, biogas, waste management, water and sewage treatment and energy and waste services. This municipally owned company also produces electricity in a combined heat and power plant and in hydro power stations.

The mission is to, through research, development, international collaboration, and education be the driving force in developing a sustainable city. By using a unique recycling model the company aims to convert the energy of the city's waste streams in to renewable valuables, and create a city free from fossil fuels.

15.40-16.00 **His excellency Dr. Joseph K. Sang, The Kenyan ambassador, Kenya**

Kenya – a nation of possibilities

Kenya is a suitable country for OTEC technology. The nation is rapidly becoming industrialized, and the infrastructure will highly benefit from fresh water and electricity.

The ambassador will present the infrastructure of Kenya and provide examples of how access to electricity and fresh water could benefit its future development as a sustainable nation.

16.00-16.20 **Fika**

16.20-16.40 **Lawrence F. Awosika, Director Marine Geology/Geophysics, Nigerian Institute for Oceanography and Marine Research, Nigeria (via link)**

Opportunities for a Viable Commercial OTEC Technology in Nigeria

Professor Larry Awosika is a marine geologist/geophysicist with the Nigerian Institute for Oceanography and Marine Research (NIOMR) Lagos. He is the Director and head of the Marine Geology/Geophysics Department of NIOMR. He holds a BSc in Geology from Howard University Washington DC., USA; MSc Geology with specialty in geophysics from George Washington University Washington DC., USA and PhD in Applied Geophysics from Obafemi Awolowo University Ile Ife. He currently chairs the UN Continental Shelf Commission.

His speech will focus on why OTEC is important or Nigeria, and also why Nigeria is excellent as a testbed for full-scale OTEC plants.

16.40-17.00 **Bengt-Olof Petersen, Director, Lighthouse Maritime Competence Centre, Sweden**

The Challenge to Meet the Zero Vision of Shipping

A Swedish approach to reach the Zero Vision of Shipping by 2050 using a multi-disciplinary research and collaboration effort combined with a unique demonstration platform for environmental technology. The Zero Vision envisages providing competitive transport solutions whilst avoiding accidents as well as harmful emissions for the sea and air.

17.00-17.10 **Short break**

17.10-17.30 **Rémi Gruet, Director, Ocean Energy Europe, Belgium (via link)**

The European Ocean Energy Association, OTEC, and the EU

Mr. Gruet, the newly appointed director of the EU-OEA, will provide an overview of the work of the association for enhancing the marine renewable energy and more particularly OTEC in front of the EU institutions. He will also briefly mention the study the EU-OEA is making on the worldwide developments of OTEC. Finally, he will present the perception of this sector in the European institutions.

2013 is a critical year in the European decision-making calendar. By the end of the year the spending priorities for the Commission and the European Investment Bank will be finalised for the next seven years. For the first time in 20 years, the Commission is actively considering taking a formal policy position to promote the commercialisation of the ocean energy sector. The association's challenge is to transform these opportunities into real benefits.

Rémi Gruet joined the association in September, after spending six years at EWEA as Senior Policy Advisor on energy, climate and environment issues. Before this, Gruet spent four years as a Policy Advisor to MEP Aubert in the European Parliament.

17.30-17.50 **Nazdaneh Yarahmadi, Senior Scientist, Ph.D. Polymer Technology, SP Technical Research Institute of Sweden, Sweden**

SP and WTC (Water Technology Centre)

Current research at SP, situated in Borås.

17.50-18.30 **Excursion: Textile Fashion Center**

18.30-20.00 **Conference buffet dinner, University of Borås**

End of conference day 1

– Wednesday 16 October –

Second theme: Advancements in research and current projects

09.00-09.30 **Luis A. Vega, Ph.D., Hawaii National Marine Renewable Energy Center, Hawaii Natural Energy Institute, School of Ocean and Earth Science and Technology, University of Hawaii at Manoa, Hawaii** ([via link](#))

Keynote speech: On OTEC technology advancements and OTEC plant economics

Luis Vega is currently the manager of the USDOE National Marine Renewable Energy Center at the University of Hawaii. He holds degrees in Applied Mathematics, Aerospace Engineering and Applied Ocean Sciences from the US Naval Academy, Caltech, and the University of California.

His professional experience ranges from analytical studies to laboratory scale and model basin tests as well as at-sea tests of marine renewable energy equipment. He lead the team that designed and tested an OTEC experimental plant demonstrating the producing of electricity and desalinated-water 24/7 and obtaining operational data required for estimating realistic costs of production. He has also worked in electrification of remote villages in South Pacific Island Nations utilizing solar and wind resources and establishing a Rural Energy Service Company in the nation of Fiji.

09.30-09.50 **Lars Golmen, Ph.D., Runde Environmental Center, Norway**

The Tropos Project

Lars Golmen is one of the founders of Runde Environmental Center in Norway. He has held numerous positions in sustainability and oceanography. He has served as a Division manager and later Research manager for oceanography at NIVA (Norwegian Institute for Water Research) as well as research scientist in physical oceanography.

His fields of interest cover renewable energies from the ocean, polar oceanography and ice formation, dynamics of deep lakes and fjords, and waves in the ocean. Major recent occupations include his post as technical secretary of EGOS (European Group on Ocean Stations) to coordinate the daily collection and dissemination of meteorological data from drifting buoys in the North Atlantic. Present project engagements include project manager at NIVA for the EU project CO2GEONET on safe sub-seabed storage of CO₂, work to establish oil spill contingency plans in Sri Lanka, and work to design new cooling infrastructure at the Mongstad oil refinery.

Mr. Golmen is one of the organizers of the OTEC Africa 2013 conference.

09.50-10.10

Linus Hammar, Ph.Lic., Department of Energy and Environment, Chalmers University, Sweden

OTEC – Suitable sites and challenges for the coastal environment

Linus Hammar is closely connected to the conference and is a supporter of exploring the possibilities of OTEC. He has spent a lot of time doing research in Tanzania, Mozambique, and other countries, looking for good sites for OTEC plants.

Mr Hammar wrote his licentiate thesis on OTEC in developing countries.

10.10-10.30

Fika

10.30-10.50

Hanna Sand Lindskog, Development manager Environmental issues City of Gothenburg, Sweden

Who's in power of hydropower? The access to electricity and participation in small scale hydropower projects in rural Tanzania and similar countries

Prior to her work for the City of Gothenburg, Hanna Sand Lindskog did her masters at the University of Gothenburg and travelled to Tanzania for the STEEP-RES project, a collaborated project with Chalmers University of Technology. In Tanzania she studied small scale hydropower projects from a social perspective.

In her presentation she will tell about her experiences and her findings from these trips. In addition, Hanna is a representative for Western Sweden, an ideal place for establishing ocean-gearred cleantech businesses.

10.50-11.10

Zahra Yadali Jamaloei, Vekalat Magazine/Shiraz University, Iran

OTEC Technology for Aiding Women in Developing Countries: An Investigation of Women's Health-Related Quality of Life in Rural Areas of Iran near the Coast of Persian Gulf and Gulf of Oman

Zahra Yadali Jamaloei is a member of the Editorial Board and is the Director of Public Relations of Vekalat Magazine in Tehran, Iran. She specializes in gender issues and developing countries.

She was previously at the Department of Sociology and Social Planning at Shiraz University in Iran.

11.10-11.20

Short break

11.20-11.40

Frederic Chino, Ocean Thermal Energy Conversion Sales & Marketing Manager, DCNS Ocean Energy Business Unit, France

The DCNS roadmap on OTEC

Frederic Chino is the OTEC Sales and Marketing Manager at DCNS Ocean Energy Business Unit. The DCNS group is a worldwide leader in the naval defence business. He graduated from a business school and Paris X University in France. After three years in business development for the defence industry and three more years as sales manager in consultancy activities, he joined the DCNS group in 2006. Mr. Chino always has been involved in business development functions among the group.

The DCNS group is currently involved in energy developments on tidal turbines, floating offshore wind, OTEC, and wave energy.

11.40-12.00

Harold Lever, M.Sc., Archimedes Solutions, The Netherlands

OTEC by SCHEG: Ocean Thermal Energy Conversion by a Subsea Cycle of Hydrofall Energy Generation, a new concept for medium scale OTEC

Harold Lever was born in 1958 and studied civil engineering at the Delft University of Technology. He was employed by Akzo (currently Akzo Nobel), the National Environmental Centre of the Netherlands (where he served as director) and Volker Wessels, one of the biggest contractors of the Netherlands.

Currently he is self-employed and has his main interest in the development of sustainable energy projects. He has been part-time working on his concept for OTEC since 2010.

12.00-12.50

Bistro lunch at Hotel Scandic Plaza

13.00-13.20

Pat Grandelli, M.Sc., P.E., Makai, Hawaii (via link)

A. OTEC Heat Exchangers: Designs currently being tested at Makai's OTEC Test Facility
B. Biochemical simulation for the environmental effects of the discharge water from a 100MW OTEC plant

Makai has been pioneering OTEC research since working on the first net-power producing plant in 1979. Since that time, Makai has been a sub- or prime contractor for dozens of unique research and development contracts in OTEC. Most recently, Makai has been involved with Lockheed Martin and others pursuing the development of 100MW OTEC plants for island communities like Hawaii and Guam.

Mr. Grandelli is a lead engineer in Makai's OTEC division as well as Makai's SWAC (sea water air conditioning) division. He has played a key role in the design of an OTEC technical and economic model, leading an Office of Naval Research project to consider the use of OTEC plants, and serving as a lead operator and data analyst for an OTEC design project for the Center of Excellence in Research for the Ocean Sciences (CEROS). He has also worked on design and/or construction observation for a 900-meter-deep seawater intake pipeline in French Polynesia, as well as pipelines in Hawaii, Los Angeles, Toronto, and New York state. Mr. Grandelli operated the 250 kW Open-Cycle OTEC plant during 1996. He is the new U.S. lead representative for OTEC to IEC Technical Committee 114.

13.20-13.40 **CB Panchal, Ph.D., Consultant, President at E3Tec Service, LLC, USA** (via link)

Production of fresh water using ocean thermal energy

CB Panchal is a chemical engineer who works as a consultant. Mr. Panchal does work for OTEC plc. among other companies.

His areas of expertise include: mitigation of fouling of heat transfer equipment (petroleum fouling and seawater fouling), energy efficiency (reactive distillation, heat integration, waste heat recovery and utilization), process intensification (reactive distillation, enhanced performance of heat transfer equipment), and OTEC (system design & integration, OTEC-optimized heat exchangers, economic analysis).

13.40-14.00 **Tim Hogan, Senior Fisheries Biologist, Alden Research Laboratory, USA** (via link)

OTEC Warm Water Intake Design and Potential Environmental Impacts

Mr. Hogan is a senior fisheries biologist at Alden Research Laboratory, Inc. He has 10 years of experience with various aspects of biological issues related to water intakes. Much of his work focuses on minimizing adverse environmental impacts (e.g., impingement and entrainment) associated with the operation of power plant cooling water intake structures, desalination facility intakes, hydroelectric projects, and marine renewable energy technologies.

Mr. Hogan conducts biological evaluations of fish protection technologies in both laboratory and field settings. Recent and on-going projects include: 1) development of a guidance document on fish protection alternatives for seawater desalination intakes; 2) field ichthyoplankton entrainment sampling at a proposed ocean thermal energy conversion (OTEC) facility in Kauai, and 3) a 3D acoustic telemetry study of fish behavior at a fish passage facility.

14.00-14.20 **Fika**

Third theme: The future of OTEC in a sustainable world

14.20-14.40 **Thomas Bjelkeman-Pettersson, Entrepreneur and Engineering Director at Akvo Foundation, Sweden, and Paul Dinnissen, OTEC Foundation, The Netherlands**

The prospects of OTEC; Bringing international development work online

Mr. Bjelkeman-Pettersson is the founder of OTEC Foundation and OTEC News. Mr. Paul Dinnissen is now in charge of OTEC Foundation. This talk will discuss the future of OTEC from an entrepreneur perspective.

In addition, Thomas will speak about his work at Akvo. Akvo is a project to transform the way development cooperation is organized across the world. The goal is to become the definitive, internet-based global transparency and collaborative platform for development aid. Headquartered in Amsterdam, Akvo is a non-profit foundation that works with more than a thousand organisations around the world.

14.40-15.00

Martin G. Brown, Consultant Naval Architect, GL Noble Denton, United Kingdom

Floating liquefied natural gas (FLNG) platforms as a stepping stone to OTEC

Martin G. Brown has been involved in OTEC for a long time. Among other things, he has been discussing the idea of "grazing OTEC", or OTEC facilities built on vessels, "grazing" the oceans.

In his speech, he proposes FLNG as a natural step towards making large-scale OTEC coming true. Among the big oil corporations, there is much talk about FLNG systems. However, cooling the natural gas to liquid form is energy-intensive. Using cold deep sea water would lower the costs, and at the same time pave the way fo OTEC facilities.

15.00-15.20

Ahmed Nii Nortey, National Chief Iman Public Relations Officer, ONCI, Ghana

A sustainable future for Ghana

Being the public relations officer at ONCI, Ahmed Nii Nortey communicates and coordinates all the organization's religious and social programs, projects and activities locally, nationally and internationally. He is also the founder and the executive director of the United Muslim Christian Forum in Ghana.

15.20-15.30

Short break

15.30-15.50

Vincenzo Palermo, Ph.D., National Research Council, Italy (via link)

Ongoing research for creating graphene-based composites for heat exchangers, to be used at sea, to replace copper and steel exchangers

Vincenzo Palermo is the leader of the research unit "Functional Organic Materials" of the National Research Council of Italy (CNR). He works on the research and production of new materials for optoelectronics and photovoltaics, using self-assembling molecules and graphene. He is also one of the initial proposers of the of the GRAPHENE FLAGSHIP European initiative.

In parallel to his scientific activity, Vincenzo Palermo is involved in science dissemination and communication, giving seminars for high-school students and public audience on the influence of scientific research on human history.

15.50-16.10	<p>Hyeon-Ju Kim, Ph.D., Principal Research Scientist, Head of the Deep Ocean Water Application Research Center, Korea Institute of Ocean Science and Technology, South Korea</p> <p>What is OTEC? Expansion of OTEC objectives</p> <p><i>Hyeon-Ju Kim has been the leader of Deep Ocean Water Application Research Center (DOWARC) at the Korea Institute of Ocean Science and Technology (KIOST) since 2005 as well as the project manager of the "Energy Utilization Technology (OTEC & SWAC) of Deep Ocean Water Resource" funded by the Korean Ministry of Oceans and Fisheries since 2010. It will complete in 2016 as 1st phase for pilot test, and continue to 2018 as 2nd phase for industrialization.</i></p> <p><i>He holds doctoral degree in Ocean Engineering from Pukyong National University, and is Ocean Engineering specialist licensed in Korea. His professional experience ranges from theoretical analysis to experimental evaluation of ocean water utilization systems for Food, Energy and Water in KIOST from 1995.</i></p>
16.10-16.30	<p>Short break</p>
16.30-16.50	<p>Sami Mutair, Ph.D., OTEC and desalination expert, Institute of Ocean Energy, Saga University, Japan</p> <p>Keynote speech: The future of OTEC</p> <p><i>Yasuyuki (Yasu) Ikegami is one of the world's most influential OTEC researchers. Sami Mutair is a specialist on OTEC and desalination using OTEC. The speech will focus on the future of OTEC, thus concluding the event in an interesting and inspiring manner.</i></p>
16.50-17.15	<p>OTEC's place in a sustainable world: Dessne, Johnson, Mutair, Hammar</p> <p>Conclusions, reflections; panel discussion</p>
17.15	<p>End of conference official program</p>
18.00	<p>Dinner for those still in town (not included in registration fee)</p>

– Thursday 17 October –

9.00-12.00

Excursion: Borås Energy and Environment