

Context

The International Vienna Energy and Climate Forum is a solutions platform to accelerate low-emission, climate-resilient development around the world. The Forum highlights the action-oriented steps required to achieve the Sustainable Development Goals by 2030, helping to forge an inclusive pathway that leaves no one behind. The solutions platform facilitates multi-sectoral, multi-stakeholder, and inter-disciplinary dialogue to advance sustainable energy development while promoting inclusiveness and the empowerment of women and youth engagement. The Forum is hosting in-depth solution sessions on the topics relevant to its five themes.

Driving the blue and green economy aspirations of São Tomé and Príncipe through Ocean Energy Thermal Energy Conversion (OTEC)

Date: Friday 3rd November 2023

Time: 1400 – 1500 CEST

Location: Forum, Hofburg Palace

Contact point name and email:

- Mr. Gabriel Maquengo, National Energy Director, São Tomé and Príncipe, gabrymakengo@gmail.com
- Mr. Dan Grech, Founder & CEO, Global OTEC, dan.grech@globalOTEC.co
- Dr. Al Binger, Secretary General, SIDS DOCK, abinger@sidsdock.org
- Mr. Martin Lugmayr, Industrial Development Expert, UNIDO, m.lugmayr@unido.org

Communication contact point name and email:

- Mr. Dan Grech, Founder & CEO, Global OTEC, dan.grech@globalOTEC.co
- Ms. Marinette Gaillon, UNIDO, m.gaillon@unido.org

Session description

The side event is being organised by Government of São Tomé and Príncipe, the Small Island Sustainable Energy and Climate Resilience Organisation (SIDS DOCK), the United Nations Industrial Development Organization (UNIDO) and Global OTEC under the umbrella of the Global Ocean Energy Alliance (GLOE), launched on the margins of the United Nations Ocean Conference in 2022 in Lisbon, Portugal.

The event will highlight the opportunities, which Ocean Thermal Energy Conversion (OTEC) offer for the green and blue economy aspirations of São Tomé and Príncipe, a small island developing state (SIDS) and least developed country (LDC) at the coast of Central Africa. The event will inform interested investors and financiers on the status of the 1.5 MW floating OTEC platform “Domonique” currently under development at the shore of São Tomé and the existing market potential for other projects in SIDS in Africa, Pacific, Indian Ocean and Caribbean.



The discussions will also tap on lessons learned, existing barriers for the full commercialisation of the technology, price trends, as well aspects of quality infrastructure, including social and environmental safeguards. The blue economy holds the most promising solutions for SIDS. OTEC and other ocean energy technologies offer sustainable and climate friendly energy generation with social and economic co-benefits, including food and water security, nutrition, as well as climate resilience. Baseload OTEC capacities can complement other intermediate renewable energy technologies, reduce imported fossil fuels, boost economic development, create jobs, and attract investments.

The Public Private Partnership between UNIDO, SIDS DOCK, the Government of STP and Global OTEC has proven to be a successful cooperation framework. Climate finance must play a key role in co-financing the first-of-a-kind scale OTEC system in the Global South, building the foundation for further replications. The current pipeline includes but is not limited to Belize, Fiji, Grenada, Seychelles and Tonga who have all expressed strong interest.

The event is a ‘call-to-action’ to venture capitalists and providers of concessional finance to invest in the full commercialisation of ocean energy technologies and OTEC in particular. It is intended by the partners to involve the Global Network of Regional Sustainable Energy Centres (GN-SEC) in the global replication efforts.

Session format

A 1-hour session with a moderator who will invite several speakers to make contributions. 5 will be present physically, 2 will dial in virtually.

Guiding questions

- 1. Why is STP and other SIDS pursuing OTEC? How the technology can contribute to the energy transition towards renewables and what is the comparative advantage?*
- 2. What evidence can be provided about the techno-economic feasibility and economic viability of OTEC today in comparison to diesel generation and other renewable energy technologies?*
- 3. What are the environmental and social risks, which should be considered with an OTEC deployment? What is needed to build a sound quality infrastructure around OTEC?*
- 4. How blue or green venture capital and concessional finance can be attracted for OTEC development? What exists and what is missing?*

Agenda

- **Opening of Session, Mr. Dan Grech, CEO, Global OTEC (3 min)** | 14:00 – 14:03 CEST
- **Global OTEC Video Presentation (3 min)** | 14:03 – 14:06 CEST

- **Keynote Address Hon. Minister Adelino Rosa Cardoso [4 min]** | 14:06 – 14:10 CEST
- **Moderator & Panellists Intro, Mr. Martin Lugmayr (3 min)** | 14:10 – 14:13 CEST
- **Discussion (3 minutes each – one ppt slide)** | 14:13 – 14:31 CEST
 - Speaker 1 - Mr. Gabriel Maquengo, National Energy Director , Sao Tome and Principe
 - Speaker 2 – Mr. Benjamin Martin, Secretary General @ Ocean Thermal Energy Association - VIRTUAL
 - Speaker 3 – Mr. Peter McCall, Investor, Global OTEC
 - Speaker 4 – Ms. Christine Neves Duncan, Chief Of Staff, Founder, SIDS DOCK & IWON
 - Speaker 5 – Mr. João Almeida, Development Environment Director, Aqualogos – VIRTUAL
 - Speaker 6 – Mr. Dan Grech, Founder & CEO, Global OTEC
- **Moderator Mr. Martin Lugmayr leads Q&A (20 min)** | 14:32 – 14:55 CEST
- **Conclusion (3 min)** | 14:56 – 15:00 CEST

Expected outcomes

The Side Event is intended to provide an overview and rationale for the establishment of a 1.5 MW commercial scale floating OTEC platform in São Tomé and Príncipe. A dynamic presentation of the project, technology and how it directly addresses an unmet requirement for affordable, clean, baseload power by SIDS will be provided by industry experts, alongside island policy makers. Evidence will be provided of the private sector's interest and capacity for funding the scale up across SIDS, addressing 10 GW of installed diesel capacity which must be replaced to realise SDG progress and achieve energy security. Specific event objectives include:

1. *Understanding of Sao Tome and Principe Energy Transition and Sustainability policy and how project "Dominique" achieves these policy goals. What are the financing gaps and roadblocks?*
2. *Strong awareness of OTEC technology and its applications for donor/multi-lateral fund community and its necessity to SIDS*
3. *Identification of new development partners and innovative finance sources for the project " Dominique".*

The organisation of the event was supported through the Green Climate Fund (GCF) and Global Environment Facility (GEF) funded project "Building institutional capacity for a renewable energy and energy efficiency investment programme for São Tomé and Príncipe".

Speakers and moderator

Mr. Dan Grech



Founder & CEO @ Global OTEC

In 2015, Dan worked in fashion marketing. While watching ice caps melt on TV, he felt compelled to tackle climate change. He quit his job and started Global OTEC in 2017, aiming to reduce island nations' fossil fuel use with OTEC. He's become a leading voice in ocean energy at UN events.

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Hon. Minister Adelino Rosa Cardoso



**Minister of Infrastructure, Natural Resources & Environment,
Democratic Republic of São Tomé and Príncipe**

Mr. Gabriel Maquengo



**National Energy Director, DGRNE/MIRNMA @ the Democratic
Republic of São Tomé and Príncipe**

Electrical Engineer, Master in Applied Mathematics, specialist in energy efficiency and renewable energy, works as Energy Director for the government of São Tomé and Príncipe and is responsible for coordinating UNIDO projects.

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Mr. Benjamin Martin



Secretary General @ Ocean Thermal Energy Association, Facility Manager @ Okinawa OTEC Facility / Xenesy Inc.

Benjamin is the founder and Secretary General of the Ocean Thermal Energy Association, focusing on OTEC, SWAC, and Deep Ocean Water Use. He manages the Okinawa Prefecture OTEC Demonstration Facility, offering educational experiences to visitors worldwide. His expertise in deep ocean water supports Kumejima Town's aim for 100% renewable energy.

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Mr. Peter McCall



Investor & Advisor @ Global OTEC

Experienced structured finance specialist with over a billion dollars' worth of debt issued over 3 decades of experience in the markets. Expertise encompasses capital funding, structured loans, asset lending, credit assessment, and securitizations. An early-stage investor in Global OTEC.

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Ms. Christine Fernanda Neves Duncan



Chief of Staff and Project Director @ SIDS DOCK, Founder @ IWON

Christine Neves Duncan is Chief of Staff and Project Director at SIDS DOCK, overseeing leadership support, program coordination, and overall management. She played a pivotal role in developing the SIDS DOCK organization in 2007 and in launching the Caribbean Centre for Renewable Energy and Energy Efficiency in 2015 as part of the UNIDO Global Network..

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Mr. Martin Lugmayr



Industrial Development Expert, UNIDO

Inspired by multilateralism and regional cooperation, Martin is spearheading the Global Network of Regional Sustainable Energy Centres (GN-SEC) program and is managing a portfolio of sustainable energy investment and innovation projects in SIDS and LDC. Before joining UNIDO in 2010, he coordinated the energy program of the Austrian Development Cooperation and was previously specialised on European integration issues. Martin obtains Master degrees on renewable energy technologies and political science.

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Mr. João Almeida



Development Environment Director @ Aqualogos

Experienced biologist/ecologist skilled in managing large-scale environmental impact assessments, particularly in hydro-agricultural, water transport, and hydropower projects. Expert in mitigating environmental impact on natural and cultural heritage. Over two decades of experience in ornithology, terrestrial and riverine ecology, and ecological monitoring, including São Tomé and Príncipe.

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