Healthy Oceans Resilient Islands

SIDS Capacity Development Aspects in the BBNJ process

Belgium 7-9 March 2017

Exhibitors
Blue Economy and Sustainability
7 March Brussels

Belgium
UN Security Council 2019-2020
Fostering Consensus
Acting for Peace

Foreword

The Small Islands Development States (SIDS) belong to the most hazard-prone and vulnerable areas in the world simultaneously harnessing highly unique marine biodiversity. Their overall low resilience makes the countries extremely vulnerable to high damage costs and losses of lives also associated to climate change. Key socio-environmental challenges they face, and will be confronted with even more in the future, are energy provision, potable water, flooding risk and biodiversity loss due to pollution

For the network reception taking place in the framework of the workshop 'Healthy Oceans, Resilient Islands' on Tuesday 7th of March 2017 in Brussels 17 exhibitors will showcase their technologies and/or activities offering solutions to address those challenges, hence highly relevant for SIDS countries.

The majority of the exhibitors consist of companies that GreenBridge, an incubator located nearby the Belgian North Sea provided with support of Ghent University.

Several companies focus on providing sustainable energy solutions for remote locations at a low cost that are easily deployable and require low maintenance. The energy sources used range between wave, solar, wind and hydro energy and waste heat conversion. A producer of offshore artificial reefs and a multinational focused on how to smartly combining coastal protection and blue economic development will exhibit their international projects as well.

Ghent University will present flood risk assessment tools and cutting edge low energy solutions for drinking water. Additionally, 5 NGO's will communicate in what aspects of marine conservation they are active in.

Large scale and/or high tech projects often require high investments and facing the financial risk is demanding for the SIDS. The world's

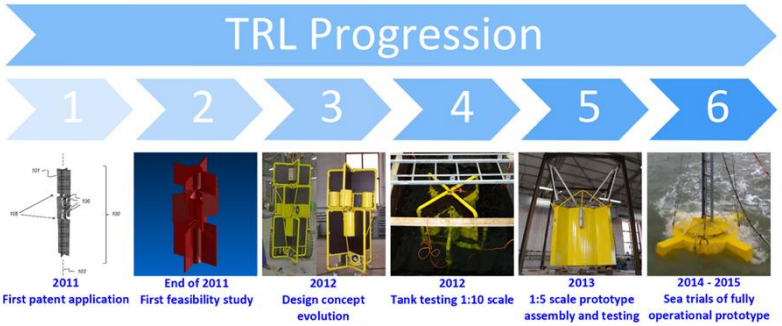
largest multilateral borrower and lender is ready to inform and guide the SIDS countries through their various options.

Last but not least a start-up will showcase fashion and sustainability can also go hand in hand as recycling marine waste to trendy sunglasses is their core business.

I. Companies

Laminaria is the first wave power technology to have a working strategy capable to manage even the most extreme conditions that occur in the oceans. Thanks to its unique storm protection strategy, the exploitation of high wave energy resources regions has become possible. By 2019 Laminaria wave energy will offer a commercially viable alternative base load electricity production, especially for islands or remote regions.

Laminaria has designed important innovations such as its energy exposure regulation, belt drive, anchor connecting system and simplified marine operations through inverted flotation means. All of these innovations have lead Laminaria to become first wave power developer who can provide electricity at competitive rates with high reliability and predictability.



Laminaria aims to install at least 50MW of its wave power devices by 2026. Initially Laminaria is deploying a single device at a full scale site in Scotland in 2018.

Laminaria has the ambition to be one of the main suppliers to achieve Europe's goal of installing 100GW of marine energy by 2050.

Website: http://www.laminaria.be

XANT is a Belgian mid-size "cyclone proof" wind turbine producer.XANT turbines are designed with rural-electrification applications in mind and a special focus on remote/harsh areas. Yes, also your island!

Its uniqueness consists off:

- A containerized transport: one turbine fits in one container, hence a low transport cost!
- The possibility to erect without a crane allows for easy (=low cost) installation in those far-off regions with limited infrastructure.
- The possibility to lower in case it's installed in a cyclone, typhoon or hurricane prone area.
- The possibility to go for a concrete-less foundation which besides reducing your civil work cost also allows you to remove it afterwards. Hence not pollute your island with concrete foundations.

The JEEP (Just-Enough-Essential-Parts) approach is of the essence to make sure turbines stay operational when deployed in remote sites. Our turbines only require ½ day of maintenance per year. The XANT wind turbines are ideally used as ***fuel saving devices*** in combination with a diesel genset or other renewable energy sources. XANT has today a 100kW wind turbine (class Ia or IIIa), in its class it is the quietest & has the highest yield! A 330kW is under development and will be on the market second half of 2018. XANT is

the ideal tool for rural electrification in off grid or poor grid location. So please feel free to contact us info@xant.eu.
Website: www.xant.be

Tiger Power's PURPOSE is to contribute to a better world by creating innovative solutions to bring clean energy to off- grid locations. Tiger Power's ambitions are fully aligned and contribute directly and indirectly to a number of the UN Sustainable Development Goals.

Tiger Power's VISION is to bring clean energy to remote locations using a "product" approach rather than a "project" approach. Tiger Power's core products are "building blocks", easy to install (plug-and-play, container-based) and easily combined with each other as well as with 3rd party storage or production devices. Therefore, they allow to bring scalable plug-and-play energy solutions to a wide range of different settings and applications, without requiring complicated upfront engineering nor high implementation and maintenance skills making Tiger Powers's solutions quick and easy to roll out and finance. We call this our "PowerCamp®" approach.

The current incumbent solution to provide energy to off grid locations is diesel gensets.
Tiger Power's MISSION is to eradicate a sizeable percentage of these polluting diesel gensets from the face of the Earth by replacing them with the equally reliable, easy-to-implement and more affordable Tiger Power clean energy solutions. One of its products includes the 'SunFold' a plug-and-play solar power system for remote application.

Website: http://www.tigerpower.eu

Subcon is a world-leader in the design and installation of Offshore Artificial Reefs.

With more than 10 major reef developments in Australia, the response from Government and Community has been extremely positive. Independent scientific studies show the Artificial Reefs are supporting a 300% increase of fish stocks (compared with neighboring natural reefs), and an overall net increase in the local fish population.

Subcon has recently completed testing of our Wave Attenuating Fringing Reef modules. These structures retain the fish habitat properties of our proven designs, incorporating them into a wave dampening design that protects the local shoreline from the erosion impacts of waves and storms. By mimicking nature, through the establishment of fringing reefs, we provide a natural method of shoreline erosion protection whilst maintaining all the normal littoral processes and creating new habitat.

Western Australian Fisheries Minster Honorable Joe Francis says 'We've found it only takes a couple of months for life to start forming on the artificial reefs, and they will be full of algae, seaweeds, corals and surrounded by a whole range of different fish within a couple of years'.

The implementation of fringing artificial reefs allows Governments to demonstrate real action in the preservation and restoration of their marine habitats and coastlines.

Website: http://www.subcon.com

Sea2see Eyewear is a start-up based in Barcelona, Spain which collects and recycle sea plastic waste and reconverts it into premium eyewear.

Thanks to its collaboration with fishing communities Sea2see collects 1 Ton of discarded fishnets, ropes, plastic every 3 days in 20 ports of Spain only.

Sea2see is a win-win-win: 1. A win for Ocean, as it preserves it from contamination and ghost fishing; 2. A win for the circular economy, proving trash is not trash until it is wasted, even in the luxurious fashion & eyewear industry; 3. A win for its customers, making each of them part of the Ocean cleaning process and ambassador of change.

Website: https://www.sea2see.org

Greenbridge is an incubator holding 50 offices and ateliers located in West-Flanders, the only Belgian province flanked by the sea. Linked to the vicinity of the sea, it was decided to focus all of GreenBridge's business pillars on blue growth, building on the extensive marine/maritime expertise and network of Ghent University, its largest shareholder. Simultaneously Ghent University decided to reinforce its involvement in GreenBridge enhancing the partnership. GreenBridge provides support for all the challenges young companies especially high-tech start-ups and/or spin-offs face. In the 'demonstrator', companies have the possibility of

permanently showcasing their latest technologies to the international visitors GreenBridge frequently welcomes. GreenBridge also houses a 20h science park of Ghent University where currently the Flanders Maritime Laboratory is under construction. Two major cutting-edge research infrastructures are being build, a towing tank and the coastal and ocean basin. The first allows experiments with ship models analyzing their behavior in shallow water. The second enables generating wave, currents and tides for research and tests on scale models for the offshore industry and coastal engineering.

Through its combined network with Ghent University GreenBridge pulled together the portfolio of the companies for the exhibition and acted as a coordinator.

Website: www.greenbridge.be

TURBULENT
Decentralized hydropower, inspired by nature

Turbulent develops reliable micro-hydro power plants to deliver clean energy to even the most remote communities. By mimicking nature, our plants do not harm local ecosystem. With each vortex turbine delivering 3-100kW, Turbulent hydroelectric plants operate at a high efficiency on water streams with a low height difference.

Our turbines can operate standalone or interconnected to form a fine-grained grid of power plants offering the same amount of energy provided by large power plants with no ecological impact, a higher resilience and much shorter payback times. Studies have proven that the worldwide hydropower available is 4 times the current electricity consumption.

Website: http://turbulent.be

DEME is a global offshore solutions provider, tackling major societal challenges such as climate change and sea level rising in a responsible and integrated manner.

DEME has a strategy to protect vulnerable coast lines, islands and atolls against sea level rising in combination with blue economic development. Necessary protective coastal infrastructures are designed and built in a way they also serve as platforms for aquaculture, renewable energy generation, biotechnology, tourism & recreation, desalination, etc. This blue economic development leads to the creation of local employment and generates cash flows that will, amongst others, pay back for the investments in coastal protection infrastructure.

This DEME strategy is also turned into reality via projects such as Aquavalue (design of a roadmap for Aquaculture in Flanders, Belgium), Coastbusters (ecosystem-based coastal defense), Edulis (aquaculture in offshore wind farms) and The Blue Cluster. In The Blue Cluster, DEME is a principal partner in a group of companies that have developed a global, integrated vision on an affordable, responsible and resilient coastal protection through development of blue growth scenarios.

DEME strongly believes and proves that threats can be turned into opportunities for all!

Website: http://www.deme-group.com

Today's society is based on fossil fuel. Due to limited resources, environmental concerns and volatile prices, new objectives came into the picture. Improvement of current technologies but also renewable energy sources and sustainable energy production are the keystones for energy management. The (Organic Rankine Cycle) ORC-technology approaches these ideas in multiple ways: the reuse of waste heat to produce electricity, emission-free, with a cost-effective result making it financially and ecologically beneficial.

E-RATIONAL, a division of BEP Europe based in Bruges, is the first Belgian enterprise to provide the world with a compact solution for converting waste heat into green sustainable energy. E-RATIONAL's mission is to provide sustainable energy solutions based on common sense: No Heat to Waste! E-RATIONAL stands for a rational, logical approach of sustainable energy production... creating green electricity out of low temperature waste heat ... Reliable ORC (Organic Rankine Cycle) solutions with attractive pay-backs!

A modular and scalable design makes almost any kind of waste heat suitable for cheap green energy production. The main focus for E-RATIONAL, during design phase of the machine, has been on a maximized uptime and efficiency at a minimized operational and maintenance cost, resulting in a skid mounted, modular, CE compliant machine with plug-and-play connections for convenient installation. The synergy between state-of-the-art technology and traditional, standard components makes the E-RATIONAL ORC machines to what they are today: user-friendly, robust and economically viable installations. Consistent reasoning combined with proven facts has led to our product range.

Website: http://www.e-rational.net

II. Academia

Ghent University is a public university located in Ghent, Belgium. It was established in 1817 and in 1930, it became the first Dutch-speaking university in Belgium. It is one of the largest Flemish universities, consisting of 41,000 students and 9,000 staff members. Ghent University is strongly committed to tackling socio-economic challenges, at this event two research groups showcase projects/research in domains relevant for the SIDS.

Website: http://www.ugent.be

1. Cartography & GIS (CartoGIS)

CartoGIS is part of the Faculty of Sciences of Ghent University. On the interface between exact and social sciences, CartoGIS focusses its research and education on spatial patterns at the earth surface and the dynamic interaction between environment and society. One of its research lines are new flood risk assessment tools. Focusing on minimizing the damage costs and losses of lives by protecting residential areas and creating flood plains and water storage basins elsewhere has shown effective in flood management. In this process, a flood risk assessment that indicates the areas with the highest risk of damage is indispensable. In Flanders, Belgium, the flood risk tool LATIS is used for more than a decade, maps are generated by combining flood maps with different return periods, depth damage functions, land use and land cover, population density and replacement values for all elements at risk. This methodology is used as the base for a new flood risk assessment tool for the SIDS. A first damage assessment was carried out for a case study in Annotto Bay, Jamaica. This method will now be implemented in other case study areas in order to create a generic tool, applicable in all SIDS.

Due to enhanced insights and the improvement in server performance and computing power, the idea subsequently expanded to create a new impact assessment tool, called FLIAT (FLood Impact Assessment Tool). FLIAT can handle multiple datasets, which are linked to well-defined elements (for example the detailed characterization of sluices and gates, which part of a city is linked to a specific energy infrastructure, the location of doors and windows in a buildings, etc.). The FLIAT methodology embed a vulnerability assessment study that rates the existence of a latent probability where a society could collapse. This way roads that are used to evacuate inhabitants will have a higher score of importance. Together with the socio-economic impact assessment this FLIAT methodology concludes with a priority map. This priority map provides guidelines of how a society needs to adapt to future climate change.

Website: http://geoweb.ugent.be/cartogis-en

2. Particle and Interfacial Technology Group (PaInT)

The Particle and Interfacial Technology Group (PaInT) is a research group within the Faculty of Bioscience Engineering at Ghent University, which focuses on characterization and practical applications of particles and interfacial phenomena and technology.

Website: http://www.ugent.be/bw/tafc/en/research-groups/paint

SATURN (Solar-Assisted Treatment of Urine with Recovery of Nutrients) is aimed at recovery fertilizers and high quality potable water from human urine using as little energy and resources as possible (aimed at running solely on solar energy or waste heat). The technique entails a community-based toilet system (including the treatment system) that allows communities with little access to external resources to reach improved sanitation, a reliable source of drinking water and fertilizers

for local agriculture. To achieve this, SATURN uses the latest advancements in membrane technology and physicochemical treatment developed with the expertise of the Particle and Interfacial Technology Group at Ghent University. This technology is aimed to be spun out of Ghent University under the spin-off company SATURN by the end of 2017.

REvivED The balance between drinking water demand and water availability has reached a critical level in many regions of the world. Factors such as climate change are causing more frequent and severe droughts which exacerbate these adverse conditions. With seawater making up 97.5% of the world's water resources, low energy desalination solutions will be a crucial part of providing sufficient levels of good quality drinking water for a growing world population. REvivED water, a new research and innovation project funded under the EU's Horizon 2020 programme in the field of 'low-energy solutions for drinking water', brings together ten partners from six countries across Europe that will contribute to overcoming the drinking water challenge by establishing electrodialysis (ED) as the new standard for desalination.

III. NGO's & Finance

The High Seas Alliance (HSA) is a partnership of organizations and groups aimed at building a strong common voice and constituency for the conservation of the high seas. HSA is currently made up of 34 NGOs plus the International Union for the Conservation of Nature (IUCN). The objective of HSA is to facilitate international cooperation to establish high seas protected areas and to strengthen high seas governance.

At the Rio+20 Summit in June 2012, governments committed to "address, on an urgent basis, the issue of the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction including by taking a decision on the development of an international instrument under UNCLOS" (para. 162, The Future We Want). Since then, the High Seas Alliance, on behalf of its member organizations, has advocated for a new international legally binding treaty under the UN Convention on the Law of the Seas (UNCLOS) to protect marine biological diversity in the high seas and seabed.

The high seas, which is the ocean beyond any country's exclusive economic zone (EEZ) – amounting to 64% of the ocean – and the ocean seabed, make up nearly one-half of the Earth's surface and include some of the most environmentally important, critically threatened and least-protected ecosystems on the planet. Only a legally binding international instrument would address the inadequate, highly fragmented and poorly implemented legal and institutional framework that is currently failing to protect the high seas – and therefore the entire global ocean – from the multiple threats it faces in the 21st century.

Website: www.highseasalliance.org

World Animal Protection is a global organisation working to protect animals by collaborating with governments, corporates, individuals, communities and other organisations. We believe that a sustainable future for the planet can only be achieved if both animals and people are part of the solution.

In 2015, World Animal Protection launched the **Global Ghost Gear** Initiative, a cross-sectoral alliance committed to driving solutions to the problem of lost and abandoned fishing gear worldwide. It aims to improve the health of marine ecosystems, protect marine animals, and safeguard human health and livelihoods.

The Global Ghost Gear Initiative works to build evidence and gather data to create a global picture of the problem; to define best practice guidelines of how to deal with fishing gear; and to create solutions which can be scaled and replicated across the globe. Our strength lies in the diversity of our participants including the fishing industry, the private sector, academia, governments, intergovernmental and non-governmental organisations. The GGGI's engagement with the UN Sustainable Development Goals and involvement in on the ground solutions means that we are mitigating the risk posed by ghost gear locally, regionally and globally. We believe that together we can drive economically viable, sustainable solutions towards safer, cleaner oceans.

Website: www.ghostgear.org and at www.worldanimalprotection.org

Global Ocean Trust is a network of conservation experts. The aim of Global Ocean Trust is to bring new technologies, partnerships and sources of finance together for innovative solutions to conserve and sustain the ocean. As a member of the High Seas Alliance, the Deep Sea Conservation Coalition, the MPA Action Agenda and the Ocean-Climate Platform we support efforts to improve ocean governance. Torsten Thiele, Founder of Global Ocean Trust and Visiting Fellow, LSE Institute of Global Affairs, is an experienced financier and has participated in the BBNJ Prepcom process as IUCN observer, with particular focus on technology transfer and financing issues.

Website: http://globaloceantrust.com/en/

WWF engages with international instruments – such as conventions, commissions, agreements and treaties – for strong international laws and policies that ensure the sustainable management, equitable use, and adequate protection of biodiversity and natural resources globally.

In order to achieve this mission, WWF broadly focuses its efforts on two broad areas:

* Biodiversity - to ensure that the earth web of life stays healthy and vibrant for generations to come.
* Footprint - reducing the negative impacts of human activity - our ecological footprint - and that the use of natural resources required for life are managed sustainably and equitably.

With respect to the marine environment, WWF recognises that all life on Earth depends on a healthy ocean. Billions of us rely on it for food, livelihoods and many other services. A healthy ocean means healthy people, food security, regional stability and a flourishing 'blue

economy'.

Irresponsible practices are pushing our ocean systems to the point of collapse. Improved governance and management can help reverse this decline and restore ocean health.

In pursuing these goals, WWF has been involved in the BBNJ process since its inception in the form of the the UNGA Open-ended ad hoc working group, and continues to actively engage at the PrepCom stages. WWF believes that the negotiation of a new UNCLOS implementing agreement on conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction provides a unique opportunity to strengthen oceans governance. This could be achieved through the operationalization of the ecosystem approach and ensuring that the fair and equitable vision enshrined in UNCLOS (and its evolutionary interpretation) is achieved for the benefit of present and future generations.

Website:
http://wwf.panda.org/what_we_do/how_we_work/our_global_goals/oceans/

THE PEW CHARITABLE TRUSTS

The Pew Charitable Trusts is driven by the power of knowledge to solve today's most challenging problems. Pew applies a rigorous, analytical approach to improve public policy, inform the public and invigorate civic life.
Website: http://www.pewtrusts.org/en

The European Investment Bank (EIB) is the EU's bank and the world's largest multilateral borrower and lender, with a total financing of EUR 84bn in 2016 only.
The EIB is based in Luxembourg and has a staff of 3,300. Although 90% of its business is in the EU, the EIB has activities on all continents and a network of external offices in over 40 countries.

As regards small islands, since 2003 the EIB has lent over EUR 1bn for 50 projects in 20 such territories, some of which being EU ultra-peripheral regions, the other independent states.
The EIB has committed to earmark at least 25% of its activities to Climate Action.

Website: http://eib.org

United Nations
Educational, Scientific and
Cultural Organization

Intergovernmental
Oceanographic
Commission

KINGDOM OF BELGIUM
Foreign Affairs,
Foreign Trade and
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HEALTH, FOOD CHAIN SAFETY
AND ENVIRONMENT