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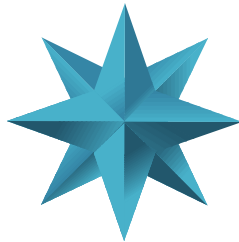
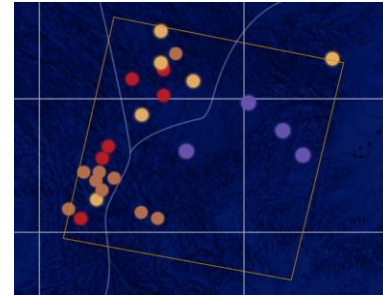
The Business of the Oceans

MARES Webinar Series: 23rd April 2021

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Agenda

- Introduction
- Baseline:
 - Oceans in crisis?
 - A capital opportunity
 - Sustainable Blue Economies
 - Sustainable finance
 - Sustainable business models
- From Sea Blindness to Sea Vision
 - From space
 - From the air
 - On the sea surface
 - Under the water
- The future is here...



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Oceans in crisis?



Overfishing drains oceans of its life

By Kim Pham Apr 12, 2021 0



(Rebecca Mena / Daily Titan)

The fishing industry has brought a human-made disaster that is projected to drain our oceans of life in less than 30 years if nothing is done to stop them.

The urgency of protecting our oceans from the fishing industry cannot be stressed enough. To understand the severity of this industry's impact on marine life, we must first be educated on how the ocean's ecosystems are affected by current global fishing practices.

Article | [Open Access](#) | Published: 29 October 2019

New elevation data triple estimates of global vulnerability to sea-level rise and coastal flooding

Scott A. Kulp & Benjamin H. Strauss

Nature Communications 10, Article number: 4844 (2019) | [Cite this article](#)

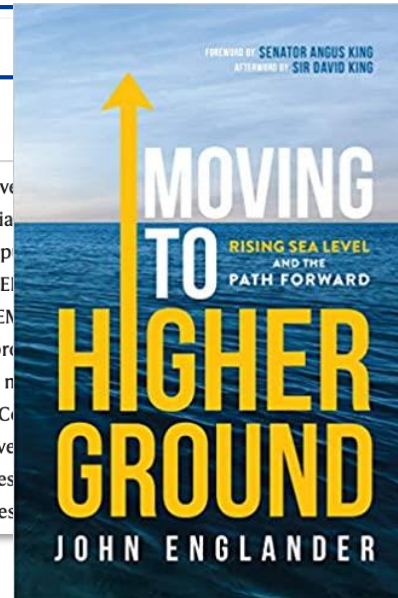
513k Accesses | 107 Citations | 6739 Altmetric | [Metrics](#)

[An Author Correction](#) to this article was published on 12 December 2019

[This article has been updated](#)

Abstract

Most estimates of global mean sea-level rise are comparable to the positive vertical bias in the 1990s used to assess global and national populations. CoastalDEM is a new DEM derived from satellite altimetry and coastal elevation data. Here we show – employing CoastalDEM – that coastal populations currently occupy global land below projected sea-level rise, up from 110 M today, for a range of sea-level rise values. Under high emissions, 1.4 Gt CO₂ per year, land below projected annual flood level rises from 110 M to 250 M by 2100, versus roughly 250 M at present. We estimate that 10 m above current high tide lines

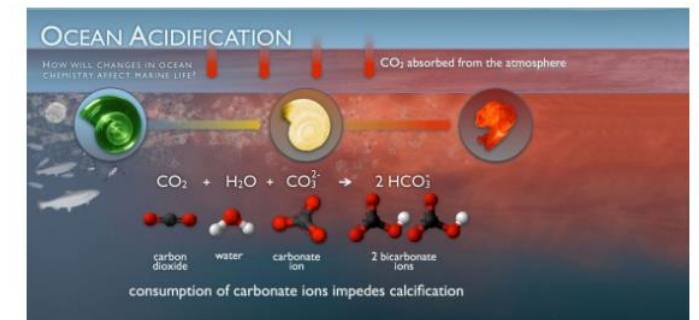


Ocean acidification

Education | [ocean acidification](#) | [education](#)

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In the 200-plus years since the industrial revolution began, the concentration of **carbon dioxide (CO₂)** in the atmosphere has increased due to human actions. During this time, the pH of surface ocean waters has fallen by 0.1 pH units. This might not sound like much, but the pH scale is logarithmic, so this change represents approximately a 30 percent increase in acidity.



A capital opportunity



The Ocean As Natural Capital



World Ocean Observatory [Follow](#)
Jan 16 · 4 min read



Suddenly, we have the capacity to see beyond the horizon and understand the full integration of traditional capital and natural capital, just as we now understand an integrated economy, across the sea that connects all things.



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Natural capital: the race to put a price on the world's oceans

To a significant number of the world's businesses, the oceans are vital assets that receive no capital maintenance. Economists are trying to change that.

BY [MARINA LEIVA, INVESTMENT MONITOR](#)
Part of New Statesman Media Group



GETTY IMAGES / AFP

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HIGH LEVEL PANEL for
A SUSTAINABLE
OCEAN ECONOMY

BLUE PAPER

National Accounting for the Ocean and Ocean Economy

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oceanpanel.org

Sustainable Blue Economies



The Blue Economy Is More Than Resources: It Has To Focus on Social Equity and Governance

The future of an equitable and sustainable global ocean, or "Blue Economy," depends on more than the resources available for technological advancement and industry expansion. A recent study led by the University of British Columbia found that socioeconomic and governance conditions such as national stability, corruption, and human rights greatly affect the ability to achieve a Blue Economy.

April 13, 2021 By ECO Magazine
HSE Now



April 12, 2021

What Canada's Blue Economy means to fishers and seafood farmers

Twitter

New video series to highlight the benefits of the Blue Economy features 10 Canadian voices from the seafood industry

By SeaWestNews

The Fisheries Council of Canada and the Canadian Aquaculture Industry Alliance have created a **video series** to highlight the benefits of the Blue Economy featuring 10 Canadian voices from the seafood industry.

PM eyes blue economy, says Coast Guard to be strengthened

The PM asked the Bangladesh Coast Guard members to discharge their responsibilities with patriotism, honesty and faith



Prime Minister Sheikh Hasina. Photo: PMO

FM Qureshi: Pakistan agree to cooperate with friendly nations to promote blue economy

"We are ready to cooperate and collaborate with other friendly nations and partners around the world, to realize this goal for mutual benefit of the entire humanity," FM Qureshi said.

By News Desk | 15 February 2021



Foreign Minister Shah Mahmood Qureshi on Monday said recognizing the importance of world's oceans as global public commodity, Pakistan was committed to promote the prudent use of marine resources for socio-economic development, while ensuring environmental sustainability.

Definitions

Sectoral alignment

Strategies / policies

Bi-laterals

Regenerative Finance



Why the Market for 'Blue Carbon' Credits May Be Poised to Take Off

Seagrasses, mangrove forests, and coastal wetlands store vast amounts of carbon, and their preservation and restoration hold great potential to bank CO₂ and keep it out of the atmosphere. But can the blue carbon market avoid the pitfalls that have plagued land-based programs?

Blue Bonds: An Audacious Plan to Save the World's Ocean

TNC's Blue Bonds for Conservation model helps governments unlock funding for conservation—and could benefit millions of people in coastal regions.

Last updated March 04, 2021

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KEY TAKEAWAYS

- Smarter decisions about how we use and invest in nature for marine conservation and climate change adaptation will make a profound difference for the more than 2 billion people living in coastal regions.
- Blue Bonds for Ocean Conservation is one of TNC's newest innovative solutions, supporting island and coastal nations to refinance their national debt and create long-term sustainable financing for marine protections, sustainable economic development and climate change.
- In doing so, TNC is leveraging upfront philanthropy to catalyze as much as 40 times more in additional investments for nature and people, improving more than 4 million square kilometers of ocean over the next five years—helping governments unlock funds to deliver on their conservation goals and ultimately support the well-being of their communities.

Carbon credits /
Blue Bonds

Global Blue Ocean Fund - The first-of-its-kind Canadian Blue Economy investment concept

NEWS PROVIDED BY
[Global Blue Ocean Fund Company](#) →
Apr 13, 2021, 06:45 ET

SHARE THIS ARTICLE

TORONTO, April 13, 2021 /CNW/ - The [Global Blue Ocean Fund Company](#) (the "GBOFC") is pleased to introduce the Global Blue Ocean Fund investment concept (the "GBOF"). GBOF identifies exchange-listed corporations, on a global scale, that are actively promoting and engaged in preserving our oceans. Corporations selected for inclusion in the GBOF index must meet specific requirements as outlined in the Global Blue Ocean Fund brochure.

Currently, GBOF is strictly an investment concept. GBOFC will be approaching selected financial institutions in Canada that may be interested in adopting this innovative concept to make it available for purchase to the public, either as a Mutual Fund or Exchange-traded Fund.

Government
investment

Clean oceans and the blue economy OVERVIEW 2021

According to OECD projections, by 2030, the "blue economy" (defined as all economic sectors that have a direct or indirect link to the oceans, such as marine energy, coastal tourism and marine biotechnology) could outperform the growth of the global economy as a whole, both in terms of value added and employment. However, a wide range of human activities – from burning fossil fuels to overfishing – have been degrading the oceans for years. By increasing the absorption of carbon dioxide, global warming is acidifying the oceans and reducing oxygen levels, harming or killing marine plants, animals and other organisms. And as the ice caps melt, rising sea levels are increasingly putting hundreds of millions of people in coastal areas at risk.

In addition, an estimated 8 million tonnes of plastic waste and 1.5 million tonnes of microplastics enter the oceans every year. This threatens marine ecosystems and the communities relying on the seas for their livelihoods. Much of the plastic in the oceans comes from waste discharged on land or into rivers by the 2 billion people living without access to waste collection services. Fast population growth and rapid urbanisation in many cities around the world – particularly in coastal areas – add to the problem.

Oceans are the largest activity. This comes at a g damaging fragile ecosystems, its latest report, the Inter acid and less productive events are becoming more frequent.

CHINADAILY.COM.CN
China Daily Global / 2021-04 / 15 / Page012
By Ingrid Van Wees and Melissa Walsh | China Daily Global | Updated: 2021-04-15 00:00

EIB financing The global economy would not exist without the ocean. Ocean-based industries contribute \$1.5 trillion annually and hundreds of millions of jobs in fishing, shipping, marine tourism, and renewable energy. These economic services, however, are at risk due to unsustainable marine practices and overexploitation of ocean resources.

23 projects in Europe with our C21 This year the World Economic Forum Global Risk Report identified biodiversity loss and human environmental damage as two of the biggest risks to the global economy.

Continued business-as-usual approaches will result in reduced natural capital- such as fish from the sea- and disruptions in supply chains. These pose a risk to most businesses, even those that indirectly rely on the ocean, as more than half of global GDP is moderately or highly dependent on nature.

Demand for sustainable investment increasing

Investment / Development
banks

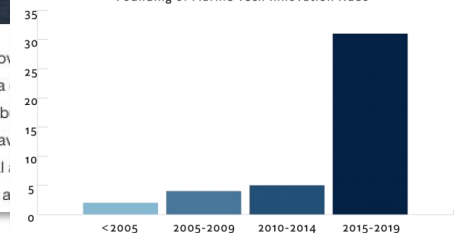
Ocean Solutions Accelerator doubles down on blue economy with new track for later-stage companies

Devin Coldewey @techcrunch / 6:44 AM GMT+8 • April 10, 2021 [Comment](#)



The planet-love accelerator a companies, b those that hav experimental : diversify the a

Founding of Marine Tech Innovation Hubs



Tech
accelerators

Towards Regenerative Business Models



West Africa loses over \$2 billion to illegal fishing because governments don't talk to each other



Fishing off West Africa's coast can't

FROM OUR OBSESSION
The Sea



By **Abdi Latif Dahir**
Reporter

May 8, 2017 · This article is more t

Greenpeace says poor go
is hurting West Africa's
costing it billions of doll
has become so severe th
region, the environment

ANALYSIS

Cargo theft: a billion-dollar problem

30 Jul 2017 (Last Updated February 4th, 2020 07:30)

The marine industry loses billions to cargo theft and cargo loss each year. Meanwhile, new technology is proving to be both a blessing and a curse, as cyber-piracy and digitalised theft are on the rise.



in

The issue of cargo theft and cargo loss has long been miscalculated, with largely inaccurate assessments of the true financial damages suffered.

Unsustainable – criminal behaviour

① JANUARY 28, 2019

Carbon dioxide emissions from global fisheries larger than previously thought

by Valentina Ruiz Leotaud, Sea Around Us



Pellizar 133. Credit: O roxo Flickr, Creati

Carbon dioxide emissions from t
30 per cent higher than previous
Sea Around Us initiative at the U
the Sea Around Us – Indian Oce
Australia have found.

Shipping industry emissions keep sailing upward

By **Toby Hill**



Total shipping industry emissions 2018, accounting for 2.89 percent according to the fourth International gas study, the [executive summary](#)

Unsustainable – environmental impact

Iranian aquaculture expansion threatens coral reefs

ENVIRONMENT

by Rob Fletcher
30 March 2021, at 7:30am

Plans by the Iranian government to expand cage aquaculture in the Persian Gulf, in order to increase food security, have the potential to destroy the region's corals, as well as posing a threat to large stands of mangroves.



MARES – regenerative and multi-function: end take, make & discard, put back more than we take out

Sea vision and emerging innovation





SpaceX smashes record with launch of 143 small satellites

© January 24, 2021 🗣️ Stephen Clark

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A Falcon 9 rocket lifts off Sunday from Cape Canaveral Space Force Station. Credit: SpaceX

SpaceX launched a Falcon 9 rocket Sunday from Cape Canaveral with 143 small satellites, a record number of spacecraft on a single mission, giving a boost to startup space companies and stressing the U.S. military's tracking network charged with sorting out the locations of all objects in orbit.



Photos: How drones are transforming Africa

In Africa, drones are being used to [deliver life-saving supplies](#) and serve as [eyes in the sky](#). Moroccan startup ATLAN Space has developed smart drones that can identify and report environmental crimes like illegal fishing, poaching or mining.



Image courtesy Saildrone

BY NOAA FISHERIES 06-03-2020 09:27:20

Scientists are capitalizing on existing technological capabilities and partnerships to collect fisheries data.



Consigning manual lice counting to history?

REGULATIONS POLITICS SEA LICE HEALTH

by The Fish Site
24 November 2020, at 11:49am

Manual counting of sea lice – an activity that is stressful for fish, time-consuming for farmers and statistically questionable – is no longer mandatory on all salmon farms in Norway, following a landmark ruling.



The Norwegian authorities have permitted two salmon farming companies to stop manual weekly sea lice counts, a resounding endorsement of Aquabyte's automatic lice counter
© Aquabyte

Aquabyte's first product is a solution for counting sea lice.

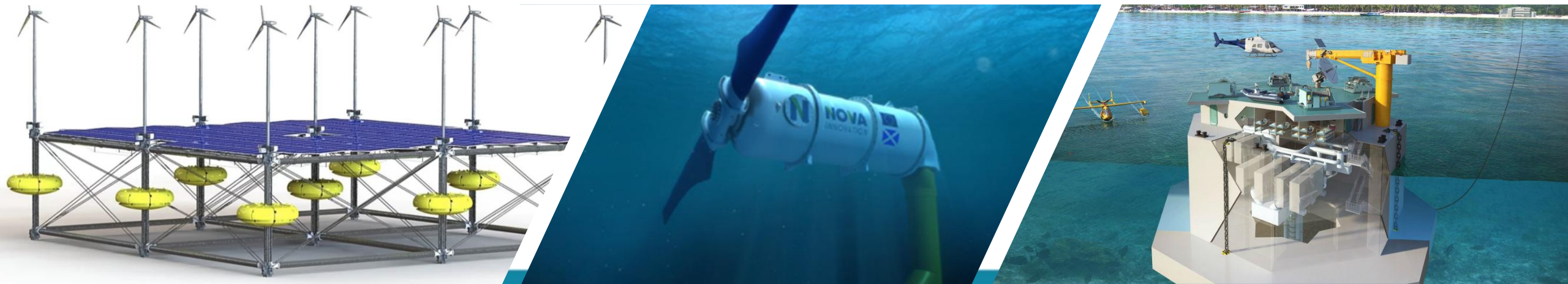
A photograph of a sunset over the ocean. The sun is a bright, glowing orb in the upper right, casting a warm orange and yellow light across the sky. The ocean below is dark blue with white-capped waves. A dark blue semi-transparent rectangular box is positioned horizontally across the middle of the image, containing white text.

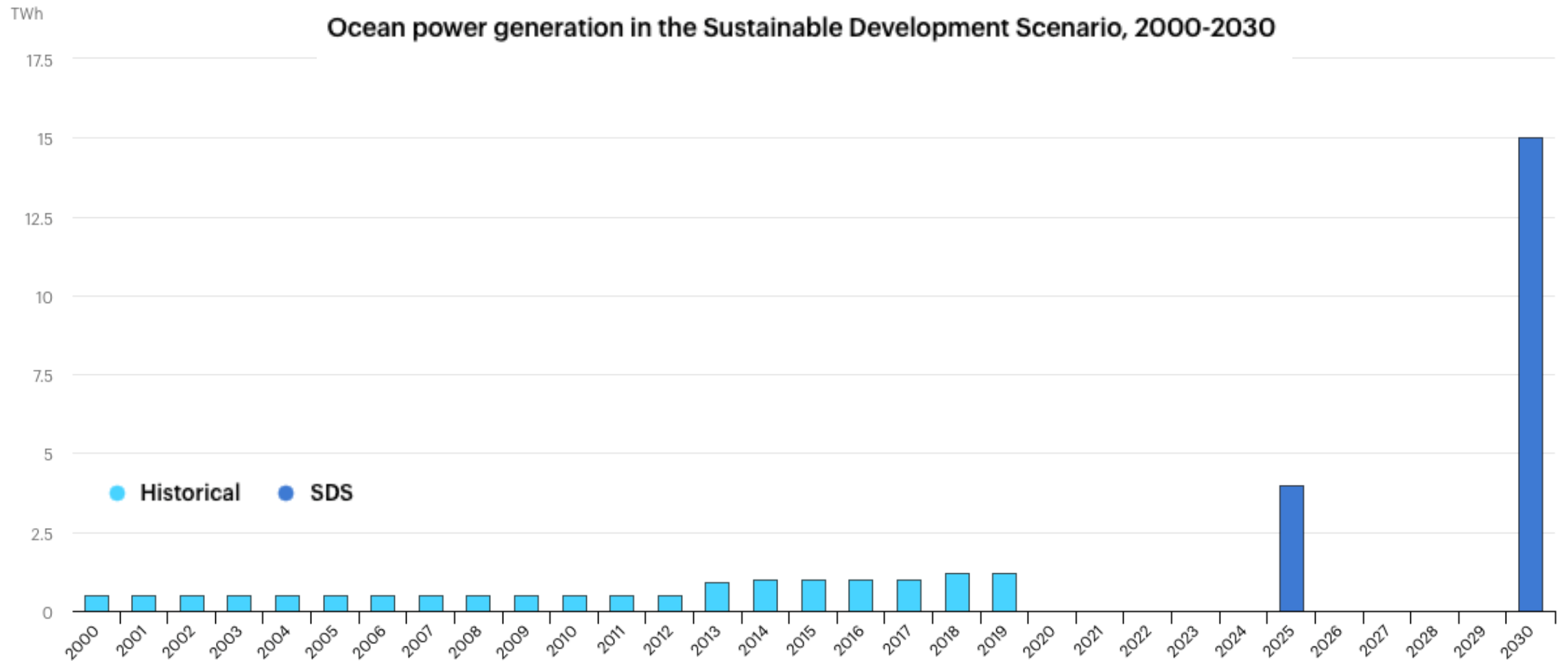
“The future is already here – it's just not evenly distributed.”

William Gibson, *The Economist*, December 4, 2003



Emerging offshore potential





Source: International Energy Agency Ocean Power report, June 2020

Recap

1. From 'take, make and dispose' to regenerative Blue Economies

2. 'Sea vision' enables more innovative planning and management

3. The technologies exist, but are not evenly distributed

4. We need business models that people will use, enabling regulation and effective monitoring