

Access and Finance Opportunities for Blue Economy in Portugal

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REPÚBLICA
PORTUGUESA

MAR

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Direção-Geral de Política do Mar

Ocean amounts for more than 90% of Portugal's territory....

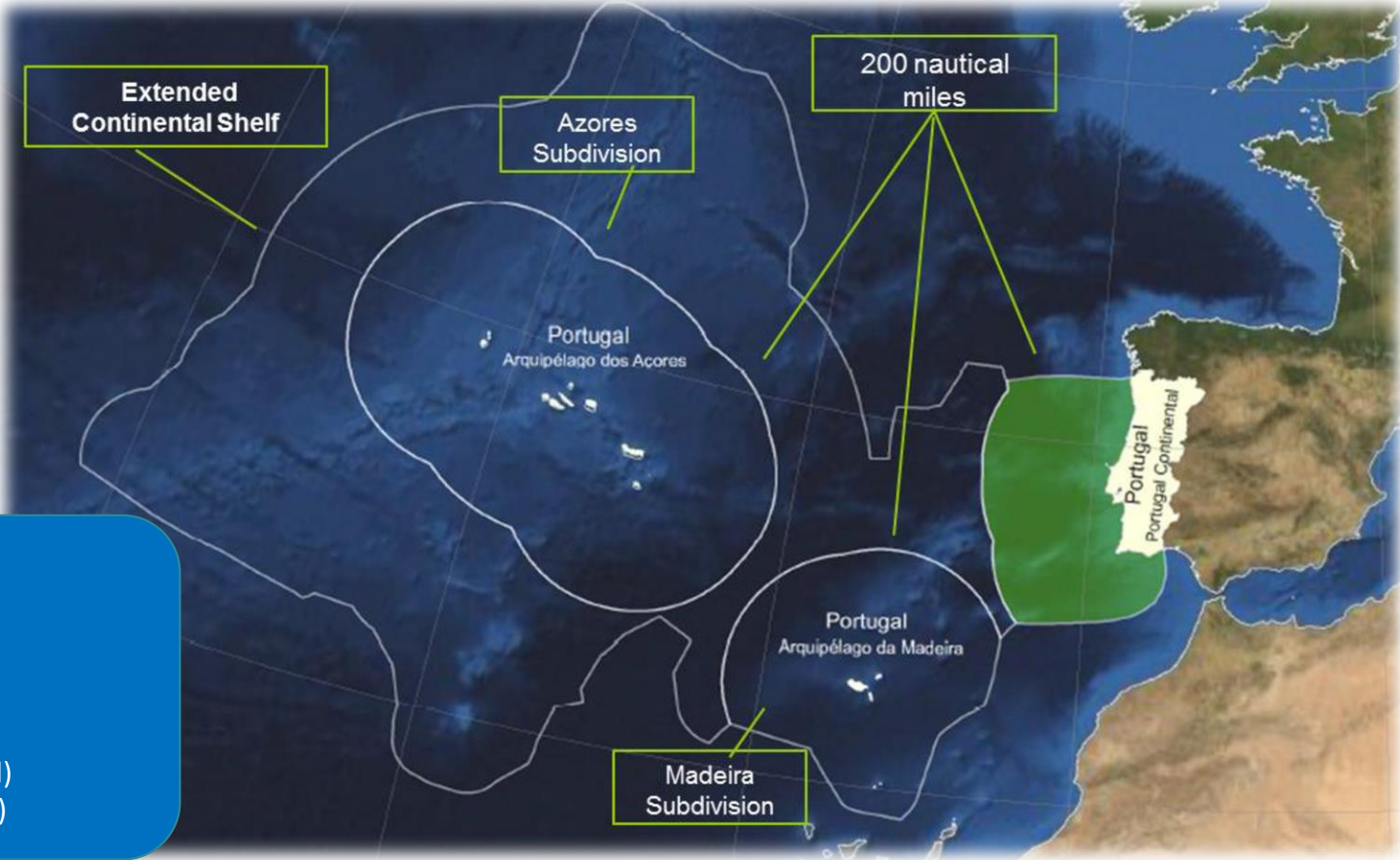
...but only 3,1% of the Gross Value Added (GVA)

Land area: 92.152km² (108th largest country in the world)
Extent of the coastline: 1859 km (including Azores and Madeira)
Current EEZ: 1.7727.408km²
World Ranking: 20th largest
European Ranking: 6th largest
95% of portuguese territory is maritime



EEZ+Extended Continental Shelf: 3.897.408 km²
World ranking: 9th largest
European ranking: 2nd largest
97% of portuguese territory is maritime

An area:
Bigger than India (the 7th largest country in the world)
Equivalent to Continental EU (except UK and Sweden)



Major Strategic Government Guidelines for Ocean Economy development

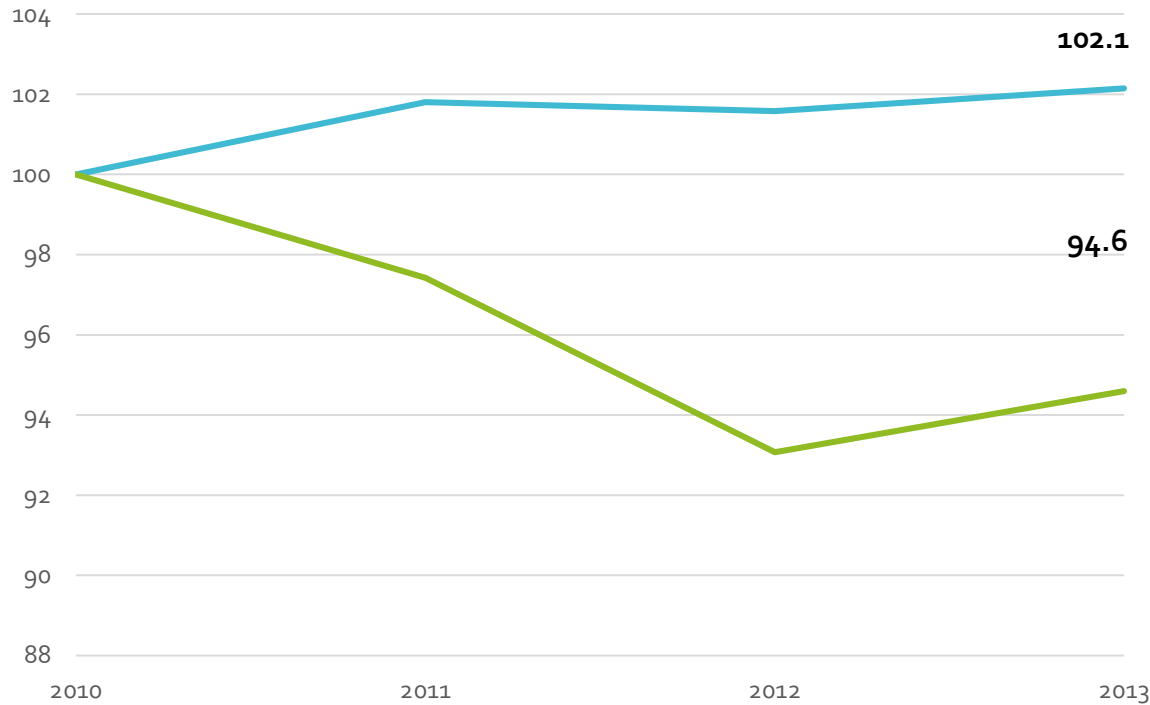
1. Strengthening traditional ocean economic activities: fishing and aquaculture, maritime transport, ports and naval industry.
2. Empowering emerging economic activities: blue biotechnology, ocean renewable energies, deep sea strategic resources.
3. Maximising Atlantic geostrategic centrality of the Portuguese Maritime space, including its deep and ultra-deep environments, as well as its biodiversity protection.

A high potential and resilient source of economic growth

3,1% of national GVA: 4.680 M€
3,6% of employment: 160.766 jobs

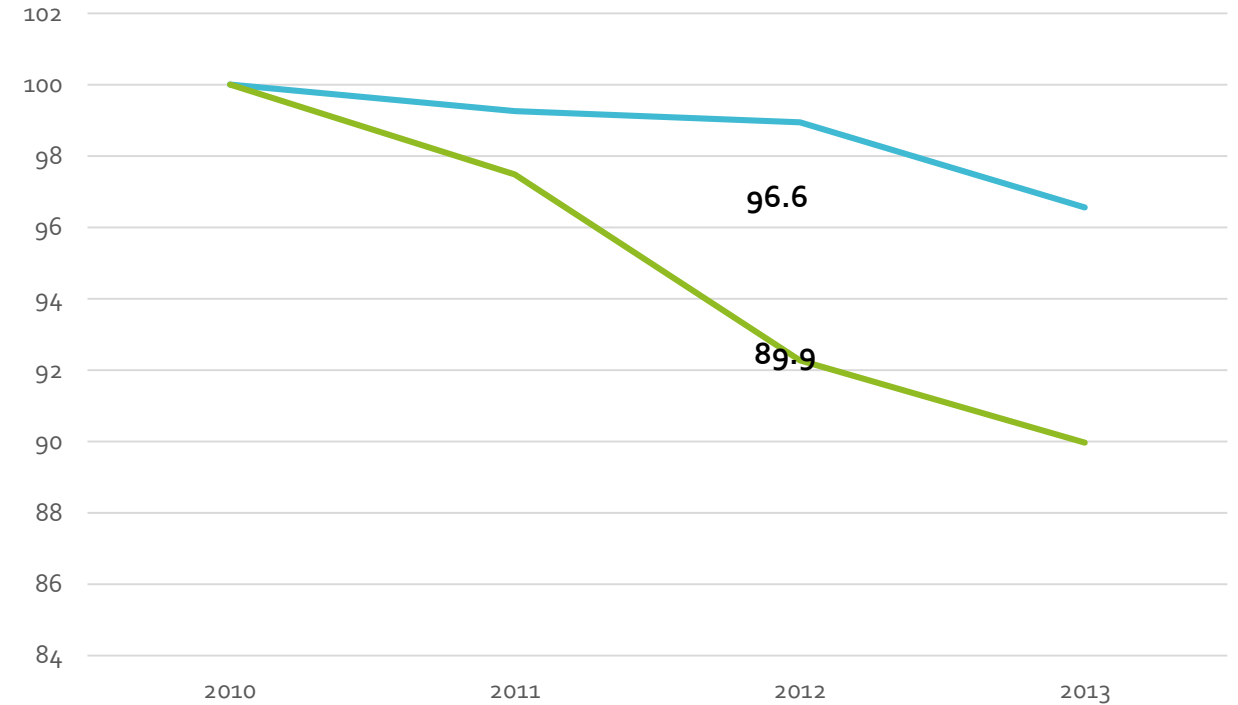
Exports: 950 M€
Exports growth: 23% since 2010

Portugal's GVA: Ocean Economy vs. National Economy, 2010-2013
(2010=100)



● Portugal Ocean Economy GVA
● Portugal Total GVA

Portugal's Employment: Ocean Economy vs. National Economy, 2010-2013
(2010=100)

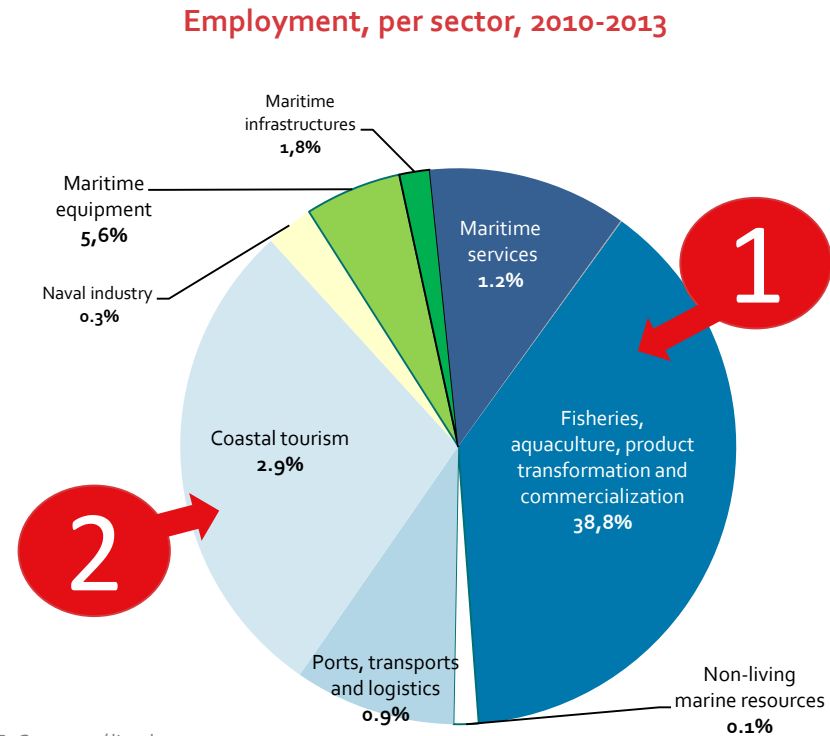
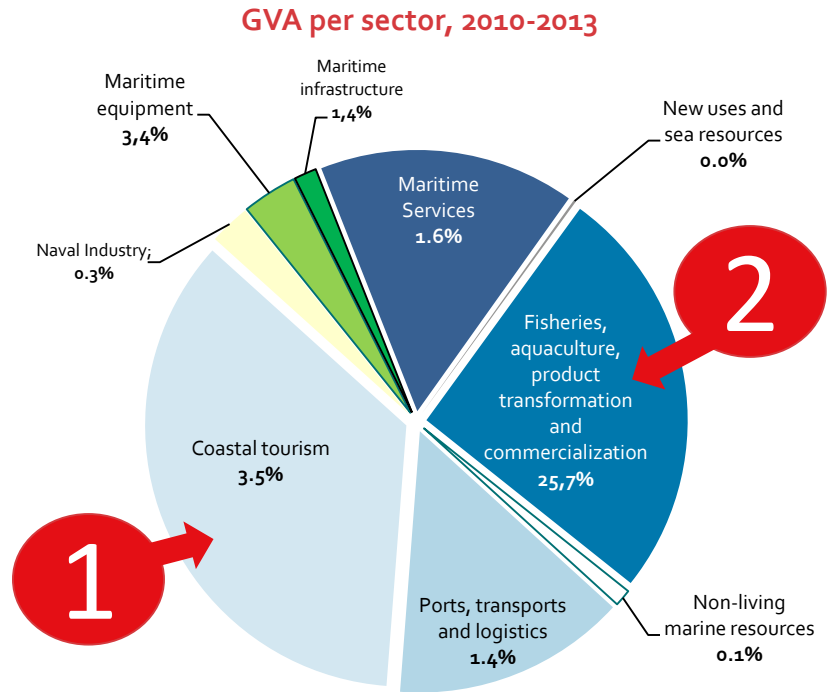


● Portugal Ocean Economy Employment
● Portugal Total Employment

FACT: Ocean Economy demonstrates a high degree of resilience
POTENTIAL: Ocean Economy can be a source for sustained growth

A high potential and resilient source of economic growth

Vast majority of GVA and employment is presently concentrated in Coastal Tourism, Fisheries and Aquaculture chain values

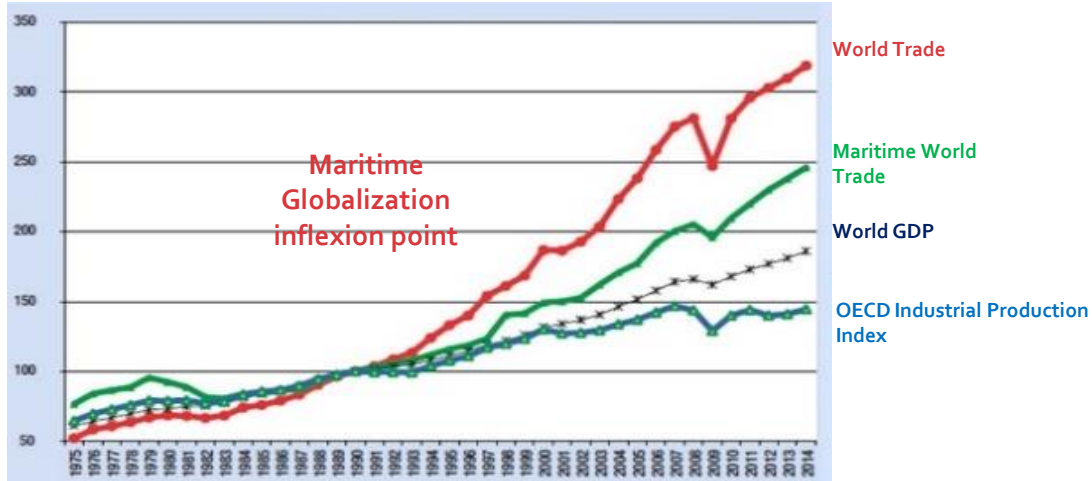


Fonte: INE, Conta satélite do mar

CHALLENGE:
Diversify and augment the value matrix of Portugal's ocean economy for generating high-qualified employment and high return investment opportunities

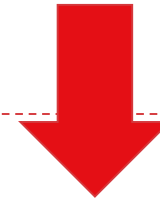
Portugal's Ports integration in world trade and industry global value chains is growing

Globalization Main Indicators, 1975-2014

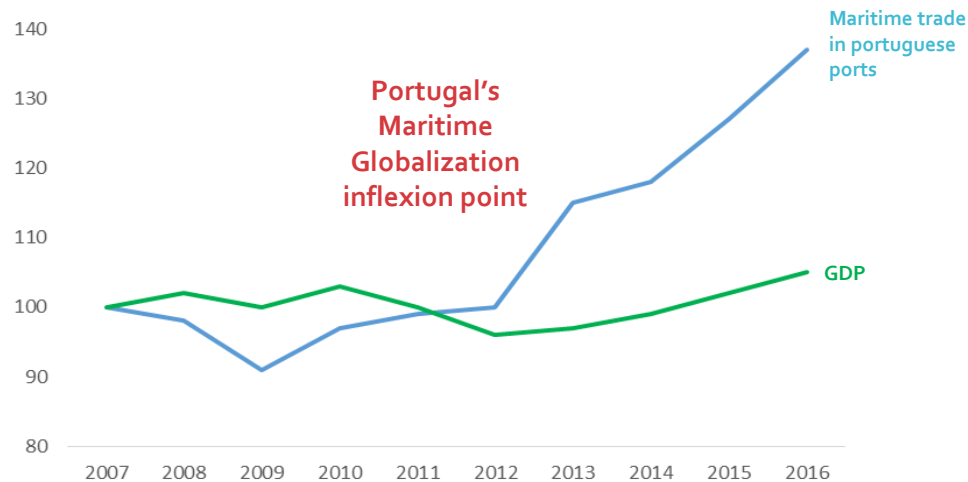


Sources: World Bank, OECD, 2015

- From 1990 onward, Maritime World Trade begins to grow faster than World GDP and independently from OECD Industrial Production Index – **it is the Maritime Globalization Inflexion Point**
- **This a direct result from the globalization process**, which distributes products and services' value chains around the globe
- In that sense, the countries that are able to **integrate successfully in this «circulation economy»** can benefit greatly from this new growth pattern



Portugal GDP vs Maritime Trade Growth, 2007-2014



Sources: INE, 2017

- **From 2009 onward**, maritime trade activity in Portugal began to **grow** steadily
- **From 2012 onward**, maritime trade began to **grow faster than GDP**, in similar pattern of the World Economy – it is **Portugal's Maritime Globalization Inflexion Point**
- This indicates that **Portugal is successfully integrating in globalization's «circulation economy»**
- This also indicates that there is a **huge GDP growth potential** for Portugal to tap by **integrating industries installed in its port's network in the distributed value chains of globalization's «circulation economy»**

The main maritime policy objective

- Increase ocean economy from 3,1 % to a level of 5%, in terms of Gross Added Value (GVA), driven by an increase of 200% in containerized trade and 80% in handled general cargo in ports, and reach 254 M€ of GVA from oceanic renewable energy sector
- Affirm Portugal as a hub in terms of LNG and green shipping, recognized by big global players as a port hub and a leader in ocean economy developed from the commercial ports

Sea investor

The economy of the sea, the training and literacy of the ocean, knowledge and protection of the marine environment, require a combination of resources among which financial resources whose source of financing may be multiple, public and private.



(<https://www.dgpm.mm.gov.pt/investidor-mar>)

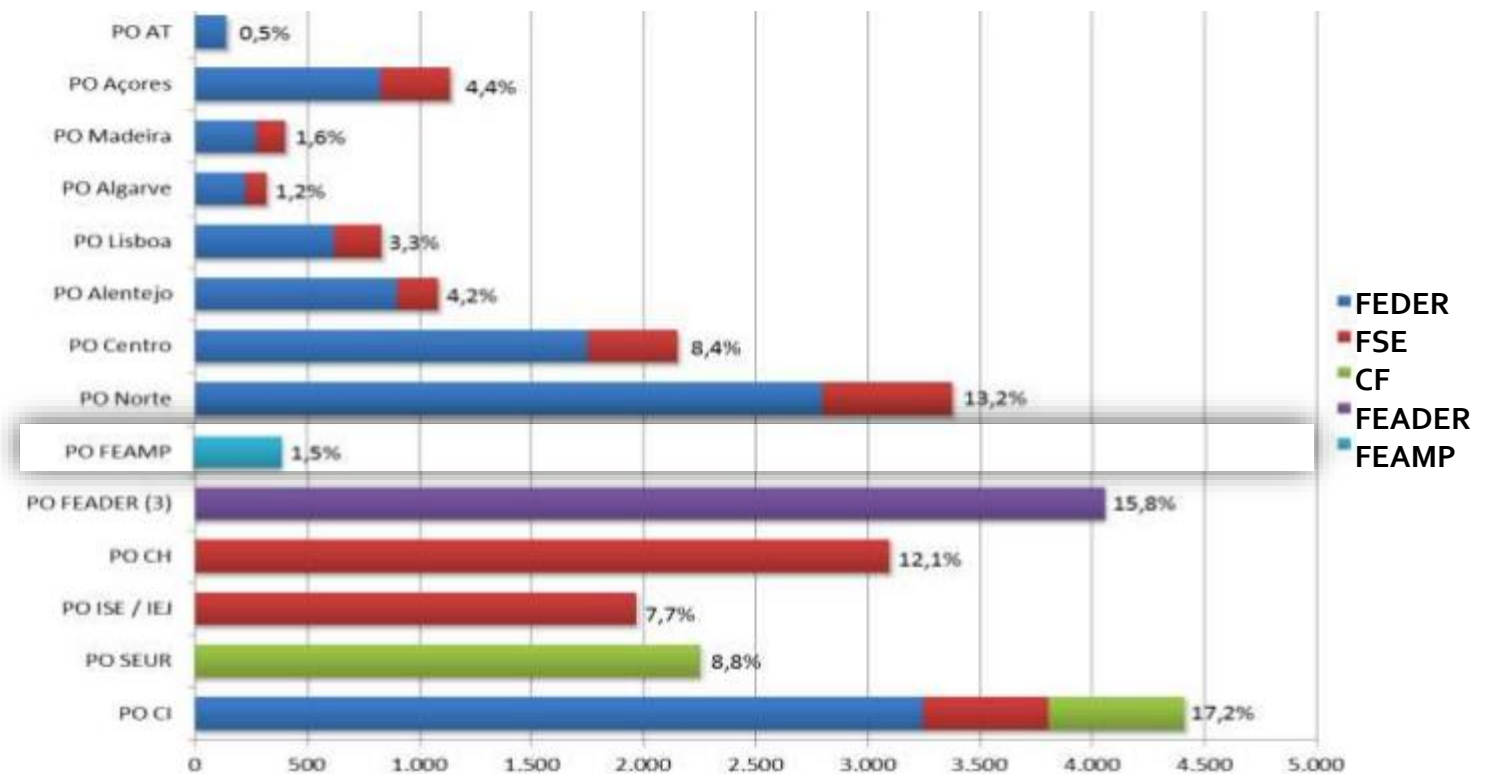
PT2020

The European Structural and Investment Funds - ERDF, Cohesion Fund, ESF, EAFRD and FEAMP - which sets out the programming principles enshrining economic, social and territorial development policy to 2014 and 2020.



25MM€

(2014-2020)





509M€

POMar2020

Operational Programme for
the European Maritime and
Fisheries Fund in Portugal for
2014-2020

Funding priorities	M€
Balance between fisheries activities and environmental protection and sustainability	103.6
Development of aquaculture and improve marine spatial planning	59.0
Fisheries control and inspection, by improving data collection and management	55.5
Local development initiatives, through innovative projects of fisheries and aquaculture	35.0
Diversification and valorisation of seafood products, through marketing plans	111.2
Strengthening the efficiency of maritime surveillance	5.3
Technical assistance to ensure efficient administration of the EU funding	22.8

85%
maximum
support

EEA Grants 2014-2021

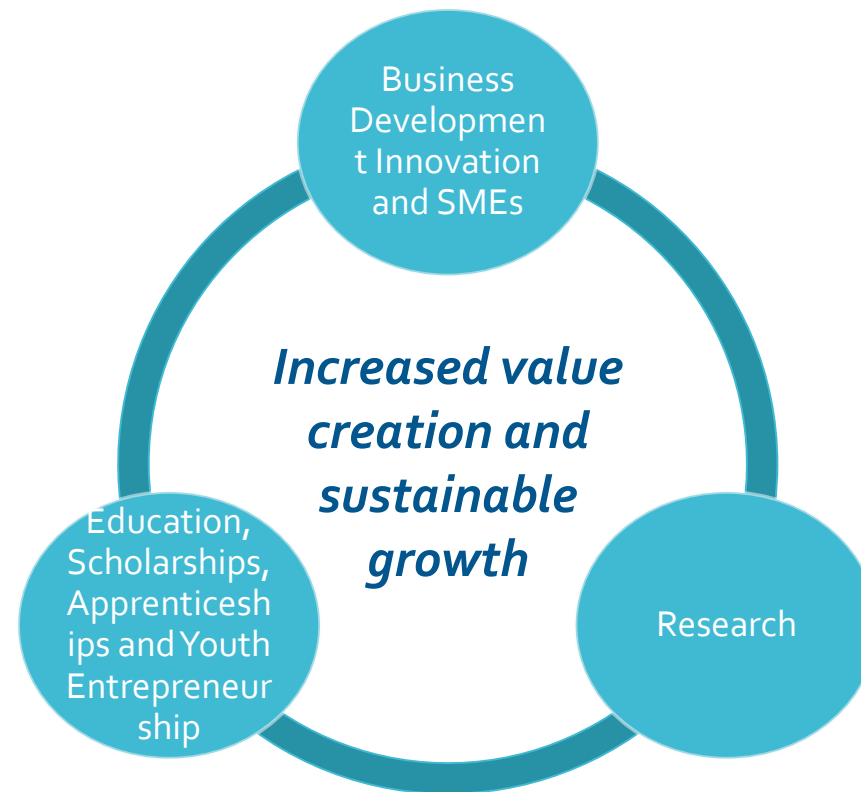
The EEA Grants will focus on SMEs, prioritizing the support for profitable business solutions that promote positive environmental impacts, innovation initiatives and science endeavours.

The total amount for EEA Grants will be about 44,7M€ during the period 2018-2024



45M€

BLUE GROWTH INNOVATION AND SMEs



Blue Fund

Innovative public financial instrument focused on the development of the ocean economy, scientific research and protection of the sea environment.



54M€

The Blue Fund will prioritize the development of sea biotech start-ups, underwater robotics, innovative shipbuilding, ocean energy, aquaculture technology and innovative solutions for ocean protection, safety, monitoring and surveillance.

Resources: 54M€ until 2020, 14M€/year, with public resources.

The Blue Fund is open for the establishment of financial partnerships with national and international public and private bodies. These arrangements facilitate the scaling-up of industrial investments, since it opens a wider range of financing solutions with better conditions, like access to European Investment Bank credit.

The Blue Fund is managed directly by the Minister of the Sea.



Ports: the frontline for developing new wealth sources from the ocean economy

Create technological acceleration platforms and new skills in ports

1. Encourage industry innovation and modernization (training, R&D and technology)
2. Create technological acceleration platforms in ports for new businesses in the advanced sea industries
3. Transform the Portuguese port system into a 'service area' for supplying LNG ships and a LNG re-exporter hub
4. Increase the turnover and the degree of specialization of the naval industry

Increase 50% of turnover in transversal activities

To create conditions for the supply of LNG vessels in the Mainland Ports until 2026

Increase shipbuilding industry's 50% turnover

Ports as interfaces between science and industry

TRANSFORM SOURCE 1:

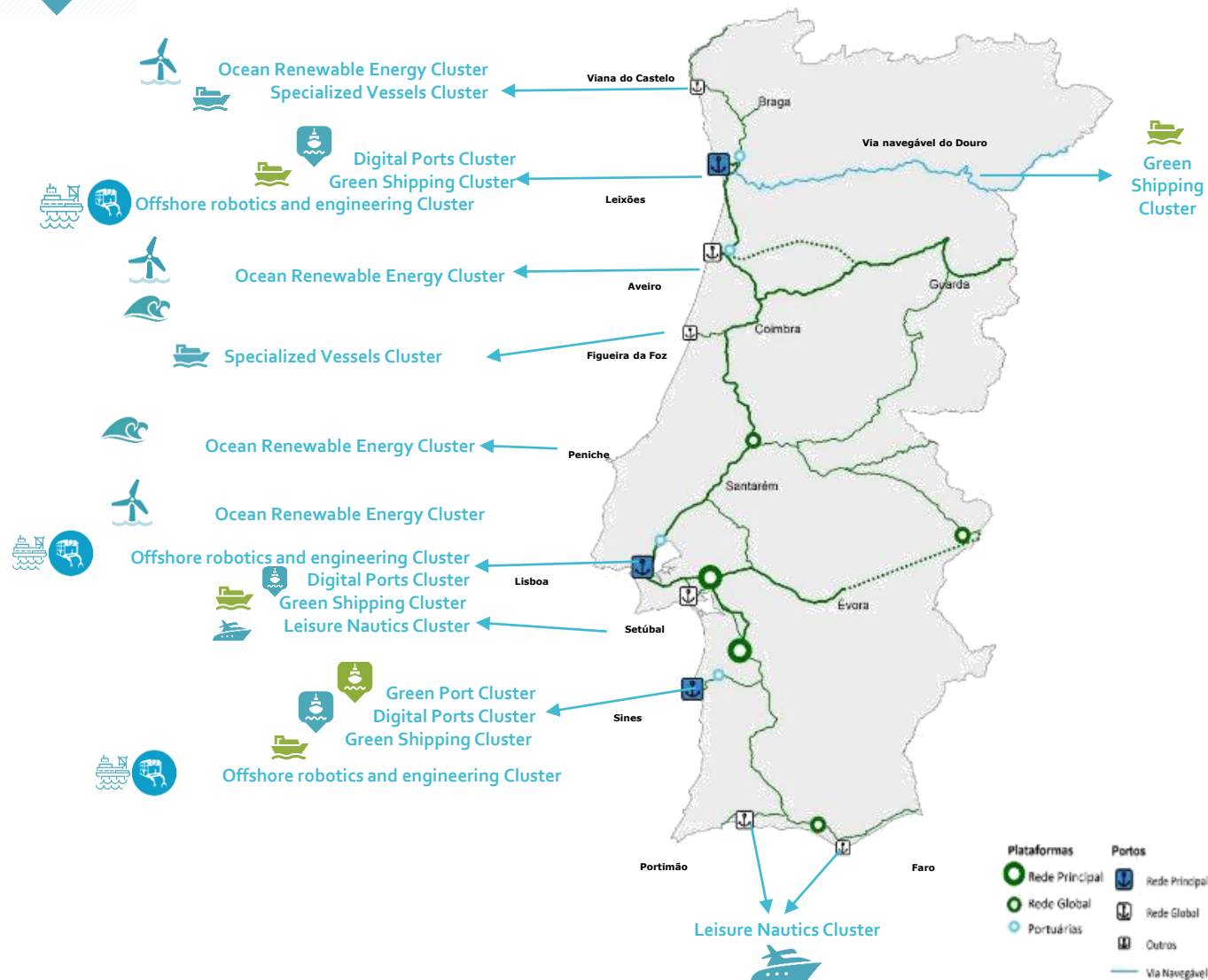
LEVERAGE OCEAN SCIENCE+R&D SERVICES FOR GENERATING INNOVATION AND ENTREPRENEURSHIP TO TRANSFORM THE VALUE MATRIX OF PORTUGAL'S OCEAN ECONOMY

TRANSFORM SOURCE 2:

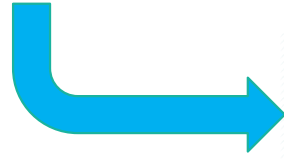
USE PORTS AS INNOVATION ACCELERATION PLATFORMS FOR DEVELOPING OCEAN ADVANCED INDUSTRIES, INTEGRATED IN GLOBAL VALUE CHAINS, THUS TRANSFORMING PORTUGAL'S OCEAN ECONOMY VALUE MATRIX



PORTUGAL PORTTECH CLUSTERS Innovation Accelerators for Ocean Economy Competitiveness



Transforming science into innovation using ports industry



PORTUGAL PORT TECH CLUSTERS Innovation Accelerators for Ocean Economy Competitiveness

Ocean Renewable Energy Cluster

Development and test sites for ocean renewable energies

Specialized Vessels Cluster

Specialized vessels production (ex: LNG bunkering, O&G and offshore wind operations industry, ocean research, etc.)

Green Shipping Cluster

LNG onshore and/or offshore refuel capacity; R&D+Innovation for port and vessel energy efficiency

Offshore robotics and engineering Cluster

R&D and industrial services: offshore engineering offshore, autonomous vessels and underwater robotics

Digital Ports Cluster

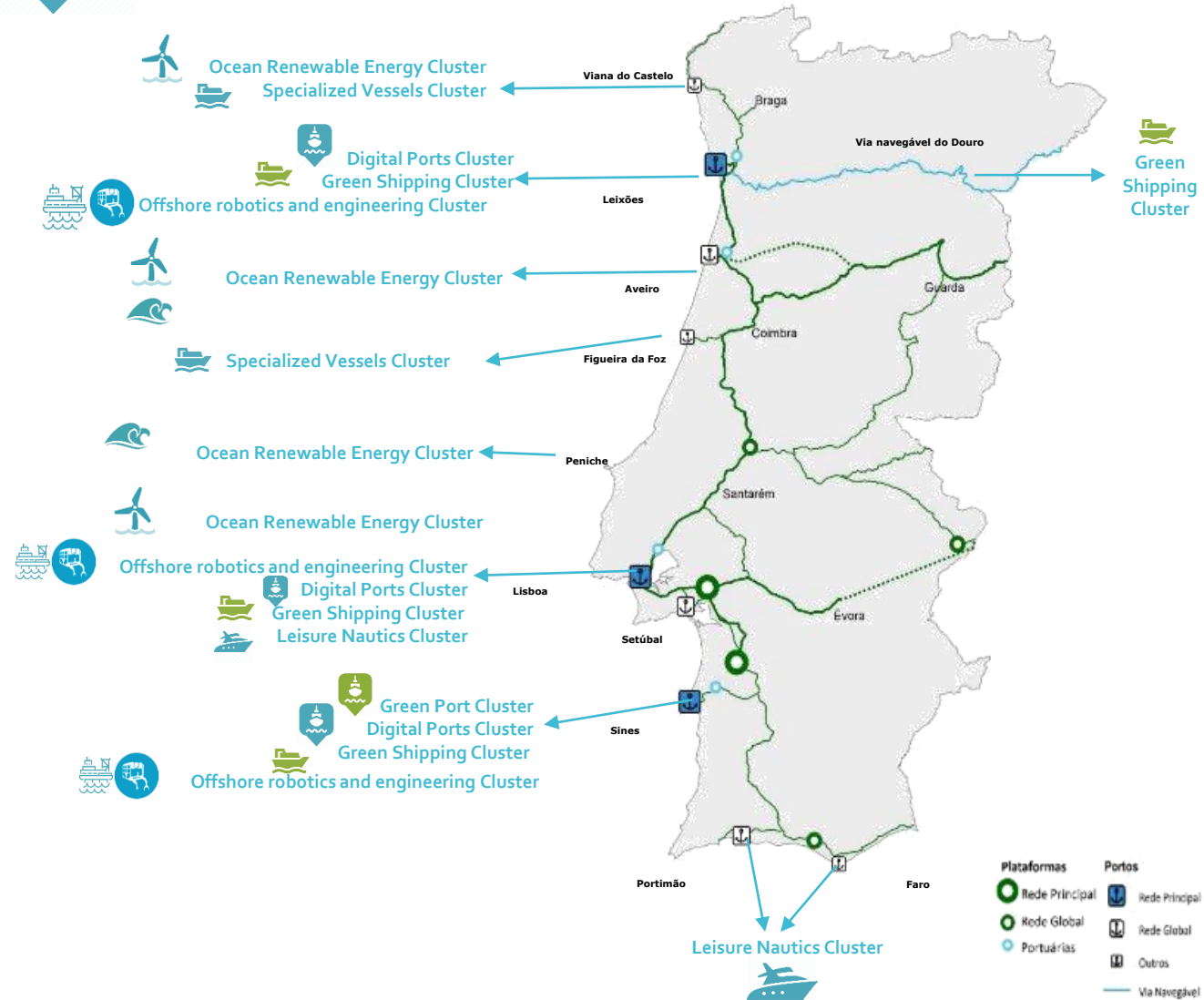
Installed capacity of digitalization and integration of transport and logistics functions; Incubation of specialized start-ups in the digitalization of port and maritime services; optimization tools for port management (eg: big data applied to the predictive management of port handling flows)

Green Port Cluster

Development of industrial solutions that augment ports and shipping environmental sustainability (waste management, circular economy)

Leisure Nautics Cluster

Development of new business models and building capacities for leisure nautics, specially in the Mega-Yachts segment





PORT TECH CLUSTERS INTEGRATED INVESTMENT AREAS

- Developing the ocean economy means developing new technology that is able to deliver innovative, efficient and environmentally sustainable solutions, creating new paths for a sustainable, secure and clean growth.
- The high-quality, cost-savvy, of Portuguese engineering human resources, industry and scientific system has been creating a stream of excellence that supports the development of the emergent offshore technology clusters

3 business playfields com 4 synergy areas

Modular Construction
for greater agility in
global operations and
cost control
+
naval innovation



Ocean 4.0

Digitalization, automation and
engineering

Information operations in real
time + total subsea production
process + demand for ocean
monitoring
to increase productivity and
lower costs

Production
and PSV
Vessels
Integration

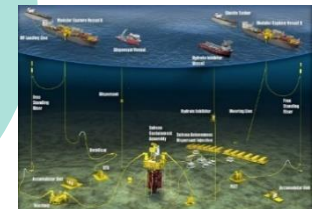
integrated
components
and systems
for surface-
subsea
operations

Integrated
Communicatio
n Systems

Ocean Robotics Industry

Electronic
Component
s and
Tooling for
ROV / AUV

Subsea Equipments Industry



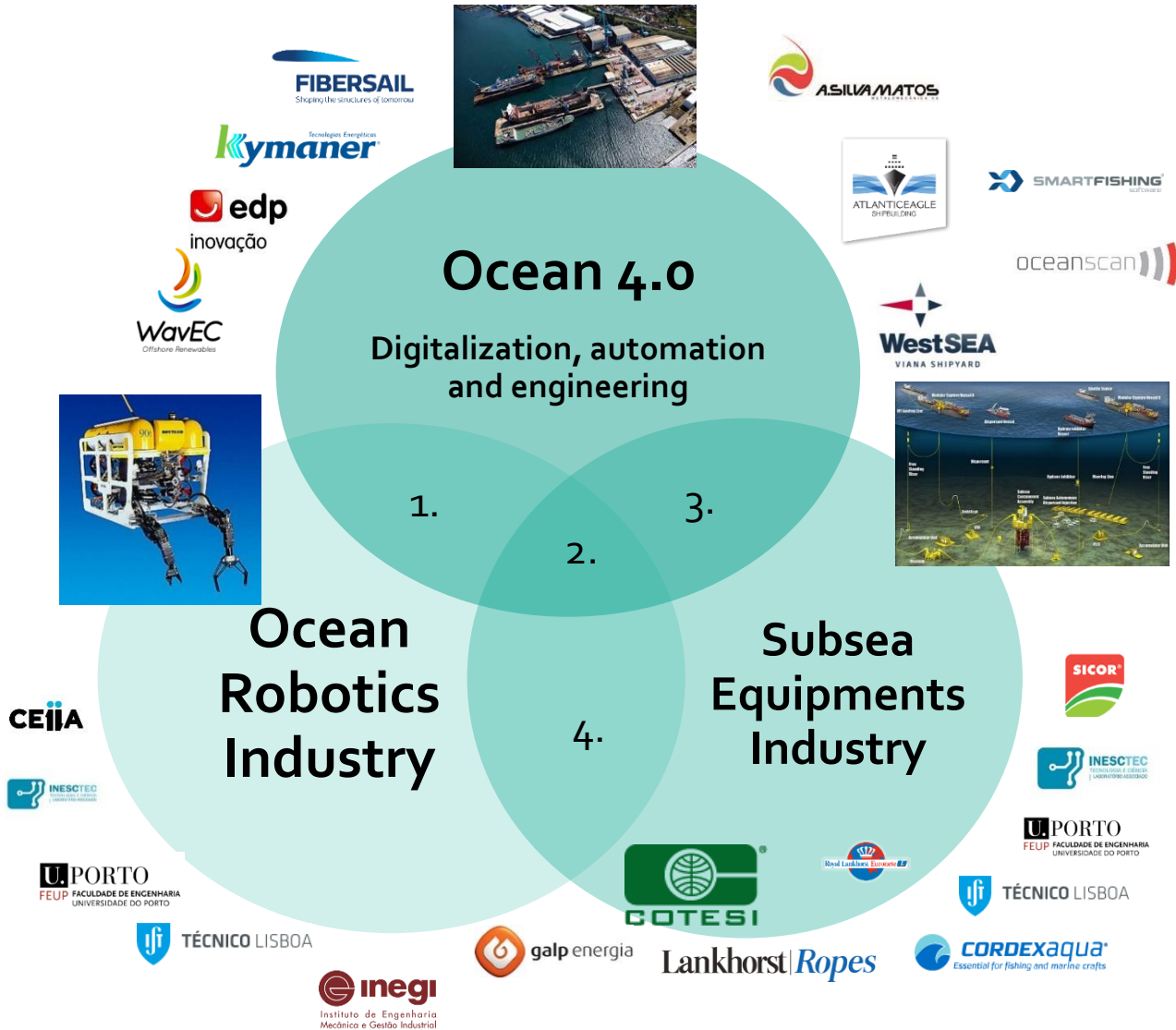
Robotics systems specialized and distributed more
effective innovative, more efficient and with lower CAPEX
and OPEX
costs



PORT TECH CLUSTERS INTEGRATED INVESTMENT AREAS

+ PORTUGUESE
SCIENTIFIC
AND
INDUSTRIAL
CAPACITIES

3 business playfields com 4 synergy areas



Forget Berlin, Lisbon wants to become the start-up capital of Europe

This article is published in collaboration with [Reuters](#)



"You see international entrepreneurs thinking 'where should I go and build a company?' and you see that Lisbon is on the map."

Image: REUTERS/José Manuel Ribeiro

Written by
Axel Bugge
Writer, Reuters

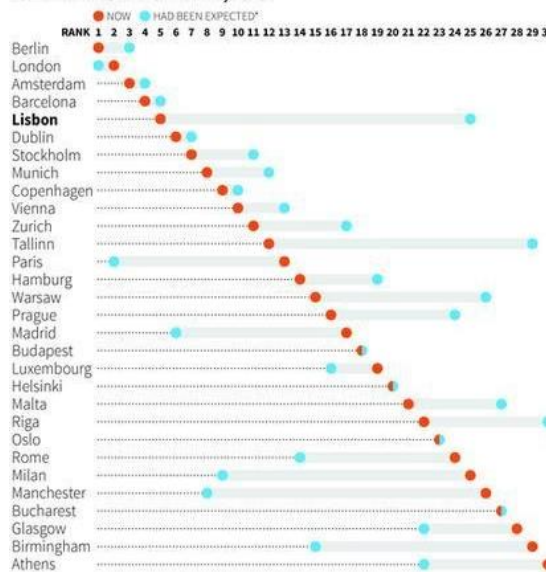
Near a former red-light district around Lisbon's old Cais do Sodre docks, scores of young entrepreneurs are trying to leave depressing economic times behind and turn Portugal's capital into a hive for tech startups.

- Portugal start-up ecosystem is taking off
- Lisbon was the 5th most preferred city for starting up a company, right after Berlin, London, Amsterdam and Barcelona

Start me up

Just a few years after the hardship of Portugal's debt crisis and bailout, Lisbon is generating a cool 'tech buzz', attracting investment and earning the right to host Europe's biggest tech conference.

RANKING OF STARTUP CITIES, 2016



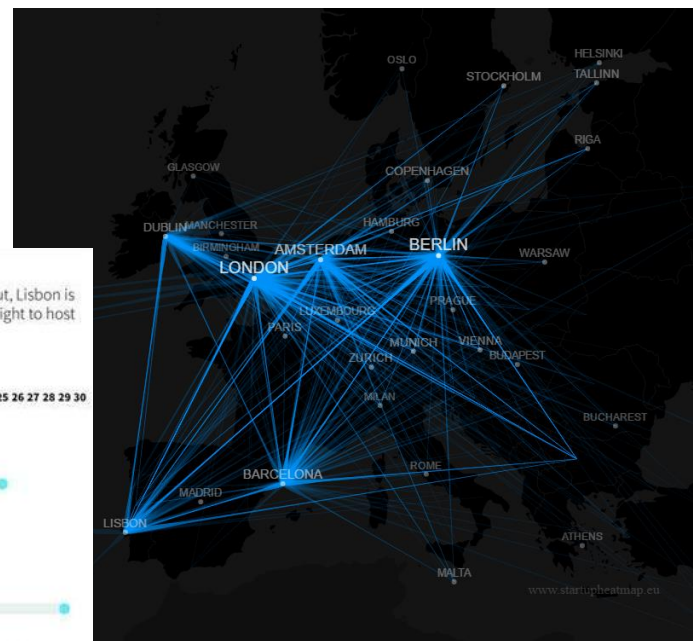
NUMBER OF LISBON STARTUPS



*Based on media mentions and same 30 hubs ranked according to the answers in the Startup survey.
Sources: Startupheatmap; Startup Europe Partnership

C Hughes, 31/10/2016

REUTERS



- The number of Lisbon start-ups that get funding grew 4X in 5 years
- The new investments in ocean economy will benefit and differentiate this innovation dynamics that is transforming the country's economy fundamentals



Portugal PORT TECH CLUSTERS

Start-ups:
Industry 4.0 for
maritime
digitalization
and
automation -
examples



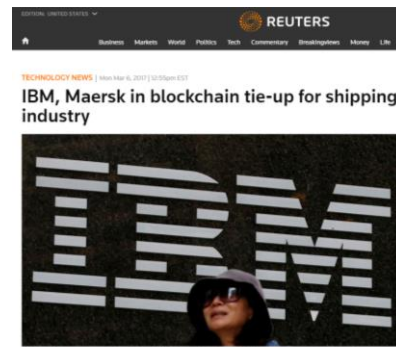
Integration of optic fiber in offshore structures: offshore wind components, ship structures



Management software for fishing operations: real-time mapping of resources, vessel operation, fishing boat management



Renting of aquatic and underwater robotics and autonomous vehicles for offshore operation (civilian and militar); services provider; robotics cooperative systems

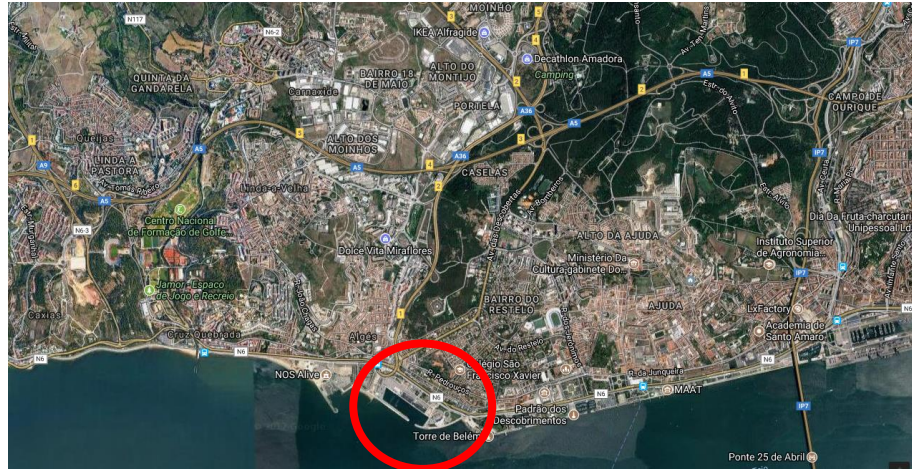


Application of blockchain technology to ports, shipping and logistics operation, bringing digitalization and automation for increased efficiency

LISBON SEA CAMPUS

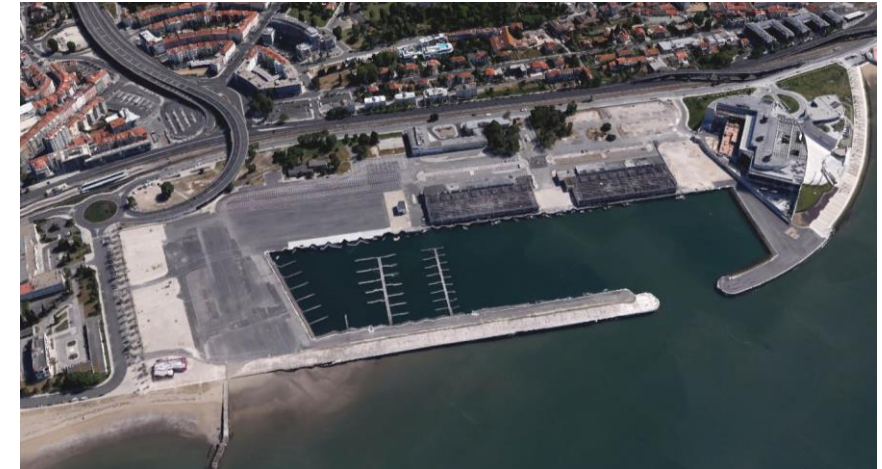


Portugal PORT TECH CLUSTERS



Objective

- Create a R&D+Innovation Campus focused in the ocean, recovering an area with a strong portuary memory
- To conquer world excellence in research, development and innovation in the



Location

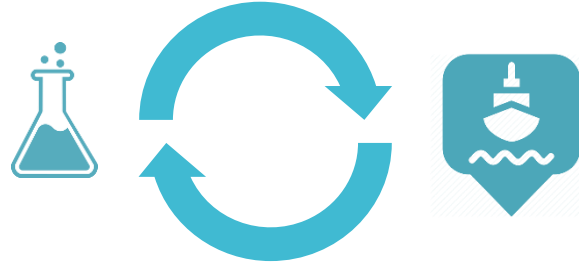
Pedrouços Dock; área of 18,6 ha

Develop a startup ecosystem for ocean applications

- Public institutions related with sea and ocean policy
- University centres
- Research labs
- Start-ups
- Anchor entities for helping scaling start-ups and R&D projects
- Accomodation for researchers and entrepreneurs
- Docking stations for research ships

TRANSFORMING PORTUGAL'S OCEAN ECONOMY VALUE MATRIX

LEVERAGE OCEAN
SCIENCE+R&D SERVICES FOR
GENERATING INNOVATION AND
ENTREPRENEURSHIP CAPACITIES



USE PORTS AS ACCELERATION
PLATFORMS FOR DEVELOPING
OCEAN ADVANCED INDUSTRIES,
INTEGRATED IN GLOBAL VALUE
CHAINS

Portugal
PORT TECH CLUSTERS

STRATEGIC GROWTH GOALS – 2026 HORIZON:

1. Double Portugal's Ocean Economy to 6% of national GVA (~8MM€)
2. Double Aquaculture output and lead innovation in its offshore production technologies
3. Portuguese ports as a Global Logistics Hub
4. Increase 200% in shipping container handling
5. Increase 50% of shipbuilding industry GVA (60M€)
6. Increase Ocean Renewable Energy GVA to 240M€
7. Main Atlantic Ocean Start-up Hub
8. Main Atlantic Green Shipping (LNG) Innovation Platform
9. Main Atlantic Deep-Sea Resources Sustainable Innovation Platform

Thank You!



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