

Annex 9 (to Section 4.3.)

Explanatory note of Cash-inflow of CENTER OF COMPETENCE

**Blue Coastal Marine and Riverine Innovative & Sustainable
Management of Environments and Resources**

Acronym of the Centre: BLUE-CRISTAL

When developing the current forecast for expected revenues for the period 2024–2029, the following approach has been used:

- ✓ In the currently developed version, the approach is to allocate funds according to the type of service, as described in detail in section 3 – BUSINESS MODEL AND MAIN ACTIVITIES, 3.1.1. Characteristics of the overall target market and its needs under the document **SUSTAINABILITY_PLAN.v3_22122024**;
- ✓ **The determination of the budget line (in section 6.2.1) to which the received revenues should be allocated is based on an accounting point of view, taking into account that the generated cash income is from the organizations partnering in the project, in their capacity as budgetary public organizations entitled by law to carry out economic activities;**
- ✓ When preparing the forecast, it has been taken into account that during the first two years, the main procedures for the procurement of the planned equipment and the planned construction and repair activities will be carried out. In this context, all revenues are planned mainly for the years **2027, 2028, and 2029**;
- ✓ The planned revenue of **2,590,000 BGN** is divided into the following three amounts:
 - ✚ **1,389,300 BGN – revenue that will be generated from providing the rental service of infrastructure and equipment, as specified in Annex 1 Financial analysis – Section 6.2.1, respectively in point 1.1.1.**

According to point 3 – BUSINESS MODEL AND MAIN ACTIVITIES, 3.1.1. Characteristics of the overall target market and its needs, two products/services are foreseen:

Products/services Page 56	Scientific tourism in the Black Sea on board the research vessel to enhance education and scientific dissemination <i>(based on the research outputs from WPI,2 and CMI)</i>
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Products/services Page 56	The research vessel rent by offering services to Bulgarian and international research organizations, government agencies, and private entities <i>(based on the research outputs from WPI,2 and CMI)</i>
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The amount of **1,389,300 BGN** has been obtained based on the following preliminary forecast and calculation:

DESCRIPTION	2027	2028	2029
Annual revenue from the provision of the rental service of The new Research vessels (24 m long)	126 000	126 000	126 000
Annual revenue from the provision of the rental service of The Aerodynamic tunnel of BSHC	337 100	337 100	337 100
Total amount (1 389 300 BGN)	463 100	463 100	463 100

Justification of the annual income received:

➤ **The new Research vessels (24 m long)**

Expected commissioning of the infrastructure – 2027.

Institute of oceanology operates its own Research vessel (R/V) Akademik for 40 years. R/V Akademik is 55 m long with 17 crew members and up to 20 scientists. Other Research vessel that operates in the Black sea and have supported international collaborations are Turkish R/V Bilim-2 (40 m long) and Romanian R/V Mare Nigrum (82 m long). EU-funded projects under programs like Horizon 2020, Black Sea Synergy, MISIS and EMBLAS (Environmental Monitoring in the Black Sea) have played a critical role in vessel charters. Approximately 200–300 vessel days across multiple operators in the Black Sea, with individual vessels being rented for research campaigns lasting between 10 to 20 days. Daily charter costs range between 10-12,000 BGN (R/V Akademik) to more than 30,000 BGN (/V Mare Nigrum) depending on vessel capacity, equipment, and mission scope.

Currently R/V Akademik possessed by Bulgarian Academy of Sciences and operated by IO-BAS is operational for research activities in the Black Sea especially along the Bulgarian coast. R/V Akademik has been actively involved in scientific missions in the Black Sea region, supporting projects funded by Bulgarian and European organizations. Over the past 20 years, the vessel has supported an average of 2-3 research charters per year. Missions included oceanographic surveys, environmental studies (National Monitoring programs in terms of WFD and MSFD, biodiversity studies), and international collaborative programs with JRC, EuroFleet, South Stream, National Geographic, OMV and various EU, INTERREG, Bilateral and National projects. For specific needs the IO-BAS charters smaller boats, usually fishing boats with length of 15-17 m at average daily rate of about 4 000-5 000 BGN.

Based on above the daily rate for the new Research vessels can be set to 6 000 BGN. We foresee three carters at least per year each with duration of 7 days. **So the expected annual income amounts to 126 000 BGN.**

➤ **The Aerodynamic tunnel of BSHC**

Expected commissioning of the infrastructure – 2027.


The assumptions are based on the contracts with similar infrastructure (water tanks) existing in the BSHC and acting for more than 10 years.

All contracts include: Manufacturing of a physical model varies depending of the object between 10 000 to 17 000 BGN); Preparation of the experimental set-up (about 2 000 BGN each); and Model tests (daily rate about 3 000 BGN).

1. Research on floating marine energy converters: Expected 1 projects annually (up to 10 days) – expected income 47 000 BGN;
2. Research on ships and floating structures: Expected 2 projects annually (up to 7 days) – expected income 75 600 BGN;
3. Research on floating offshore structures and drilling platforms: Expected 1 project (up to 30 days) annually – expected income 112 000 BGN;
4. Research on transport vehicles: Expected 2 projects annually (up to 5 days) – expected income 54 000;
5. Research on residential and industrial complexes, road construction sites: Expected 1 projects (up to 10 days) annually – expected income 49 000 BGN;

Expected total annual revenue 337 100 BGN.

NOTE: The number of projects per year may vary depending on the needs of the maritime and civil construction sectors of the national and foreign industry.

 **486,700 BGN – revenues that will be generated from all other services specified in Annex 1 Financial_analysis - section 6.2.1., respectively in points 1.2 and 1.6.**

According to point 3 – BUSINESS MODEL AND MAIN ACTIVITIES, 3.1.1. Characteristics of the overall target market and its needs, two products/services are foreseen:

Products/services - Page 49	Development of integrated municipal plans, business plans and analyses and investment plans/models for strengthening the blue economy-oriented activities <i>(based on the outputs from WP4, WP5, WP6 and WP7)</i>
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Products/services Page 52	Development of integrated coastal management strategies that balance environmental conservation with socio-economic development <i>(based on research outputs from WP1, WP2, WP4 and WP5, WP7)</i>
Products/services Page 53	Services for development of predictive models for floods, erosion, eutrophication and other environmental coastal hazards <i>(based on WP 4, and WP5, researches and outputs)</i>
Products/services Page 54	Services for development of models for simulation of pollution scenarios and prediction of the pollution impact on the existing infrastructure, species and habitats <i>(based on the research outputs from WP1,2,4 and 5)</i>
Products/services Page 57	Predictive models - climatic envelope, habitat suitability and species distribution in the Black Sea ecosystem, modelling climatic signals and physical environment changes impact on biodiversity <i>(based on the research outputs from WP1,2, 5 and CMI)</i>
Products/services Page 58	Services for development of conceptual models and strategic guidelines for digital transformation of the ports and improved energy efficiency <i>(based on WP4 and WP6)</i>
Products/services Page 60	Services for development of digital twins of river and sea areas, costal zone settlements and ports <i>(based on the researches from WP4, WP5 and WP7)</i>
Products/services Page 61	Development of training materials and provision of short-term specialized trainings about key digital and blue economy technologies <i>(based on the results from all WPs)</i>
Products/services Page 62	Datacentre and data processing services for port authorities, shipping companies and businesses <i>(based on WP7/CMI)</i>

All described services will be provided by the partner organizations participating in the project, by signing **a service provision contract** or signing **a contract for effective cooperation** with potential business users. For this reason, the funds are indicated full only in two points - 1.2.1. and 1.6.1.


Based on a study conducted on the public portal in the Republic of Bulgaria for conducting procedures for the selection of subcontractors (<https://app.eop.bg/today>), and based on published concluded contracts for similar types of services according to the above, the maximum price for 1 contract for the development of municipal plans, strategies, forecasting and simulation models amounts to an average of 40,000 BGN.

Based on our preliminary estimates for the period from 2026 to 2029, on an annual basis we predict that a minimum of 121,675 BGN will be realized per year. This is completely feasible value assuming a minimum of 3 contracts per year from the total of the listed 9 types of services that will be offered. We plan to distribute the funds equally between the two budget items 1.2.1 and 1.6.1.

Description	2026	2027	2028	2029
1.2.1 Cash-inflows from research or services through economic activities (WP 1, WP 2, WP 3, WP 4, WP 5, WP 6, WP 7)	60 837,50	60 837,50	60 837,50	60 837,50
1.6.1. Cash-inflows from effective collaboration with business (WP 1, WP 2, WP 3, WP 4, WP 5, WP 6, WP 7)	60 837,50	60 837,50	60 837,50	60 837,50
Total amount (486,700 BGN)	121 675	121 675	121 675	121 675



Products/services realizing the amount 486,700 BGN	WP 1	WP 2	WP 3	WP 4	WP 5	WP 6	WP 7
Development of integrated municipal plans, business plans and analyses and investment plans/models for strengthening the blue economy-oriented activities				X	X	X	X
Development of integrated coastal management strategies that balance environmental conservation with socio-economic development	X	X		X	X		X
Services for development of predictive models for floods, erosion, eutrophication and other environmental coastal hazards				X	X		
Services for development of models for simulation of pollution scenarios and prediction of the pollution impact on the existing infrastructure, species and habitats	X	X		X	X		
Predictive models - climatic envelope, habitat suitability and species distribution in the Black Sea ecosystem, modelling climatic signals and physical environment changes impact on biodiversity	X	X			X		
Services for development of conceptual models and strategic guidelines for digital transformation				X		X	

Products/services realizing the amount 486,700 BGN	WP 1	WP 2	WP 3	WP 4	WP 5	WP 6	WP 7
of the ports and improved energy efficiency							
Services for development of digital twins of river and sea areas, costal zone settlements and ports				X	X	X	
Development of training materials and provision of short-term specialized trainings about key digital and blue economy technologies	X	X	X	X	X	X	X
Datacentre and data processing services for port authorities, shipping companies and businesses							X

 **714,000 BGN** – revenue that will be generated from Funding from national/European/international programmes, as specified in Annex 1 Financial analysis – Section 6.2.1, respectively in point 1.7.3.

Description	2025	2026	2027	2028	2029
1.7.3. Funding from national/European/international programmes	325 200,00	97 200,00	97 200,00	97 200,00	97 200,00
1.7.3.1.EU and National RTD projects	97 200,00	97 200,00	97 200,00	97 200,00	97 200,00
1.7.3.2.Funds received under nationally funded projects or programmes	228 000,00				

The following approach was used in revenue planning in points 1.7.3.1 and 1.7.3.2:

-  1.7.3.1. - All organizations partnering in the project have many years of experience and actively participate with project proposals under the following programs: Interreg VI-A Romania Bulgaria Programme, Erasmus+ CBHE, Erasmus+ Alliances for innovation, Horizon Europe Framework Programme (HORIZON), Interreg VI-B Danube Transnational Programme, INTERREG NEXT, bs-cbcc, a detailed description of the stakes under which project proposals will be developed and submitted is listed on pages 82,83 and 84 of SUSTAINABILITY_PLAN.v4_27122024. We plan that at least one submitted project per year will be financed in the amount of 97,200 BGN.
-  1.7.3.2. – The planned amount of 228,000 BGN is according to information submitted by all organizations partnering in the project for the maximum number of projects won under the program - Scientific Research Fund of the Republic of Bulgaria (the amount is calculated as a minimum of 5 projects of 45,600 BGN each)