RESEARCH STRATEGY

TWIN4ECO PROJECT

The strategic goal of the Faculty of Economics in the field of **development of research** is defined in the Strategic Plan for the period 2023-2028 as "**Improving academic achievements through the integration of scientific research, innovative partnerships and international recognition**". It will be achieved through steady scientific and innovation partnership using set of national and international instruments. Through the strategic involvement in international accreditations (AMBA, AACSB and EQUIS), FEBA will be **internationally recognized partner in scientific and innovation networks**.

Background information and situational analysis

Over the last four years FEBA has grown in terms of tenured positions (senior assistant and above) aligned with the growth of intake of students (from 150 bachelors in 2019/2020 to 294 in 2024/2025) and 260 to 500+ masters leading to around 1,700 students in total. The teaching at FEBA is provided by 67 staff members hired on permanent labor contracts and around 200 on part time contracts (usually one course or less), mostly from business and public institutions (including Bulgarian academy of sciences, rarely other universities). Some of the permanent labor contracts are “half-time” due to appointments on a managerial position, which requires full time contracts (i.e. municipal entity CEO, central bankers or commercial bankers).

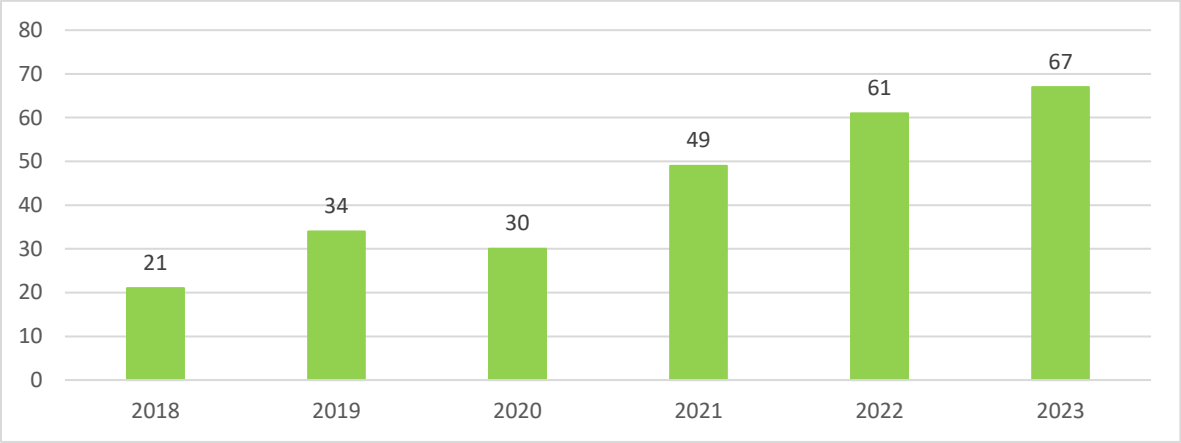
Table 1. Full time employment

Academic Position	2020	2021	2022	2023	2024
Professor	**11**	**8**	**6**	**9**	**14**
Associate Professor	**23**	**24**	**24**	**31**	**30**
Senior Assistant	**10**	**9**	**10**	**8**	**14**
Assistant	**9**	**8**	**6**	**7**	**9**
Total	**53**	**49**	**46**	**55**	**67**

Over the past five years, FEBA doubled its scientific output visible in Scopus and Web of Science and significantly contributed Sofia University "St. Kl. Ohridski" to meet the minimum requirements of QS (based on indexations in Scopus) for inclusion of Sofia University in the domains of economics, business and management. Yet, over one third of permanent staff does publish in WoS/Scopus. We are currently discussing to set a minimum of two papers in WoS/Scopus for all with a recommendation towards promotion to have at least one paper in first quartile journals in Web of Science/Scopus.

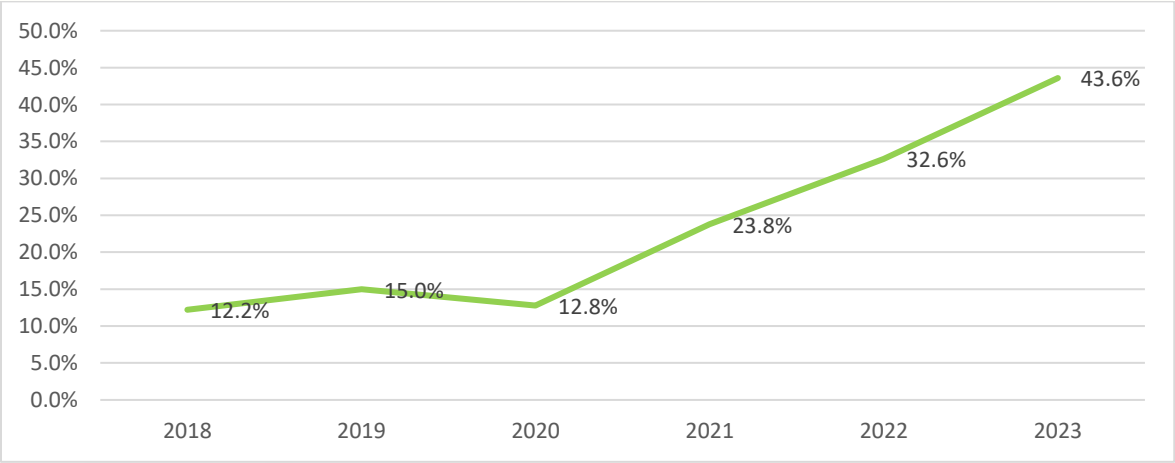
For PhD students, we will be setting a requirement to have a revise and resubmit from at least Q3 journal and will be targeting to have 50% of PhD students having at least one paper published in WoS/Scopus.

Figure 1. Publications in Scopus/Web of Science



A large part of FEBA researchers focuses on publishing in journals and conferences indexed in the two world bases, including such in Q1 and Q2, and the production that remains outside them is directed to publications in Bulgaria that are important for the local community – i.e. the Annual of FEBA, Economic Alternatives (In Bulgarian language, published by the University of National and World Economy), Economics and Management (published by the Southwestern University in Blagoevgrad).

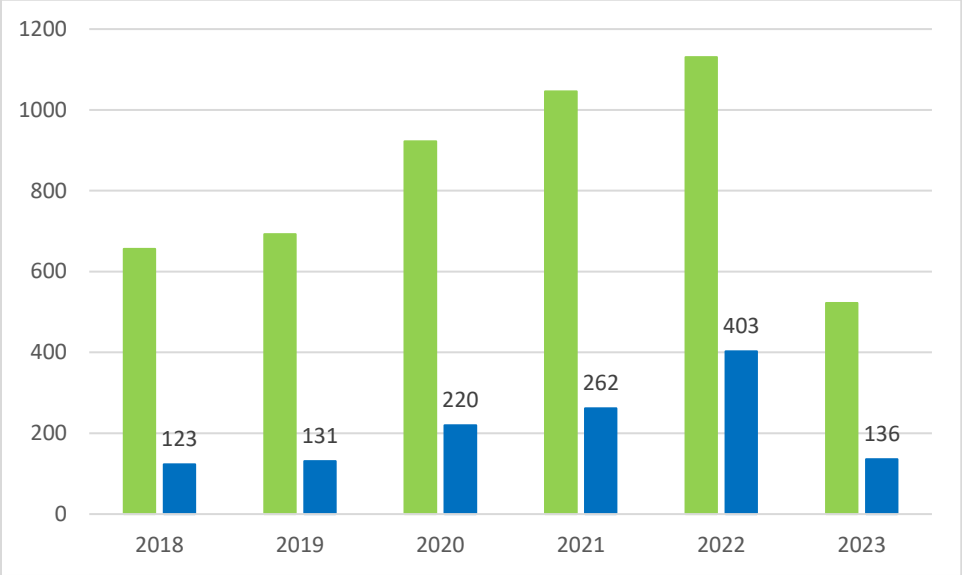
Figure 2. Share of publications in WoS/Scopus



Source: Mandate report of the Dean of the Faculty of Economics and Business Administration

The FEBA's scientific output has **an increasing footprint** (citations), with the share of citations in WoS / Scopus of all increasing from 19% in 2018 to 36% in 2022 compared to all citations tracked by authors. The figures show a lower share in the first half of 2023 (26%), but we expect this to be due to the indexing delay.

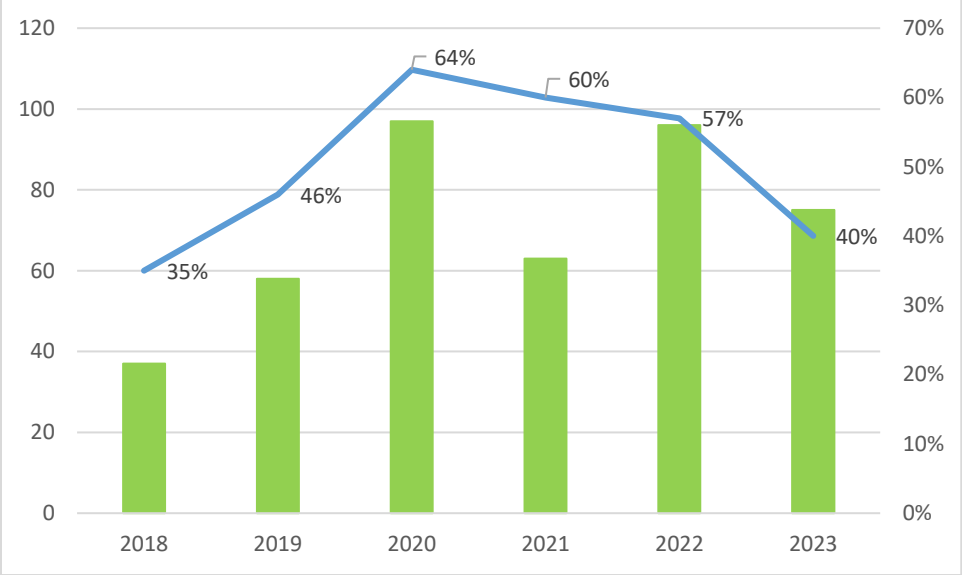
Figure 3. Total citations (green) and WoS/Scopus citations (blue)



Source: Mandate report of the Dean of the Faculty of Economics, October 2023

The project activity of FEBA faculty is extremely active and diverse in topics, partnerships and type of actions. In 2018 35% of permanent staff participated in projects, while in 2023 this share is 40%. There is a double increase in the number of participations – from 37 (2018) to 75 (2023).

Figure 4. Project dynamics



In the last four years FEBA attracted research funds amounting to about 6.5 million BGN, which allows young scientists to work on strategically important scientific tasks without distraction like work on unscientific positions in business just to compensate their low teaching salaries. The projects have different impacts on research activities – large scale projects provide complimentary income (up to 100% of the basic salary), funds to participate in conferences, purchasing data, computers and software, etc; small-scale (internal) projects provide funding for local conferences and support to PhD and master students.

Table 2. Funding at FEBA

Funding organization/programme	2020	2021	2022	2023	Total
European Commission		601,321			601,321
Erasmus +	741,520			222,560	964,080
Horizon 2020	58,835				58,835
Bulgarian programs	1,745,584	11,718		3,590,421	5,347,723
Foreign donors				179,124	179,124
Total	**2,545,939**	**613,039**		**3,992,105**	**6,549,762**

Note: Amounts are accrued in the year of approval. The amounts are in Bulgarian levs.

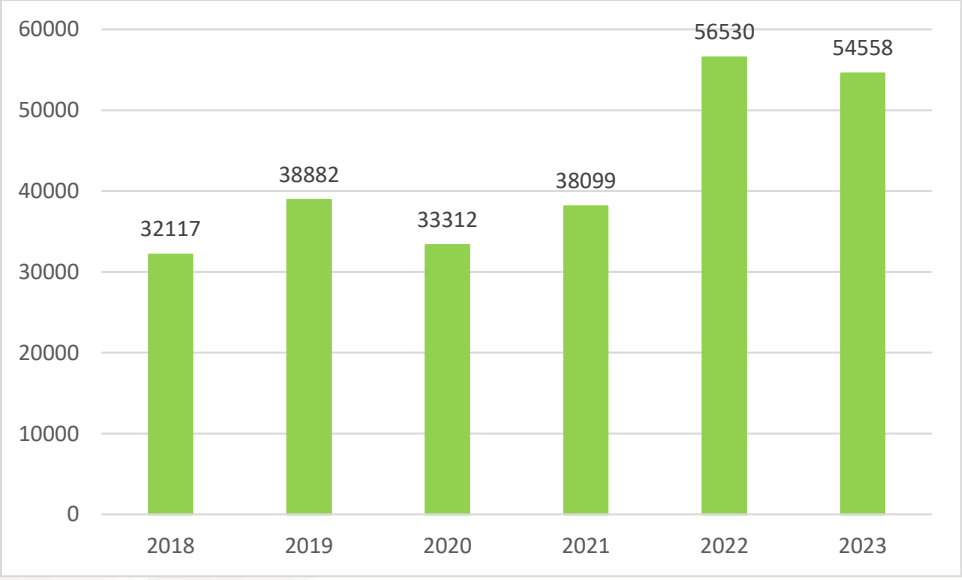
Internal projects (so-called "small" projects under the internal Scientific Research Fund of SU "St. Kl. Ohridski") remain a relatively small number, with a tendency to increase from 9 in 2018 to 12 in 2023, but with an increased average and maximum funding. This is due to the growth in funding we receive due to increased scientific output from previous years.

Table 3. Projects at FEBA

types of research projects	number by years					
	2018	2019	2020	2021	2022	2023
internal projects	9	8	16	10	9	12
national projects	7	10	17	17	18	13
international projects	12	27	25	25	27	29
Total	28	45	58	52	54	42

The domestic research funding pool increased on average over the period 2019-2023, by 40% compared to 2018, which allows for increasing FEBA's research capacity, while in the past these projects were seen more as an additional material incentive. Qualitative analysis of costs in the projects also shows an increasing scientific capacity, because from financing stationery, this money is used for participation in conferences, supporting PhD students, etc.

Figure 5. Internal Research Fund



For several years, Sofia University has been providing additional financial incentives for publications indexed on the Web of Science and Scopus. FEBA, unlike many other faculties, fully distributes the received subsidy according to the same methodology that determines the amount we receive, including for the “external” teachers and researchers, who are not on labor contract. There are two streams of financial support – the first comes from the University budget and is paid in year+1 (for publications in 2023 the amount for FEBA was 35,000 euro for 67 papers in WoS and Scopus) and the second is funded directly the Ministry of Education and Science in year+2 (for publications in 2022, which have impact factor or SJR rank, the amount for FEBA was 11,000 euro). In the first stream papers are equal no matter where published, while the second stream is heavily weighted towards better journals. However, the incentives prioritize quantity over quality.

Although the amounts are lower than those given in Romania and the Czech Republic, they still influence behavior.

For 2022 The Faculty of Economics managed to "rank" in fifth place in terms of attracting funds for additional material stimulation, ahead of the Faculty of Biology, Chemistry and Geology-Geography, although they are much larger than us in terms of teaching and research staff. In 2023 the faculty overtook the Faculty of Philosophy and took fourth place after the Faculty of Physics, the Faculty of Slavic Philology and FMI, which led to 1 percentage point more funds compared to 2022.

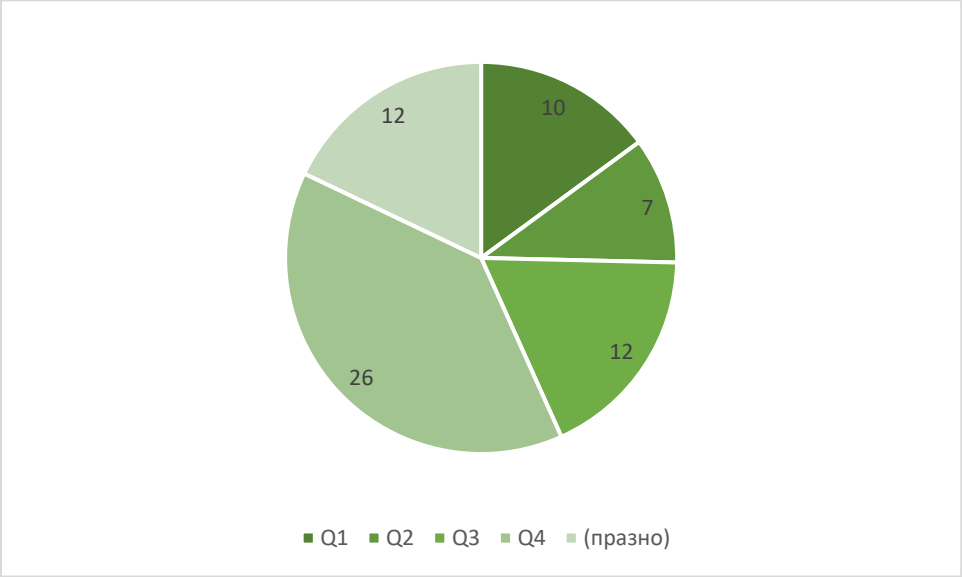
82% of papers included in the Web of Science and Scopus are in journals that rank in quartiles. In Q 1 there are 15% of the articles, in Q 2 there are 10%, Q 3 – 18% and the most in Q 4 – 39%. Although there is an increase in output in Q 1 (for example, in 2021 FEBA has 8 articles in Q 1, and in 2023 – 10) and Q 2 (from 6 to 7) there is still a need to improve quality and redirect attention of the college from Q 3 and Q 4 to Q 1 and Q 2.

The areas where FEBA faculty is publishing in are the following:

- Risk Assessment and Mathematical Models
- Economic Sustainability, Circular Economy, Green Transition, and Energy Efficiency

- Macroeconomic Issues, Public Administration Management, and Policy
- Artificial Intelligence, Machine Learning, and Data Science
- Entrepreneurship, Innovation, and Innovation Management
- Education and Leadership
- Healthcare, Medicine, and Biology

Figure 6. Distribution of publications by Q



The domains of publishing where FEBA ranks higher are in the scope of statistical and econometric analysis.

TWIN4ECO project related indicators

To foster a dynamic and innovative research environment, FEBA aims to intensify collaboration with partner institutions and industry stakeholders. This will be achieved by organizing and participating in joint research workshops, experience-sharing seminars, and policy forums, with a specific focus on global challenges such as sustainability, digital transformation, and economic resilience.

Emphasis will be placed on mobilities for faculty and students, promoting knowledge exchange through active participation in summer/winter schools and conferences. These efforts will be measured by the number of collaborative events, mobilities, and joint articles published with academic and business partners.

FEBA is committed to enhancing the quality and quantity of its scientific output, prioritizing publications in high-impact journals such as Scopus and Web of Science. Strategies include fostering interdisciplinary research within the two priority areas of Twin4Eco, attracting postdoctoral researchers and young scholars, and leveraging new participations in international research networks. Specific targets include increasing the number of Scopus/Web of Science articles, collaborative articles with partners, and policy briefs linked to research priorities.

FEBA will also track citations and references (both in WoS/Scopus and in policy-relevant documents such as laws, parliament hearings and so on) as a measure of the faculty's growing reputation and its indirect impact on the academic community. Societal impact will be tracked by appearance of FEBA research and faculty in media and important blogs and civil society activism.

Additionally, the faculty will focus on supporting intellectual property applications and submitting competitive project proposals to secure funding for innovative research initiatives.

Identification of potential research subdomains in the domains of energy and innovation:

The following priorities have been defined taking into consideration National Strategy for Science 2030, Innovation Strategy for Smart Specialization 2030, University Strategy for Science and strong thematic areas of FEBA.

1. Modeling energy transition pathways:
    a. Innovation strategies for sustainable regional development
    b. Governance perspectives and potential role of energy cooperatives
    c. Circular economy and energy intensive enterprises

   d. Social acceptance and planned behavior related to renewable energy and electricity payment models (liberalization, green preferences, etc)
   e. Green Deal system dynamics modeling (is it possible to integrate into a coherent model all different benchmarks and milestones set in the Green Deal?)
2. Measuring Innovation on country and EU level
   a. Biases of measurement of innovation through the R&D spending and patents related to country-specific institutional framework – is it a measurement gap or behavioral difference?
   b. Innovation cooperation institutionalization within different institutional setting (incomplete contracts and biased or delayed law enforcement)
   c. Research assessment systems linking measurement of innovation and measurement of academic performance
   d. Measuring social innovation and its impact on GDP
3. Innovation at firm level
   a. What are the determinants of successfully internationalized local firms and could we generate a theory behind a phenomenon of many local firms, which became international champions in niches linked to hobby and/or entertainment?
   b. Social innovation as a backbone for prosperity of social innovative oriented companies. Networking as an instrument for better synergy effects.
4. Digitalization and process improvement. What is the role of value chain integration on digitalization of low-innovation sectors (i.e. textile and cloth production)?
5. Innovation in governance: is there any future for cooperatives in the context of new firms creation and entrepreneurship? Is there any benefit for regional development if cooperatives are stimulated vis-à-vis traditional LTDs or variable capital entities, etc.?

Indicators for success based on the project proposal are presented in the following table:

no	Indicator	Overall importance level of the capacity upgrade indicator[1]	2022	Benchmark	Planned activities
1	Number of organized scientific events related to project priorities a. Workshops b. Panels (at other conferences) c. Poster sessions d. PhD seminars e. PhD training events f. exhibitions (at museums, galleries or open spaces)	4	3	6 3 3 4 4 2	Development of an annual calendar for each event Development of a normative framework for all scientific events Development of specific action plans for each event Develop content for each event
2	Number of co-working events with local authorities	3	2	10	Information activities Signing agreements for joint activities with local authorities Organization of collaborative events
3	Number of collaborative research events: a. Participation in conferences of partner universities b. Summer/Winter schools for PhD students and young scientists c. Collaborative Research Workshops d. Experience sharing workshops e. Policy and advocacy forums	4	1 1	6 2 6 6 4	Development of a preliminary calendar of events Development of a package of documents regulating the activities of each individual event Organizing a satisfaction assessment of each event
4	Mobility: b. Number of people who participated in the mobilities i. Among them are young scientists	4	7	25	Development of a preliminary calendar of events Development of a package of documents regulating the activities of each individual event Organizing a satisfaction assessment for each event

[1]The scale is from 1 to 4 : 1 - low importance, 2 – medium, 3 - moderate, 4 – high importance

no	Indicator	Overall importance level of the capacity upgrade indicator[1]	2022	Benchmark	Planned activities
	ii. Of them established scientists			7 18	Evaluation of the effect of realized mobility through measurable indicators
5	Number of mentorships of young scientists	4	3	8	Develop rules for mentoring
6	Number of articles a. Number of articles in Scopus: total for both priority areas + by Q1,2,3,4 b. Number of articles on the Web of Science: total in both priority areas + by Q1,2,3,4 c. Number of articles in Scopus or Web of Science: total in both priority areas + by Q1,2,3,4 d. Number of joint articles written with a participant from a partner university: total in both priority areas + by Q1,2,3,4 e. Number of joint articles with the business (Bulgarian or abroad) + by Q1,2,3,4 f. Number of joint articles with organizations from the non-governmental sector	4		8 6 4 4 3	Development of a package of documents regulating each of the activities Embedding research based teaching as an element of educational activity
7	Number of attracted postdoctoral fellows	4	3	5	Preparation of information materials Preparation and holding of promotional events Preparation of content of research programs for postdoctoral students
8	Number of attracted young scientists to carry out a scientific task	4		3	Preparation of information materials Preparation and holding of promotional events Preparation of content of scientific programs for a young scientist

no	Indicator	Overall importance level of the capacity upgrade indicator[1]	2022	Benchmark	Planned activities
9	Number of attracted doctoral students to carry out a scientific task	4		4	Preparation and holding of promotional events Preparation of content scientific programs for doctoral students
10	Number of attracted foreign scientists/lecturers with the help of the project	4	3	6	Preparation and holding of promotional events Preparation of scientific programs Preparation of programs for lectures or specialized courses
11	Selection of a range of journals of high scientific quality for publication	4		5	Research and selection of international journals suitable for publication of the scientific composition
12	Enhanced Research Productivity - number of supported young researchers about research articles performance	4	3	10	Preparation of proportional activities supporting the publication of articles by young scientists in indexed publications Preparation of a package of documents regulating the support for publication of articles track rules records
13	Number of new FEBA participations in networks	4	10	20	Research activities regarding the identification of relevant networks for the purpose of building networks, incl. study visits Preparation of a strategic plan and tasks supporting the networking procedure Plan for joint activities
14	Number of submitted requests for intellectual property protection	3		1	Preliminary examination of possible products subject to IPR Structuring an evaluation panel Assisting in preparation for pre-patent application Development of a package of measures for the sustainable maintenance of a patent, if one is acquired

no	Indicator	Overall importance level of the capacity upgrade indicator[1]	2022	Benchmark	Planned activities
15	Number of participations in major European conferences (EEA, etc.)	3	1	4	Preparation of promotional activities supporting participation in conferences Preparation of a package of documents regulating financial support for participation in conferences Development of a package of measures supporting presentation and publication of articles at conferences track rules records
16	Number of new projects submitted with the support of twin4eco a. National b. International	3	2 1	8 6	Providing targeted information on open calls from international and national instruments Development of rules stimulating project preparation
17	Number of new projects approved in twin4eco priority areas a. National b. International	4	1 1	6 4	Introduction of an incentive scale for successful importers
18	Journal of Economic Boundaries and Transformation indexed on the web of science	4		1	Preparatory activities for structuring the required number of publications preceding the application Preparation of a base number of issues for WoS application Official application Development of a package of activities for the sustainability of publications
19	Policy number briefs on topics related to the priorities and based on the research in the project	4	1	3	Development of a preliminary calendar of events to be covered Policy template development brief Monitoring and evaluation of the effect of the presented topics

no	Indicator	Overall importance level of the capacity upgrade indicator[1]	2022	Benchmark	Planned activities
20	Citation count of supported articles	4		30	Preparation of a package of documents regulating incentives for the growth of the cited
21	Number of citations of the FEBA habilitated composition	4		30	Organization of citation monitoring
22	Number of attracted foreign reviewers of small - scaled research projects / articles	4		15	Information activities Preparation of a database of possible applications Preparation of a package of documents regulating the engagement of foreign reviewers
23	Number of FEBA awards received for activities supported by the project	4		6	Development of a framework of rules for various competitions relevant to the objectives of the project Information campaign to attract potential candidates Development of an incentive package for participation Develop rules to incentivize winners
24	Popular science and media articles and interviews related to the project and project priorities	3		30	Development of a preliminary calendar of events to be covered Develop a possible format for articles and interviews Monitoring and evaluation of the effect of the presented topics Creation of a database of broadcast interviews and media appearances
25	Independent assessment of scientific and educational activity	4		1	Introduction of related criteria for categorization of scientific personnel