



EKTU - The future begins today

# ACTIVITY REPORT NJSC «D.Serikbayev EKTU» for 2023

Chairman of the board-rector  
Rakhmetullina S.Zh.

Ust-Kamenogorsk, 2024



# Academic ecosystem

 Contingent

 Partners

 EP

 Staff

 Infrastructure

**The total contingent - 5,995 people**

**State scholarship -2444**

**Paid tuition-2344**

**LEO – 304**

**College - 903**

For undergraduates and doctoral students -9.5 %

EP total -83:

Base -76

Innovative -7

JEP/TDP – 12

Bachelor's degree-2

52 % of OPS in the fifth best "Atameken"

MOOC: 21 online courses on the Open edX platform

Microqualification: 18 EP -681 .

Academic mobility training:

internal - 90, external - 17

Competence and Technology Transfer Center - 12

Professional development - 205 people (53%)

Scholarship holder "Bolashak" - 7 people.

Branches in production -5

Private investments -305 million tenge



**Employment opportunities – 96 %**



Settling down -48%

Production workers -21%

PhD defense-17 people.

IELTS, TOEFL -30 people.

Foreign scientists -33 people

# THE UNIVERSITY TODAY

## EKTU in international rankings



901-950

Top- 10 in RK



301-350

Top- 12 in RK



1201+

Top- 8 in RK



Teaching  
Employability  
Environmental impact



850

Top- 3 in RK



100

N°1 in RK



The percentage of EP included in the top five- 52%



International accreditation of educational programs ASIIN – 10



International certification CMK ISO 9001, CMPK ISO 37001.

Part of an international initiative CDIO

# STRATEGIC DEVELOPMENT PROGRAM 2023-2029

The priority direction of development is "Academic excellence"

THE GOAL - Advanced training of engineers capable of creating and developing new technological developments to achieve international leadership.

## ACHIEVING A HIGH ACADEMIC AND EMPLOYER REPUTATION

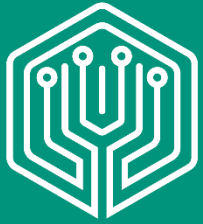
1. Implementation of the graduate model
2. Updating the educational trajectory
3. Involving students in educational processes and projects
  - QS WUR – TOP – 800
  - JEP/TDP with partner universities from among the TOP – 700 of the QS rating, innovative EP – 22 %
  - Foreign academic mobility of students– 0,3 % (17 people)
  - MOOC courses – 33. 0,3

## IMPROVING THE LEVEL OF KNOWLEDGE OF SPS

1. Improving the pedagogical and methodological competencies of teachers
2. Improving the professional competencies of the SPS through an internship
3. Involvement of foreign experts in conducting classes
  - Teaching staff teaching in English – 11% (44 people)
  - Advanced training and foreign internship of Teaching staff – 53% (205 people)
  - Involvement of foreign experts in teaching – 8.5% (33 people)

## EQUALITY AND ACCESSIBILITY

1. Implementation of the project «Network Engineering School «EKTU Educational Academy»
2. Formation of infrastructure
3. Creating conditions for internationalization of education
  - Network engineering school “EKTU Educational Academy” - 141 people.
  - “Leaders of Engineering Education” of students of the LIO program - 95 people.
  - students from other regions of the Republic of Kazakhstan - 30%
  - Masters and doctoral students from the total contingent - 15 %
  - foreign students in the university from the total number of students - 2,5 % (128 people).
  - listeners of non-formal education programs of digital literacy at the age of 6-74 years - 37 people.
  - use of meta-learning, flipped classroom,
  - case studies
  - integrated iGPA



D. Serikbayev

# EKTU

## INCOME FROM R&D

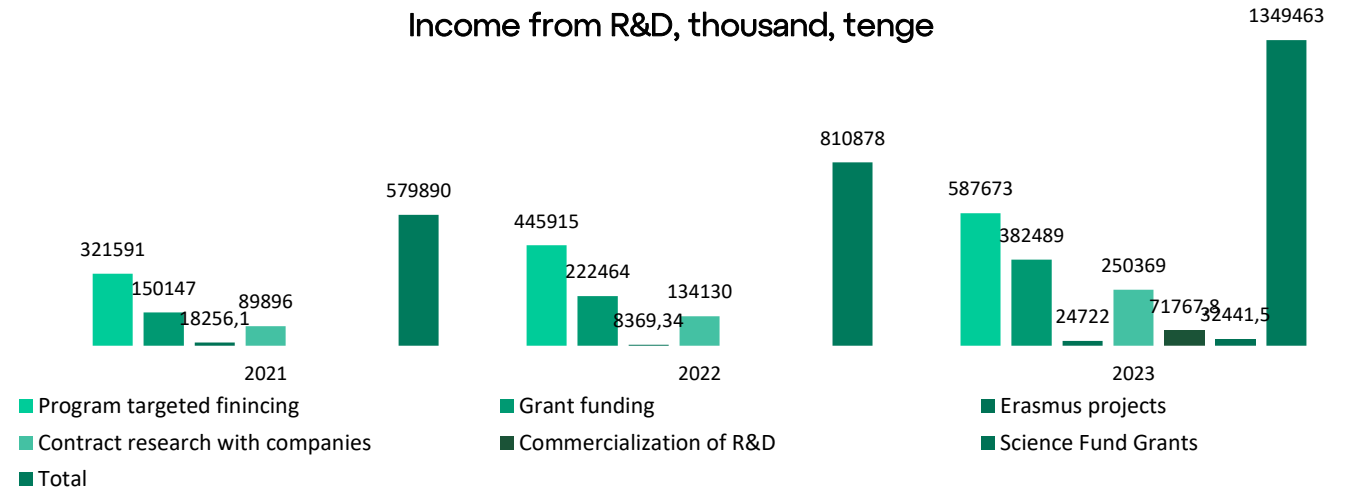
### 25% BUDGET SHARE FROM SCIENCE

R&D budget structure: contract research on orders from enterprises, program-targeted financing (MSaHE, Ministry of Agriculture, MEaNR), Grant funding, commercialization of R&D (World Bank Grant, Science Foundation JSC), European Union

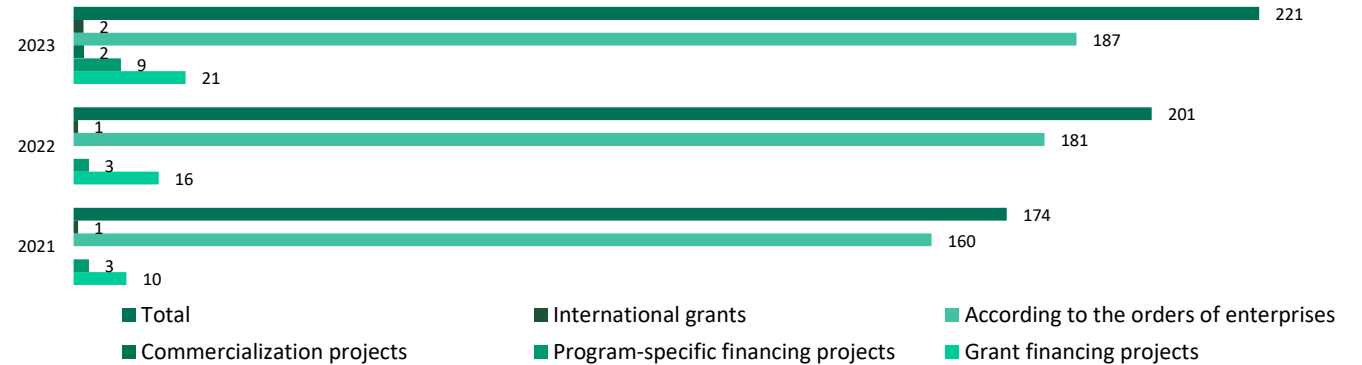
Number of scientific projects, commercialized scientific projects, Erasmus projects

Volume of investments in the scientific sphere

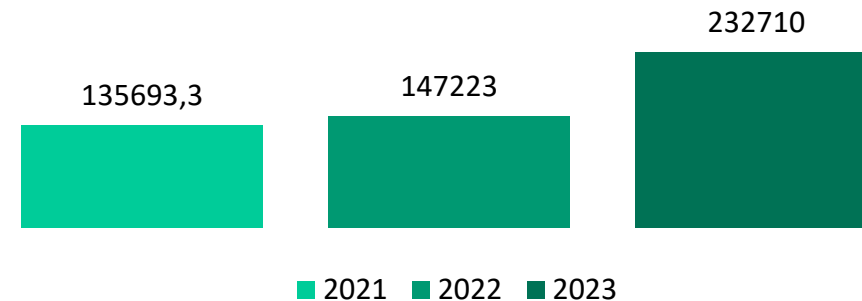
### Income from R&D, thousand, tenge

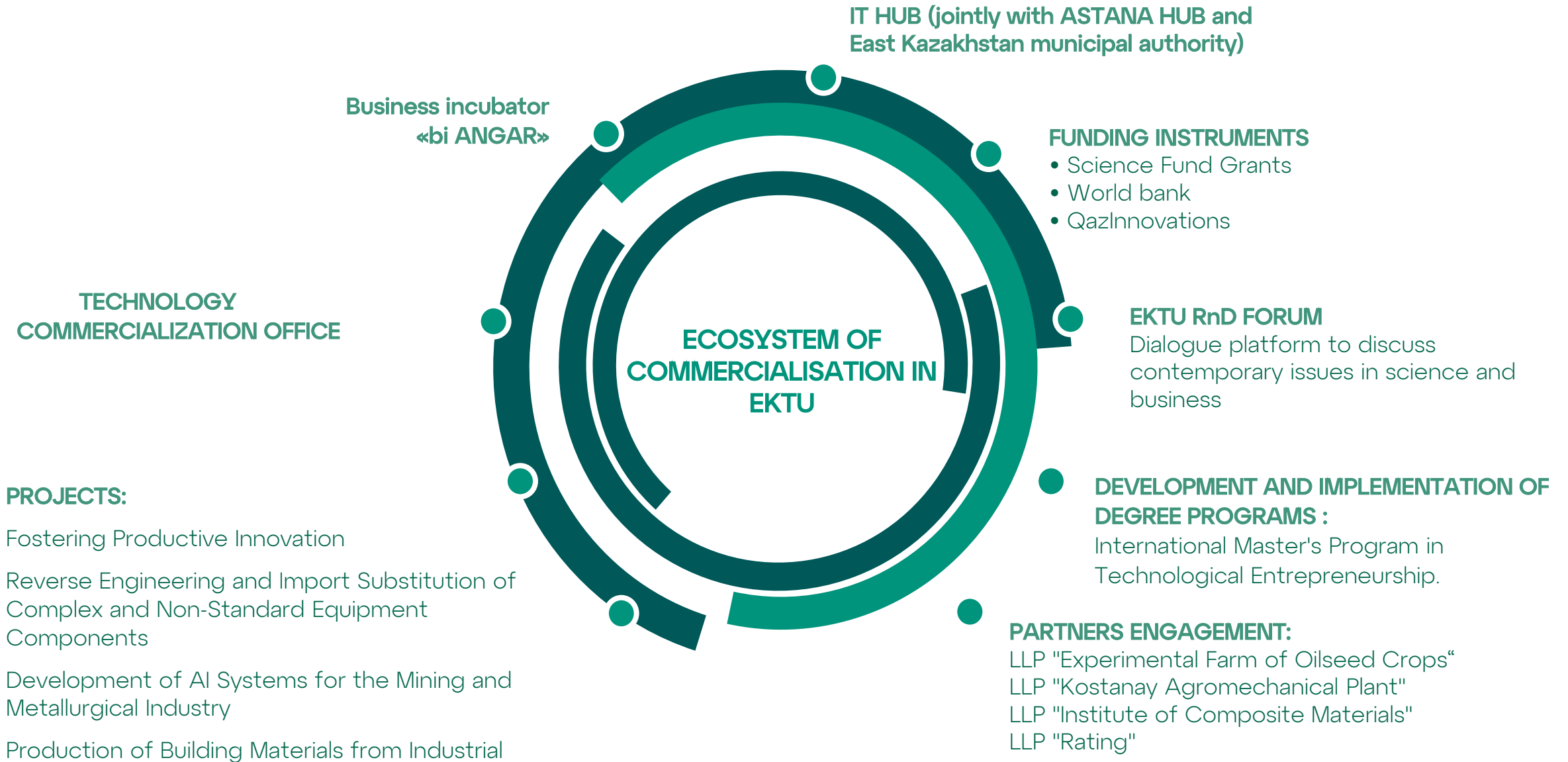


### Number of projects



### Investments in research and development infrastructure, thousand, tenge





**SoP office according to the principle of the Office of Open Science** - a single window for processing all scientific tasks, consultations and support for students, teachers, and scientists.

**Structure:**

Sector 1: national projects

Sector 2: international projects

**Tasks:**

- The full cycle of work on the project
- Formation of teams,
- Preparation of accompanying documents for the preparation of applications;
- Advising beginners and experienced applicants;
- Preparation of contractual documentation,
- Project implementation support, including the purchase of services, equipment and materials;
- Support of legal protection and protection of intellectual property results;
- support for the preparation of reports.

**Research office**

**1 block**

**Formation of research potential.**

Coordination of youth science, student scientific communities and events, implementation of IROS.

**2 block**

**Ensuring the effectiveness and productivity of research activities.**

Growth of publication activity, expansion of areas and increase in the rating of scientific journal, increase in the base of intellectual property objects

**Segmentation based on the principle of «lean» science management**

**REFUSALS**

Reasons for rejecting applications - corrective work – preparation of new applications

**«Experienced» applicants - sustainable teams**

- Portfolio diversification - interdisciplinarity;
- New contests and work with new partners;
- Difficult level – flagship projects;
- Transition to the category of "experts and mentors", shared best practices, recognition at the national and international levels, brand formation.

**NEWCOMER**

- Incentive and motivation system
- Turnkey support
- Seminars and trainings, video courses
- Handbook-guide for those who want to do science

**REGION**

### Program-targeted funding:

Development and implementation of supersonic arc metallization technology for hardening and restoration of agricultural machinery parts

Study of avalanche activity in the East Kazakhstan region for the development of monitoring systems and scientific justification of their location

### Scholarship Funding:

- Machine learning methods in tasks of automatic control and inertial navigation of mobile robots

- Development of new robot control algorithms for 3D scanning and additive microplasma spraying technologies

- Program complex of diagnostics of clinical and hematological syndromes for electronic health passport

- Forecasting and assessment of prospectivity of rare-metal mineralization of batholithic belts of East Kazakhstan (North-West Kalba and adjacent areas of the Ore Altai)

## KEY SCIENTIFIC PROJECTS

**COUNTRY**

### Mega grants in consortium:

- Integrated development of a sustainable construction industry: innovative technologies, production optimization, efficient use of resources and creation of a technology park
- Creation of construction and technical engineering center to provide a full cycle of accredited services to the construction, road-building sector of the RK

### Program-targeted funding:

- Creation of a national model of engineering education in the context of implementation of sustainable development goals
- Scientific assessment of investment attractiveness of Kazakhstan's structures promising to reveal mineral deposits
- Development of scientific and methodological approaches to the introduction of remote sensing technologies for improving agricultural management
- Development and implementation of geo-information support for “smart” agriculture to improve agro-industrial complex management

**WORLD**

- Development of innovative curricula and modules in circular economy and sustainable development
- Development of a master programme in the management of industrial entrepreneurship for transition countries



### BUSINESS INCUBATOR «bi ANGAR»

- creation of a community of young startups among the youth of East Kazakhstan
- region creation of high-tech projects, their integration into the business environment, organization of work on commercialization of research results

### TECHNOLOGY COMMERCIALIZATION OFFICE

- search and preparation of R&D commercialization projects
- IP audit, marketing research, evaluation and promotion of
- communication and search for customer enterprises, expansion of the list of services provided in R&D
- search and preparation of applied research projects

### FINANCING TOOLS

- Research and Development – Grant financing of the Ministry of Internal Affairs of the Republic of Kazakhstan
- R&D – Program-targeted financing of the Ministry of Internal Affairs of the Republic of Kazakhstan, MGEPR of the Republic of Kazakhstan, Ministry of Agriculture of the Republic of Kazakhstan
- Commercialization - The World Bank
- Production - Kazzink LLP, Experimental Oilseed Farming LLP, Kostanay Agro-Mechanical Plant, National Scientific Center of Traumatology and Orthopedics named after Academician Batpenov N.D., NJCS Semey Medical University

### Events

- EKTU RnD FORUM – a dialogue platform for discussing modern problems in science and business

# COMMERCIALIZATION

## SUCCESSFUL CASES

Together with the N.D.Batpenov National Research Medical Center, the technology of manufacturing more than twenty different types of implants for osteosynthesis was worked out. Two types of implants, an interbody cage for spinal stabilization and a plate for the treatment of fractures of the acetabulum of the pelvic bone, complete the stage of clinical research.

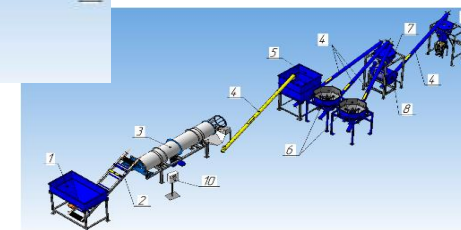
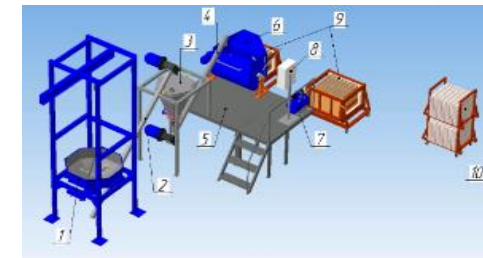
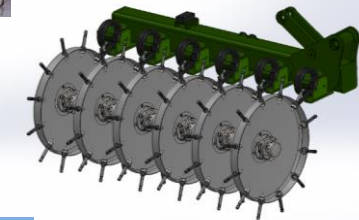
Semey Medical University has completed work on the manufacture of a plate for the treatment of complex fractures of the humerus and a robotic device "Hexapod" designed to reposition fragments of the ankle joint pylon. The developed device and the plate are undergoing clinical trials.



The project "Stimulating productive Innovation" funded by the World Bank. A consortium has been created in partnership: D.Serikbayev EKTU; LLP "Experimental farm of oilseeds", LLP "Kostanay agro-mechanical plant. Work is underway on import substitution of a complex for applying liquid fertilizers to the root system of oilseeds.



The project "Production of building materials from industrial waste" funded by JSC "Science Foundation" in partnership with LLP "Institute of Composite Materials". Work is underway to organize the production of building materials based on anhydrite binder from industrial waste





Lu Ban Workshop was established on December 9, 2023.  
Lu Ban Workshop is a unique platform for applied training  
in automotive service and traffic management

Ensuring high quality academic education



- ✓ Application of the teaching method of an Innovative Engineering Practice Project (EPIP)
- ✓ Using advanced Chinese equipment
- ✓ The exchange of outstanding achievements of both countries in the field of higher engineering education.

The scientific and research aspect



- ✓ Search for innovative solutions to optimize traffic flows for high-speed highways
- ✓ Materials science research for the development of new generation materials for electric vehicle batteries.
- ✓ Development of new anodes for new generation Li-ion batteries, providing ultra-high capacity.

## STRUCTURE

- Fuel, hybrid and electric vehicle service technology sector;
- The sector of SMART car technologies.

## FEATURE

As a competence center for intelligent transport systems, it is a unique laboratory consisting of full—scale samples of peripheral equipment and software.

## PRIVILEGE

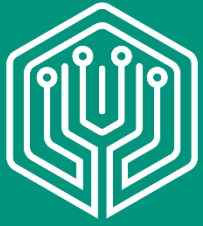
Lu Ban Workshop is the locomotive of the country's economic development, the basis of its transport system

## PARTNERS



### TIANJIN PROFESSIONAL INSTITUTR

The leading higher education institution in Tianjin, offering vocational education and training programs in various fields with an emphasis on practical training and an industry-oriented training program.



D. Serikbayev

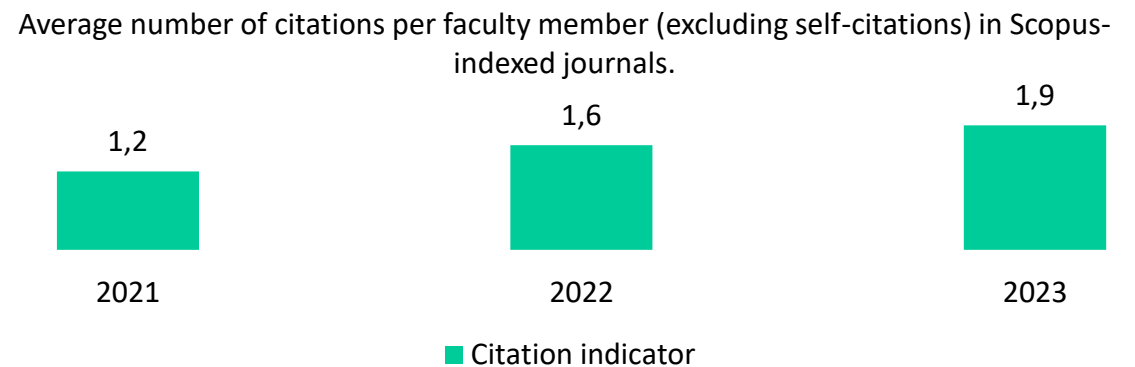
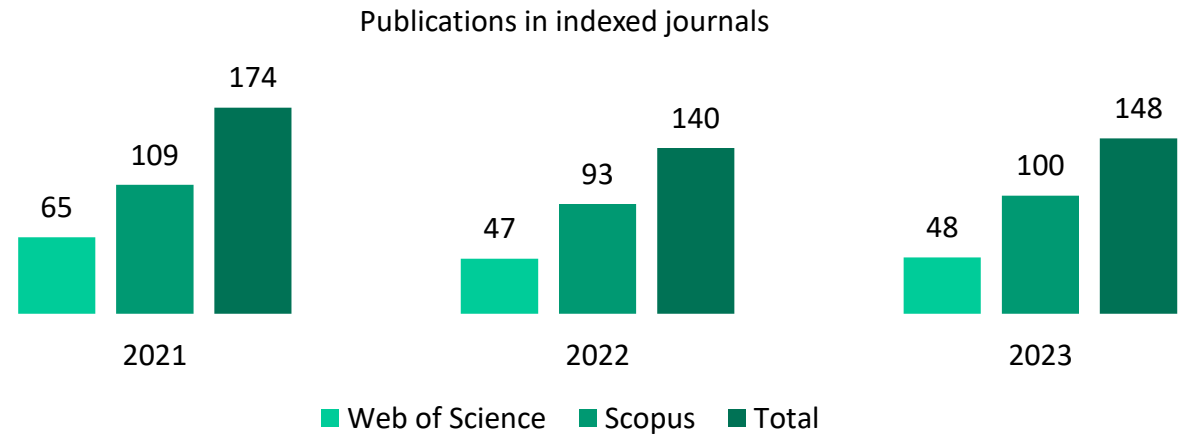
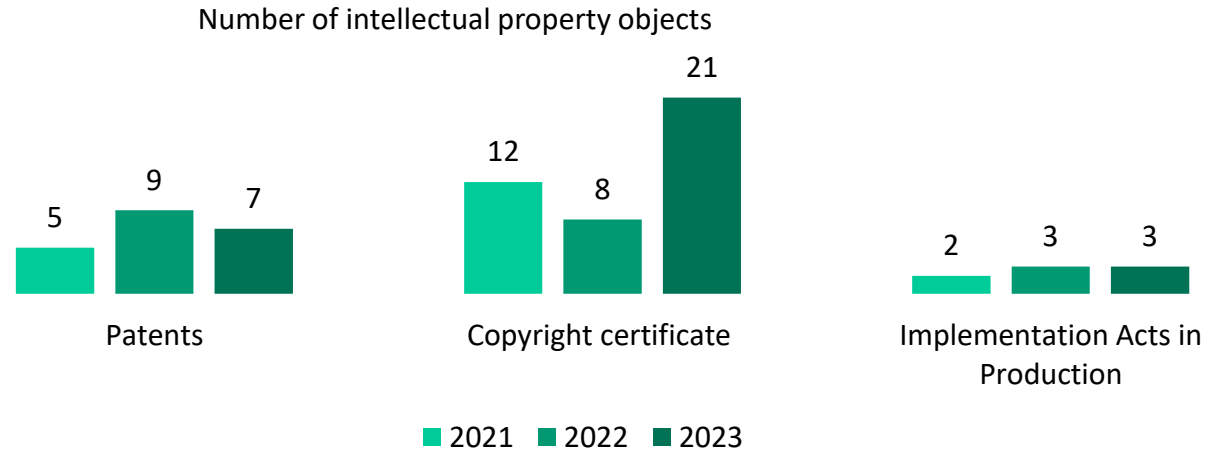
EKTU

# The effectiveness of research

## Intellectual property objects

The number of articles indexed in foreign scientific publications

The citation index of scientific articles (Scopus) per 1 NPR of the university (excluding self-citation)



# STRATEGIC DEVELOPMENT PROGRAM 2023-2029

The priority direction of development is "Scientific and technological breakthrough"

THE GOAL is to ensure a leading position in science among the country's technical universities in terms of the share of publications and scientific results in priority areas of scientific and technological development of the world economy.

## INCREASING THE SCIENTIFIC POTENTIAL AND RESEARCH PRODUCTIVITY OF SCIENTISTS

The number of articles and reviews of the NPR in the highly rated publications Q1, Q2 Journal Citation Reports JCR – **35**.

- Graduates who defended their doctoral dissertation in the first two years after graduation, out of the total number of graduates– **45 %**
- Teaching staff engaged in research work – **40 %**

## DEVELOPMENT OF INTERNATIONAL SCIENTIFIC RESEARCH PROJECTS AND INTERDISCIPLINARY COLLABORATIONS

Scientists who have completed internships in foreign scientific centers, universities from the total number of teaching staff– **22 %**

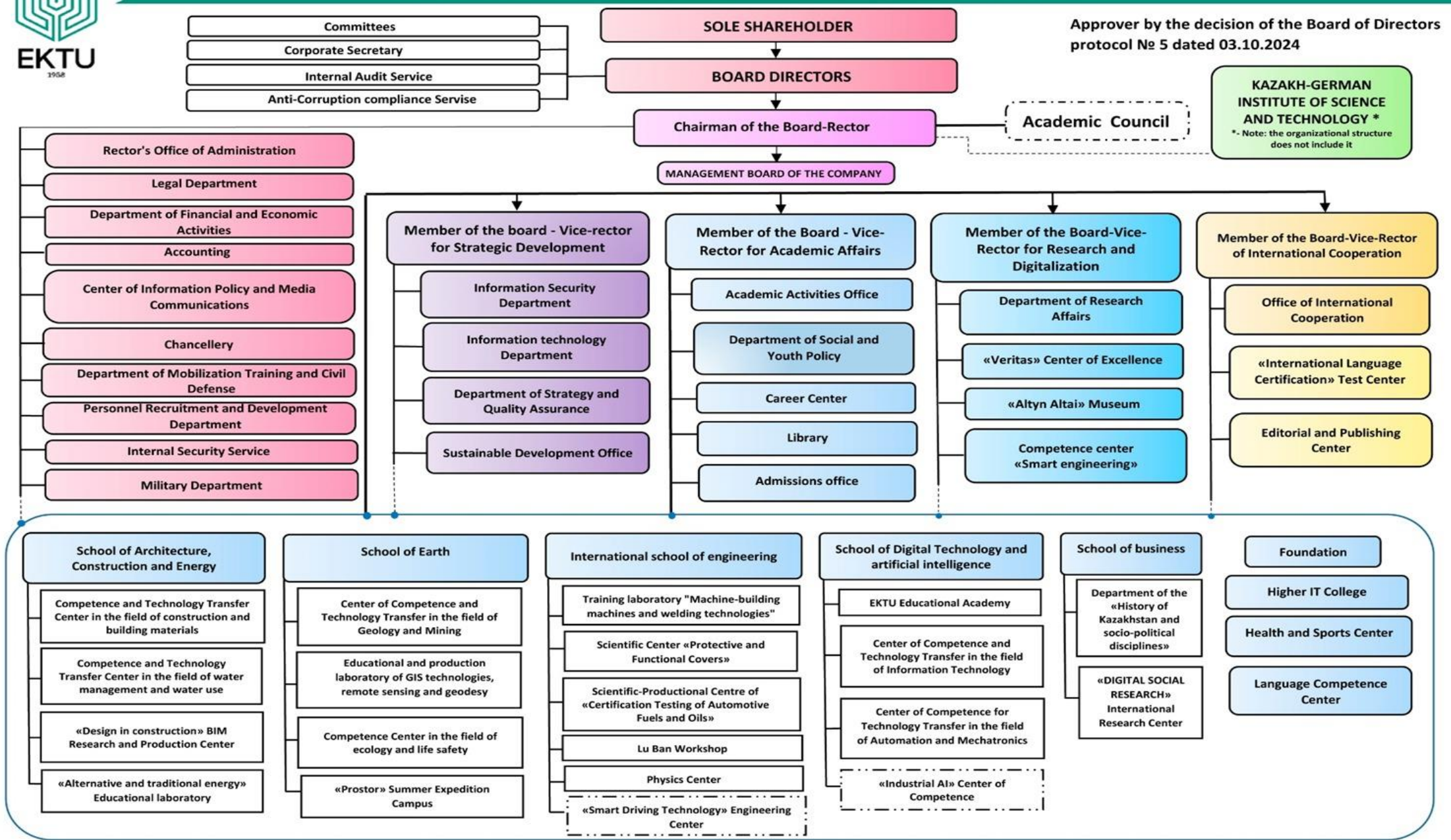
- International projects and programs from the total number of implemented projects – **15 %**
- The number of priority interdisciplinary research areas and groups in the context of individual countries – **19**.

## DIVERSIFICATION OF SOURCES FINANCING OF SCIENTIFIC RESEARCH AND STRENGTHENING SCIENTIFIC AND INNOVATIVE INFRASTRUCTURE

Projects funded by LEO and business funds from the total number– **35 %**

- Financial resources spent on updating educational and scientific equipment– **18 %**
- The number of commercialized research projects– **5**.

# ORGANIZATIONAL STRUCTURE OF THE NJC «D.Serikbayev EKTU»





D. Serikbayev

**EKTU**

## Analysis of staff numbers for the period from 2021-2023.

Category	2021		2022		2023	
	Number of units	%	Number of units	%	Number of units	%
Total, units	1 092	100%	1 098	100%	1 068	100%
Administrative and managerial staff	103	9,4%	97	8,8%	94	8,8%
Teaching staff	571	52,3%	591	53,9%	571	53,5%
Training and support staff	221	20,2%	175	15,9%	183	17,1%
Other staff	197	18,1%	235	21,4%	220	20,6%

## Average monthly labor costs per employee for the period from 2021-2023 (thousand tenge)

Name	2021	2022	2023
The average monthly salary per 1 person at the university	203,0	261,51	306,21
Administrative and managerial staff	205,3	288,33	274,39
Teaching staff university	279,0	308,9	414,68
Teaching staff college	122,0	135,6	147,68
Training and support staff	120,4	180,9	186,86
Other staff	106,8	145,07	168,21

# BUILDINGS

There are 11 educational and laboratory buildings and the Summer Expedition Campus "Prostor" with a total area of 48,838 square meters and 3 dormitories for 1,453 places on the balance sheet

N° п/п	Name/purpose of the land plot	Address	Year of construction	Total area, sq m
1	Main building (consists of 5 blocks)	Ust-Kamenogorsk, Serikbayev str. 19	1965	30 719,2
2	Academic Building N° 1	Ust-Kamenogorsk, Protozanov str., 69	1957	3 292,7
3	Laboratory building N° 2	Ust-Kamenogorsk, Nazarbayev ave., 4	1957	362,7
4	Academic Building N° 3	Ust-Kamenogorsk, Sholokhov str, 49	1960	1 295,5
5	Academic Building N° 5 (military Department)	Ust-Kamenogorsk, A. Kashaubaev str., 7/2	1954, 1960	2 541,2
6	The building of the military department with a garage	Ust-Kamenogorsk, A. Kashaubaev str., 7/1	1988, 1990	589,4
7	Dormitory N° 1	Ust-Kamenogorsk, Serikbayev str., 19a	2015	7 639,0
8	Dormitory N° 2	Ust-Kamenogorsk, Mendeleev str, 3	1956	1 874,8
9	Dormitory N°3	Ust-Kamenogorsk, Serikbayev str., 41	1968	4 074,9
10	Educational and production complex "Energy"	Ust-Kamenogorsk, Serikbayev str., 49	1987	1 039,1
11	Auxiliary premises (workshops, garages, etc.)	Ust-Kamenogorsk, Protozanov str., 69	1958	635,7
12	Summer expedition campus "Prostor"	P. Novaya Bukhtarma	1975-2020	2 362,5
	<b>TOTAL</b>			<b>56 426,7</b>

# INFORMATION ON LAND PLOTS

NJSC "D. Serikbayev East Kazakhstan Technical University leases 22 land plots with a total area of 51.3198 hectares with a lease amount of KZT 6,921,986.79 per year according to agreements with the State Institution "Department of Land Relations, Architecture and Urban Planning of Ust-Kamenogorsk" and State Institution "Department of land relations of the Altay region"

N <sup>o</sup> п/п	Name/purpose of the land plot	Address	The square, Hector	The rental period	The amount of rent per year
1	Land plot: LEK "Prostor"	P. Novaya Bukhtarma	11,2000	9.08.2021 - 09.08.2046	24 620,0
2	Land plot: LEK "Prostor"	P. Novaya Bukhtarma	0,1596	19.08.2021 - 19.08.2046	350,9
3	Land plot: LEK "Prostor"	P. Novaya Bukhtarma	0,1550	19.08.2021 - 19.08.2046	340,47
4	Land plot: LEK "Prostor"	P. Novaya Bukhtarma	0,1500	19.08.2021 - 19.08.2046	330,03
5	Land plot: LEK "Prostor"	P. Novaya Bukhtarma	0,2000	19.08.2021 - 19.08.2046	440,05
6	Land plot: Main building	Ust-Kamenogorsk, Serikbayev str., 19	18,0418	30.06.2021 - 30.06.2070	3 125 162,8
7	Land plot: Main building	Ust-Kamenogorsk, Serikbayev str.,19	0,2007	02.07.2021 - 02.07.2070	34 765,24
8	Land plot: Main building	Ust-Kamenogorsk, Serikbayev str.,19	0,1579	02.07.2021 - 02.07.2070	27 350,87
9	Land plot: Main building	Ust-Kamenogorsk, Serikbayev str.,, 19a	0,4079	30.06.2021 - 30.06.2070	70 655,35
10	Land plot: Main building	Ust-Kamenogorsk, Serikbayev str., 19B	1,6462	01.01.2022 - 30.12.2070	285 134,94
11	Land plot: Dormitory N <sup>o</sup> 1	Ust-Kamenogorsk, Serikbayev str., 19a	16,2114	01.01.2022 - 28.12.2070	2 807 942,72

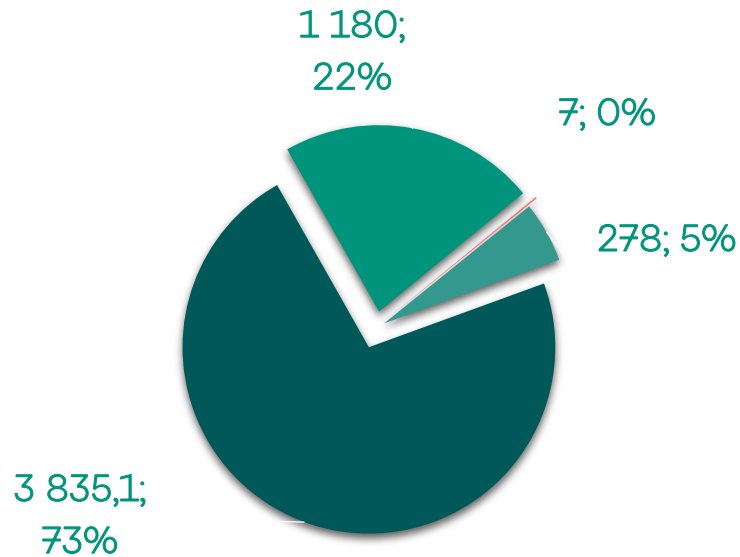


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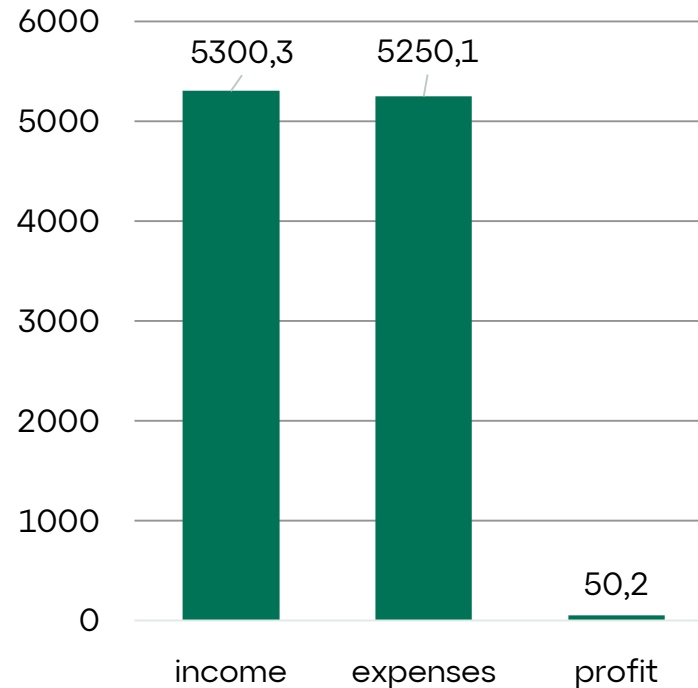
12	Land plot: Dormitory №2	Ust-Kamenogorsk, Mendeleev str.,3	0,2748	02.07.2021 - 02.07.2070	42 207,52
13	Land plot: Dormitory №3	Ust-Kamenogorsk, Serikbayev str., 41	0,4893	01.01.2022 - 30.12.2070	84 755,10
14	Land plot: Garages	Ust-Kamenogorsk, Serikbayev str., 49	0,2175	02.07.2021 - 02.07.2070	33 404,28
15	Land plot: Academic building №3	Ust-Kamenogorsk, Sholokhov str., 49	0,2075	01.01.2022 - 30.12.2070	31 867,47
16	Land plot: Academic building №3	Ust-Kamenogorsk, Sholokhov str., , 49	0,0451	01.01.2022 - 30.12.2070	6 926,32
17	Land plot: Academic building №5 (military Department))	Ust-Kamenogorsk, Protozanov str., 7/2	0,5151	30.06.2021 - 30.06.2070	89 224,66
18	Land plot: Academic building №.5 (military Department)	Ust-Kamenogorsk, Protozanov str., 7/2	0,2876	30.06.2021 - 30.06.2070	49 817,34
19	Land plot: Academic building №1	Ust-Kamenogorsk, Protozanov str., 69	0,6294	02.07.2021 - 02.07.2070	109 023,56
20	Land plot: Parking	Ust-Kamenogorsk, Protozanov str., 69	0,0781	01.07.2021 - 01.07.2070	90 188,98
21	Land plot: Laboratory building №2	Ust-Kamenogorsk, Nazarbayev ave., 4	0,0233	30.06.2021 - 30.06.2070	4 035,77
22	Land plot: Office housing	Ust-Kamenogorsk, Nazarbayev ave., 51	0,0216	02.07.2021 - 02.07.2070	3 442,42
<b>Total</b>			<b>51,3198</b>		<b>6 921 986,79</b>

Total revenues of 5 billion 300.3 million tenge

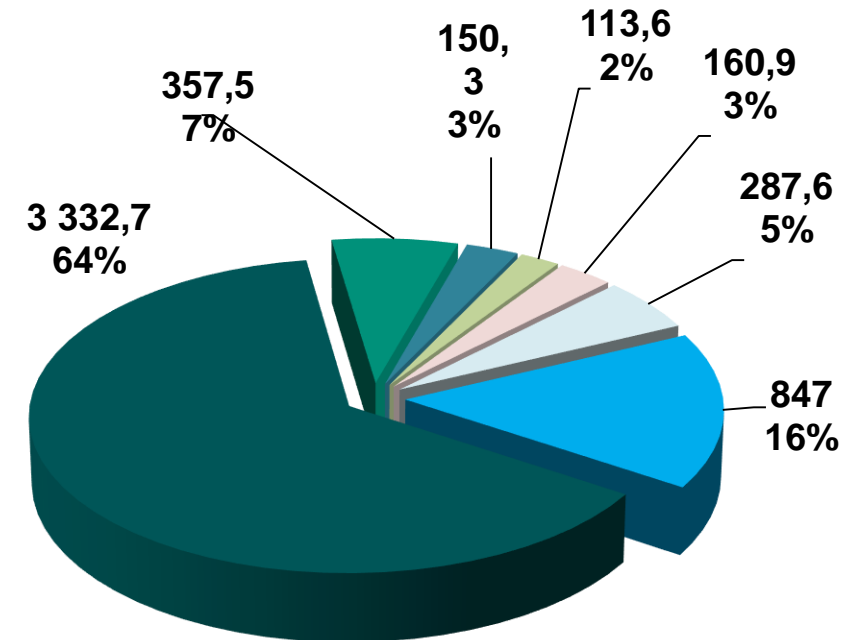


- Educational activities 3 835,1 million tenge
- Scientific activity 1 180 million tenge
- Gratuitously received assets 7 million tenge
- other income 278 million tenge

million tenge



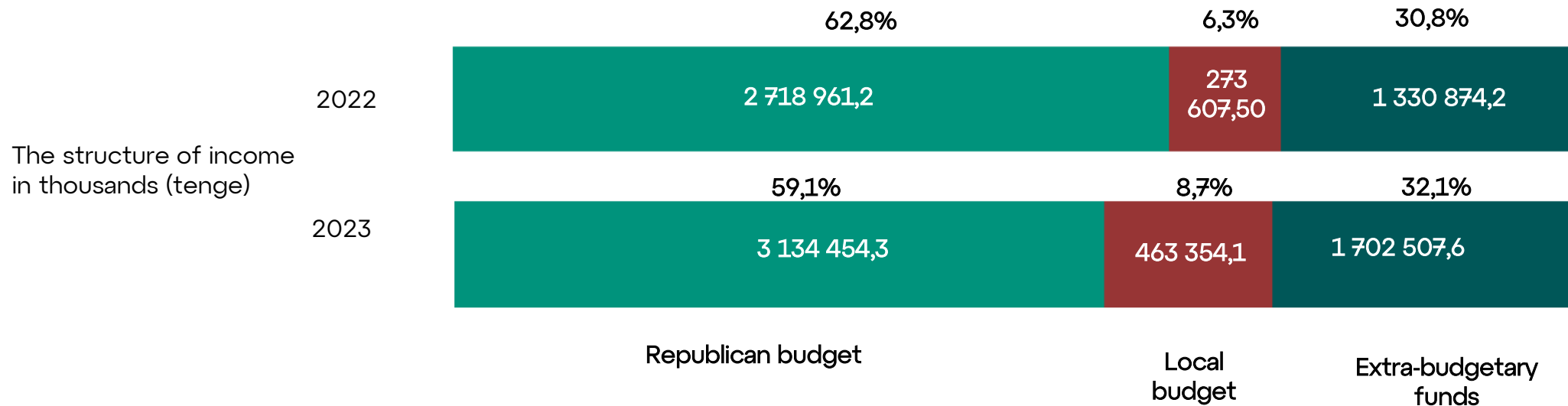
Total revenues of 5 billion 250 million tenge



- the wage fund 3 332,7 million tenge
- taxes and other payments 357,5 million tenge
- Purchase of materials, stocks 150,3 million tenge
- Utilities 113,6 million tenge
- Current repairs 160,9 million tenge
- Depreciation 287,6 million tenge
- others 847 million tenge

# DIVERSIFICATION OF FUNDING SOURCES

- Unique EP commissioned by enterprises
- International students
- Non-formal education
- Training in unique competencies based on CCT
- Expert services
- Scholarships from various funds and programs
- Business R&D financing
- IP Monetization



# ASSESSMENT OF THE IMPLEMENTATION OF THE DEVELOPMENT PLAN for 2023

TOTAL- 32 KEY INDICATORS

**Task № 1:** 21 indicators: development of own information educational infrastructure, provision of highly qualified teaching staff, development of Competence Centers

**Task № 2:** 11 indicators: promotion of innovative technological solutions to the global market

## KEY INDICATORS

FULFILLMENT (100%) - 29 INDICATORS

OVER-FULFILLMENT (over 100%) - 3 INDICATORS



### Building up the pool of scientists

- Increasing the number of undergraduates and doctoral students

### Increasing the contingent

- Quotes of state scholarships for technical areas by Region
- Increase in the cost of a Master's degree scholarships
- Recruiting international students
- Attracting students from other regions of the Republic of Kazakhstan
- The need to organize the enrollment of students in TaPE of reduced form of education in the winter period
- Attracting students to the Lu Ban Workshop, creating an IWP

### Improvement of academic and scientific infrastructure (buildings and laboratories)

- Search for mechanisms and investors for the construction of new buildings
- Construction of the «SMART DRIVING TECHNOLOGY» center
- Creation of a mechanism for financing the construction of educational buildings through SIP

### Diversification of funding sources

- Commercialization of research results
- Attracting private investment
- International projects and foundations

**THANK YOU FOR YOUR ATTENTION!**

