ANNUAL REPORT 2014 NCRD

The National Centre
for Research and Development

The National Centre
for Research and Development

NCRD IN NUMBERS

620 million EUR
signed contracts — valued

3 351 monitored projects

214 million EUR
beneficiaries' own contribution

NCBR

4 862 submitted applications

5,3 billion EUR
total value of served projects

46 on-going programmes

700
signed contracts

51
organised competitions

1,3 billion EUR
in NCRD's 2015 budget

1,26 billion EUR
in NCRD's 2014 budget

14 939
acquired reviews

197 million EUR
value of entrepreneurs' own contribution

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Ladies and Gentlemen,

It is with great satisfaction that once again I present to you the annual report, showing the activities of the Centre in 2014. It was a year full of intense work, but also amazing outcomes. We planned the execution of programmes under the 2014-20 EU Financial Perspective and the NCRD will be managing 26 billion PLN of its funds. The key project will be the Operational Programme: Smart Growth (OP: SG) through which we want to encourage entrepreneurs to increase their funding for R&D, as well as improve the cooperation between science and business.

We are increasingly active in our work with venture capital funds. Under BRIdge Alpha we signed 10 contracts starting up investment vehicles, aimed at seeking out and supporting innovative ideas at the early stages of development. Moreover, we are getting ready to supply the entrepreneurs with the tools they have been waiting for most impatiently - we offer the so-called fast-track for OP: SG, with the decision about funding being returned in 60 days. All this is possible thanks to the commitment of the 300 people crew of the centre, whom I am very grateful for everything they have done.

The following pages of this report showcase the key areas of action of the NCRD as well as selected projects of our beneficiaries. We believe in the creativity of Polish entrepreneurs and scientists. With an appropriate support, they can create world-class innovations. We know that. I am immensely proud that the NCRD can support the best of the best and that together we can change the reality

Enjoy!

prof. Krzysztof Jan Kurzydłowski

NCRD – THE PARTNER OF INNOVATION

The National Centre for Research and Development was commissioned in order to perform tasks related to: scientific, techno-scientific and innovative policies adopted by the Polish government. The main duty of the Centre is to support Polish enterprises and scientific units in planning and implementing modern solutions and technologies enabling innovation, and thus, competitiveness of the Polish economy.

NCRD encourages the commercialisation of research results and knowledge transfer between science and the economy. It manages applied research programmes and coordinates project dealing with security and defence of the country. It makes sure scientists have comfortable working environment both in the country and abroad.

The Centre funds the most valuable projects, selected through the competitions, and then offers care throughout the projects' life. Over 70% of NCRD's budget comes from EU Operational Programmes, and the Centre acts as an intermediate body for the allocation of funds. In the EU 2014-2020 Financial Perspective, the NCRD will deal with three operational programmes: Smart Growth (continuing from OP: IE), Knowledge Education Development (continuing from OP: HC) and a new one, Digital Poland, which will support programmers in solving various social and economical issues.

The NCRD works within the meaning of the Act on National Centre for Research and Development dated 30 April 2010 as an agency under The Ministry of Science and Higher Education. According to the NCRD's mission, we partner with every entrepreneur and scientist with a good and courageous idea that can increase the innovativeness of our economy.

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NCRD – CALENDARIUM

CONTRACT SIGNING FOR CUBR PROGRAMME

JANUARY

CuBR programme was launched as a result of co-operation between NCRD and KGHM Polska Miedz S.A. 'Sustainable development of non-ferrous metals industry with application of innovative technologies' was set up thanks to the first such deal in Poland, initiated by the enterprise. Each partner allocated 100 million PLN for R&D and result transferring efforts.

CONTRACT SIGNING BETWEEN NCRD, PITANGO VENTURE CAPITAL AND INVESTING

FEBRUARY

NCRD, Pitango Venture Capital and INVESTIN signed a contract under the BRIdge VC programme, creating the biggest advanced technologies fund in Poland. Pitango is the biggest venture capital fund in Israel, and alongside Polish INVESTIN group, by cooperating with the Centre, started Pitango Investin Ventures (PI Ventures) investment fund managing 210 million PLN capital, half of which is supplied by NCRD.

CONTRACT SIGNING FOR INTERNSHIPS FOR STUDENTS

MARCH

47.5 million PLN was given to 17 universities all around Poland, which, jointly with variety of enterprises, organise professional internships for their students, lasting no less than 3 months. The programme, run by NCRD and the Ministry of Science and Higher Education, was available to every course, however mathematical, science and technical majors were awarded more points, as well as courses dealing with eco-innovations, renewable energy sources, and environmental management in enterprises, and technologies for natural habitat.

FAST-TRACK

APRIL

NCRD has announced the results for first application session for funding of Specific Targeted Research programmes, in its innovative form. NCRD is a first public Polish institution to introduce the new support programme, which reduces red-tape and is set to give a decision within 60 days from applying. This form of competition (used during 1.4 of Operational Programme: Innovative Economy) is an answer to the calls from entrepreneurs, and is helping the Centre switch to the new financial perspective.

GEKON

MAY

The National Centre for Research and Development and the National Fund for Environmental Protection and Water Management announced the results of the 1st competition under GEKON, supporting the creation of pro-ecological technologies. 80% of projects in the competition are executed by scientific-industrial consortia. Total funding for R&D and its implementation supplied by both institutions was 400 million PLN.

STRATEGMED – 500 MILLION FOR INNOVATIVE MEDICINE

MAY

NCRD has finalised the 1st competition in the 'Prevention and treatment of diseases of affluence' programme (STRATEGMED). For projects dealing with oncology, cardiology, neurology and regenerative medicine the Centre allocated 310 million PLN. In the 2nd competition, the funding was additional 220 million PLN.

INNOVATIVE ROAD CONSTRUCTION

JUNE

The Centre and the General Director of National Roads and Motorways signed a contract dealing with the support of R&D in the field of road construction. It's directed at scientists and scientific units. The goal of the project is to create and implement research on increasing the road safety, improve traffic management systems, as well as designing optimal standards for planning, design, technology and construction and maintenance of roads in Poland, for which both institutions allocated 50 million PLN.

AMENDMENT TO THE LAW ABOUT HIGHER EDUCATION

JULY

The lawmaker introduced, for the first time, definitions of indirect and direct commercialisation, and revolutionary mention about 'scientist's enfranchisement', giving new powers to the creators of the technology.

LAST APPLICATION SESSION FOR APPLIED RESEARCH PROGRAMME

AUGUST

The 3rd competition for Applied Research Programme has been finalised. NCD funded approximately 500 projects for 1.2 billion PLN. The programme deals with many areas of science and interdisciplinary studies.

APPLICATIONS OPEN FOR BIOSTRATEG

AUGUST

The application process for BIOSTRATEG – 'Natural habitat, agriculture and forestry' one of NCRD's strategic programmes has started. The Centre will allocate 500 million PLN for innovative research on agriculture and forestry, as well as development of green technologies.

INNOVATIVE EUROPE. FUTURE OF THE COOPERATION BETWEEN BUSINESS AND SCIENCE.

SEPTEMBER

'Innovative Europe' Conference was organised by NCRD, Intel company and PwC in Gdansk, and it was the only official event during European Forum for New Ideas. For the first time ever on such scale, 200 representatives of technology, business, science and public institutions discussed how to provide for innovative future of Polish economy in upcoming years.

DIRECTOR GRABARCZYK AMONGST NEW EUROPE 100 CHALLENGERS

OCTOBER

Leszek Grabarczyk, Deputy Director of NCRD, has been featured among 28 other Poles in a 'New Europe' project – created by Res Publica, Google and International Visegrad Fund in cooperation with Financial Times and regional institutions (incl. German Marshall Fund of the US, Lech Walesa Institute, Global Lithuanian Leaders, Sofia Platform). The project names the most interesting leaders from CEE, from different countries and professions, yet all sharing the potential to change our lives for the better.

NCRD SUPPORTS INNOVATIVE PROJECTS IMPROVING THE QUALITY OF LIFE OF SOCIETY

OCTOBER

NCRD gave 35 million PLN to institutions, firms and NGOs to work on innovative social-economic solutions in two competitions under Social Innovations. The project's scope includes social, engineering and technical sciences, as well as medicine and health.

POLISH-AMERICAN INNOVATION WEEK

NOVEMBER

NCRD and the Ministry of Foreign Affairs organised the biggest Polish scientific-economic mission in USA in the history. Over 200 Polish universities and research institutes, as well as innovative firms and public institutions took part in the event happening in the Silicon Valley. The participants from both countries partook in discussions, debates and business meetings.

THE BOARD OF NCRD WELCOMES NEW MEMBERS

DECEMBER

The Minister of Science and Higher Education approved new line-up of the Centre's board, consisting of representatives of: the President of Poland, the government, and scientific, economic and financial circles. Prof. Anna Rogut became the new President of the Board.

YOUNG LEADERS GALA

DECEMBER

36 young scientists, laureates of the 5th edition of the Leader programme, created by the NCRD, were given 40 million PLN (among themselves) from the Minister of Science and Higher Education, prof. Lena Kolarska-Bobinska. The funding will allow them to create their own research teams, that they will themselves manage.

BOARD OF NCRD

Ladies and Gentlemen,

I had the honour of taking over as the president of the board at the end of 2014. This past year had been very intense for the Board, and we managed to commence and prepare new strategic projects for R&D programmes per National Research Programme. We included the BIOSTRATEG programme in our portfolio, which has a 500 million PLN budget and deals with natural habitat, agriculture and forestry. We also plan to implement TECHMATSTRATEG, a strategic development project for R&D on modern material technologies.

With its R&D strategic programmes and several dozens various undertakings, the NCRD's portfolio constantly stimulates the innovativeness and competitiveness of Polish economy. We take pride and joy in every implementation of research results, as it proves the effectiveness of the support we offer. Such astounding outcomes stem from the good cooperation between the Centre and everybody who has joined us in stimulating the Polish economy. We are very grateful for the hard work, openness and integrity, and I hope we can continue bettering together.

Anna Rogut, DSc, President of the Board

MEMBERS OF THE BOARD

PRESIDENTS OF THE COMMITTEES

COMMITTEE ON FINANCE
ZBIGNIEW DOKURNO, DSC

COMMITTEE ON STRATEGIC RESEARCH AND DEVELOPMENT PROGRAMMES
KRZYSZTOF PIOTR WODARSKI, DSC, ENG

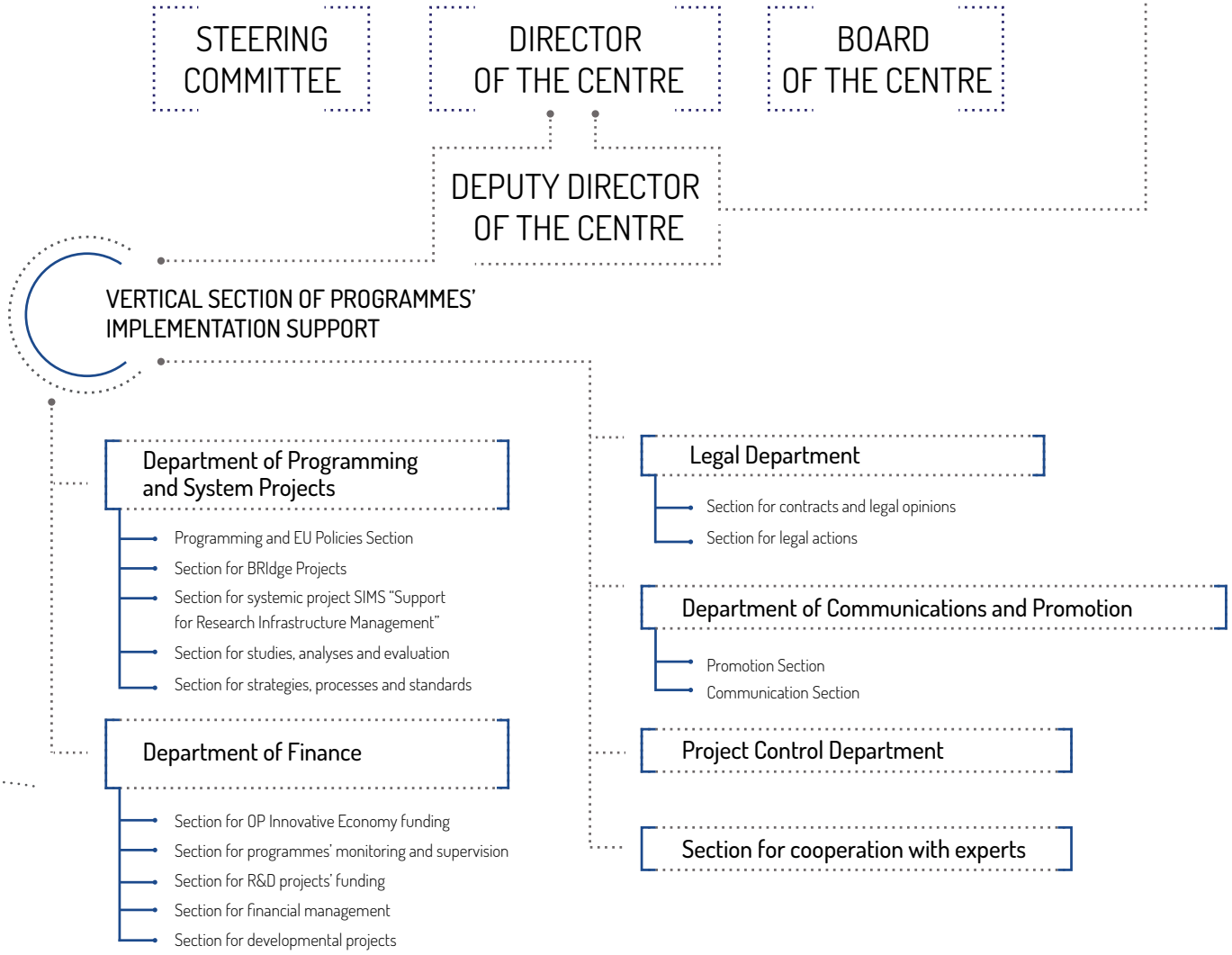
COMMITTEE ON IMPLEMENTATION OF OTHER TASKS
ANTONI WALDEMAR MORAWSKI, DSC, ENG.

APPEAL COMMITTEE
MAREK HETMAŃCZYK, DSC, ENG.

MSC. ENG. DAWID BERNY
PROF. MARCIN CHMIELEWSKI DSC
MAREK CIEŚLIŃSKI DSC, ENG.
ZBIGNIEW DOKURNO DSC
PROF. WŁODZISŁAW DUCH DSC, ENG.
LIDIA GAWLIK DSC, ENG.
PROF. LEON GRADOŃ DSC, ENG.
COL. MIROSŁAW HAKIEL (POLISH BORDER GUARD)
PROF. MAREK HETMAŃCZYK DSC, ENG.
DARIUSZ JANUSEK DSC, ENG.
PROF. JERZY JASIEŃKO DSC, ENG.
MICHAŁ JAWORSKI MSC, ENG.
DOMINIKA LATUSEK-JURCZAK DSC
MARCIN ŁATA
RYSZARD ŁĘGIEWICZ MSC, ENG
EWA MADEJ-POPIEL
PROF. ANTONI WALDEMAR MORAWSKI DSC, ENG.
GNIEWKO NIEDBAŁA DSC, ENG.
PROF. PIOTR NIEDZIELSKI DSC, ENG.
BRIGADIER GENERAL WŁODZIMIERZ NOWAK
MAŁGORZATA OLSZEWSKA
JERZY WITOLD PIETREWICZ DSC
ARTUR PODHORODECKI DSC, ENG.
IGOR RADZIEWICZ-WINNICKI DSC
PROF. ANNA ROGUT DSC, PRESIDENT OF THE BOARD
PROF. PIOTR ŁUKASZ RUTKOWSKI DSC
PROF. KRZYSZTOF STAŃCZYK DSC, ENG.
IWONA WENDEL
PROF. KRZYSZTOF PIOTR WODARSKI DSC, ENG
PROF. PIOTR WOLAŃSKI DSC, ENG

ORGANISATIONAL STRUCTURE OF NCRD

The Centre's organisational structure allows for a thorough realisation of NCRD's aims. NCRD is presided by the Director who monitors the work of three vertical sections. The direction of Centre's activities is managed and executed by the Board, supported by the Steering Committee.



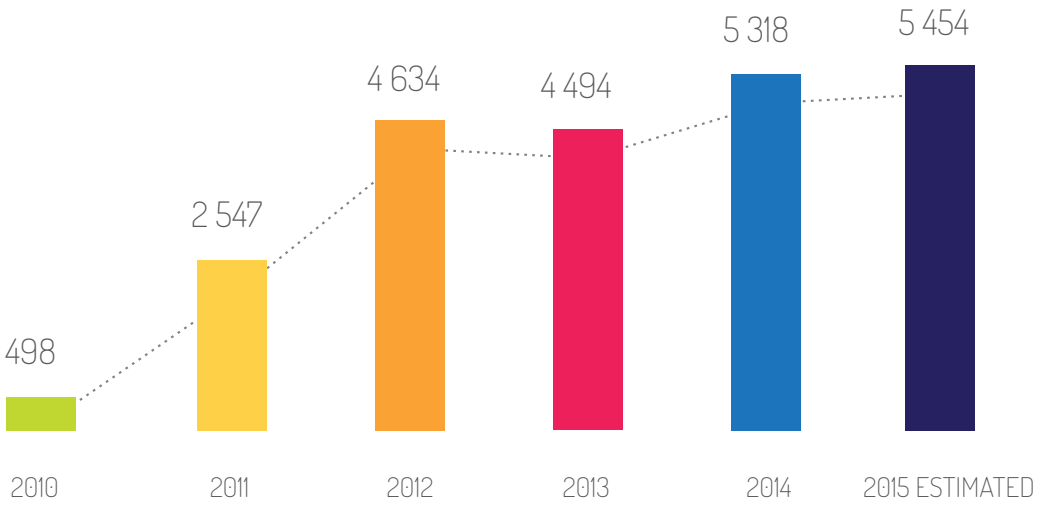
VERTICAL SECTION OF THE CENTRE'S OPERATION

- Department of Coordination
  - Coordination Section
- Department of Administration and Management
  - Public Auctions' Section
  - ICT Section
  - Section for technical support of OP Innovative Economy and Norway Grants
  - Independent Office for technical support of OP Human Capital
  - Independent Office for technical support of OP Infrastructure and Environment
- HR Department
- Head Accountant
  - Accounting Department
- Independent Section for Internal Control
- Section for the Protection of Classified Information and Personal Data
  - Secret Office
- Independent Section for Internal Audit
- Independent Office for HR Development

VERTICAL SECTION OF PROGRAMMES' IMPLEMENTATION

- Department of Programme Management
  - Section for programming and EU policies
  - Section for managing INFOTECH research programmes
  - Section for managing BIOTECH research programmes
  - Section for managing bilateral international research programmes and EUREKA initiative
  - Section for Commercialisation of Research Results
- Department of Project Implementation for State Security and Defence
  - Section for managing the implementation of projects and programmes
  - Section for strategic and international projects
  - Section for reporting, planning and supervision
- Department of Commercial Projects
  - Section for the selection of projects
  - Section for the implementation of projects
- Department of Development of Scientific Personnel
  - Section for managing higher education and scientific personnel development programmes
  - Section for funding and implementation
  - Section for monitoring and supervision
  - Independent Office for systemic programmes
  - Independent Office for appeals
  - Independent Office for legal issues
- Department of Infrastructure Development for Research and Development
  - Section for coordination and implementation
  - Sekcja Zarządzania i Wdrażania

NCRD'S BUDGET



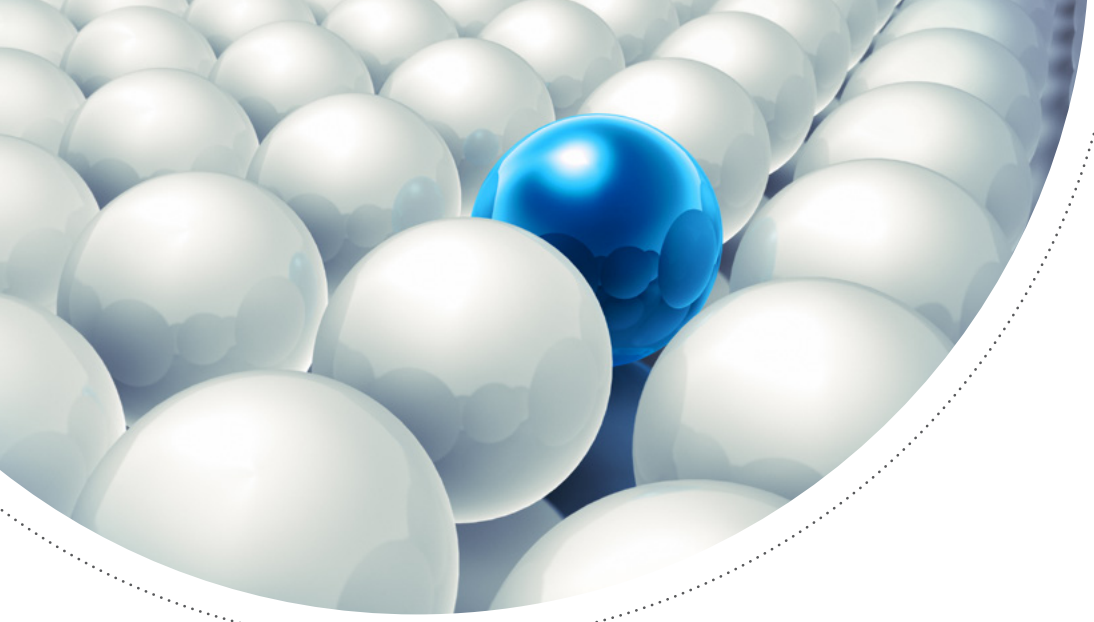
NCRD'S BUDGET 2010–2015 (IN MILLIONS OF PLN)

USE OF THE FUNDING

The National Centre for Research and Development puts great importance on the availability of the funding to the beneficiaries from all over the country. The highest activity is noted in the following voivodeships: Masovian, Lesser Poland, Silesian and Greater Poland.

Voivodeship	Number of projects	Total value of the projects
Masovian	159	11 372
Lesser Poland	384	2 471
Silesian	341	2 574
Greater Poland	307	2 046
Lower Silesian	234	2 418
Pomeranian	224	1 894
Łódź	164	1 128
Lublin	111	678
Subcarpathian	101	1 053
West Pomeranian	83	364
Kuyavian-Pomeranian	73	347
Świętokrzyskie	42	279
Opole	39	111
Warmian-Masurian	33	167
Podlaskie	33	345
Lubusz	23	146
TOTAL		**27 402**

The value of funding in the particular voivodeships. (Data from the end of 2014; in millions of PLN)



NCRD'S BENEFICIARIES (2011–2014)

NCRD'S BENEFICIARIES BY THE TYPE OF REPRESENTED AGENT

The decline of the participation of consortia in the total number of on-going projects and simultaneous increase in the participation of entrepreneurs stems from the overall increase in the number of competitions where entrepreneurs can participate on their own.

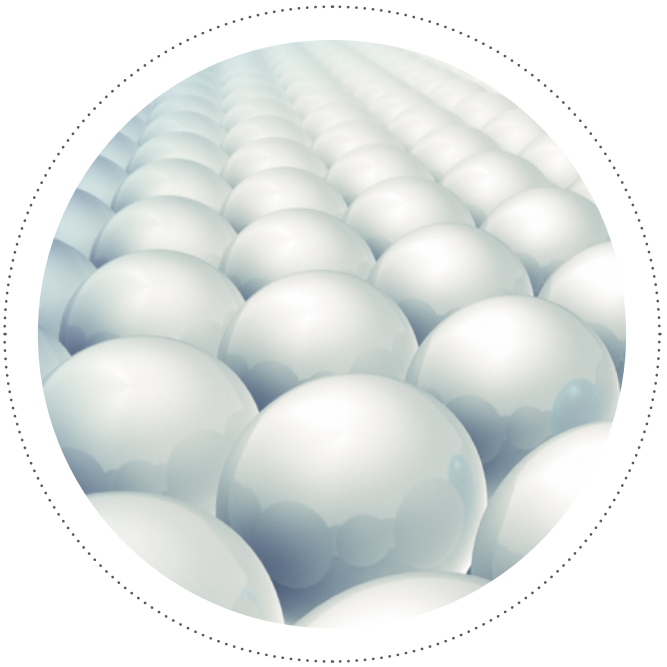
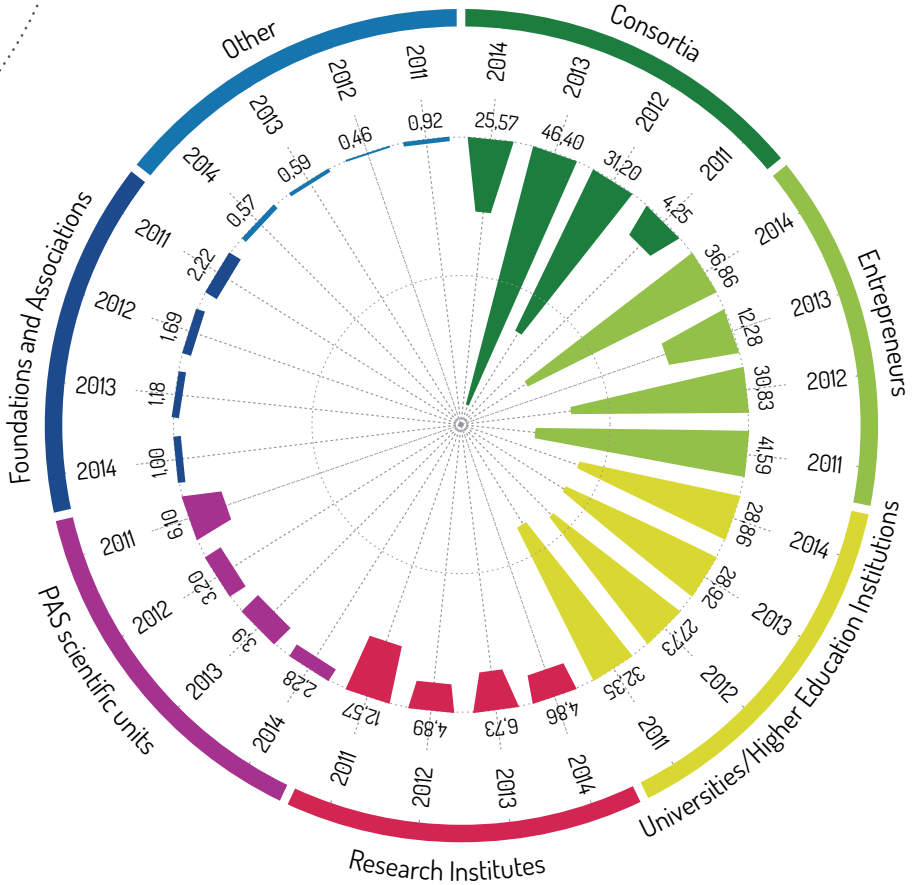
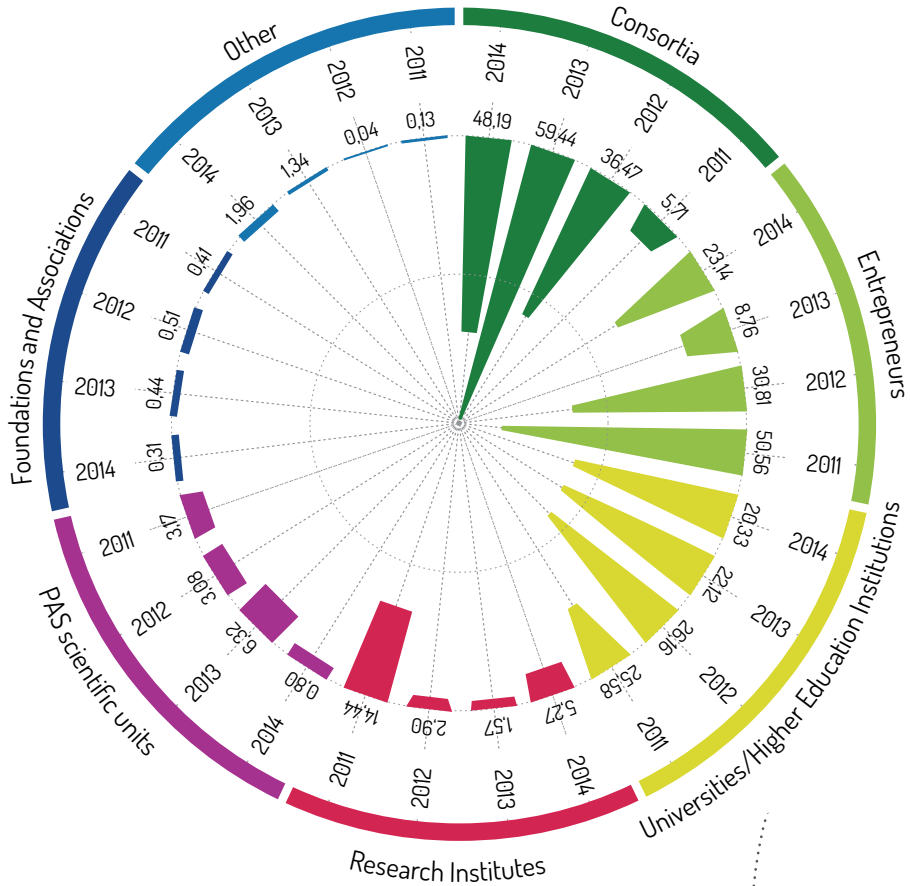


Table 1. NCRD's beneficiaries by the type of represented agent

Percentage of total of signed contracts

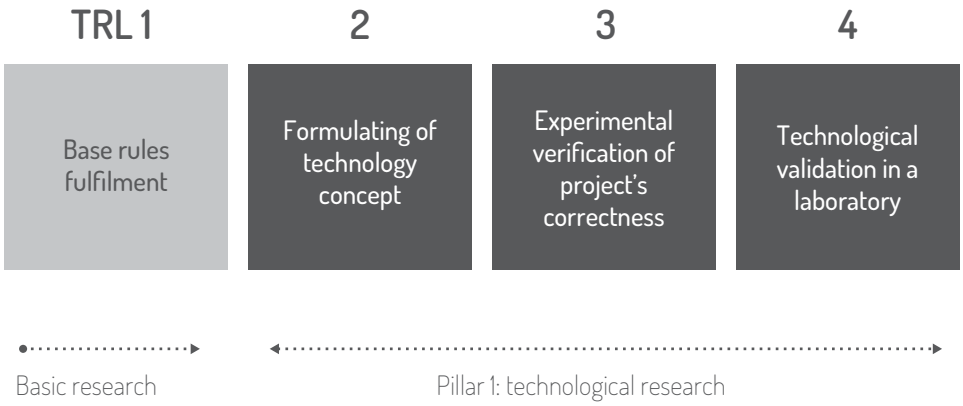


Percentage of total funding allocated



NCRD AND TECHNOLOGY READINESS LEVELS

TRL framework adjusted for the bridge model based on 3 pillars that was developed by a team of experts for KET



Direct support for R&D&I

- STREPs
- INNOTECH, INNOLOT, INNOMED, OP: IE/ OP: ID,
- GEKON, THE LEADER, SOCIAL INNOVATIONS
- STRATEGIC PROGRAMMES
- CuBR, BLUE GAS, RID
- TANGO
- SECURITY AND DEFENCE
- BRIDGE

Support activities for R&D&I

- INNOVATION CREATOR, PATENT PLUS, SPINTECH,

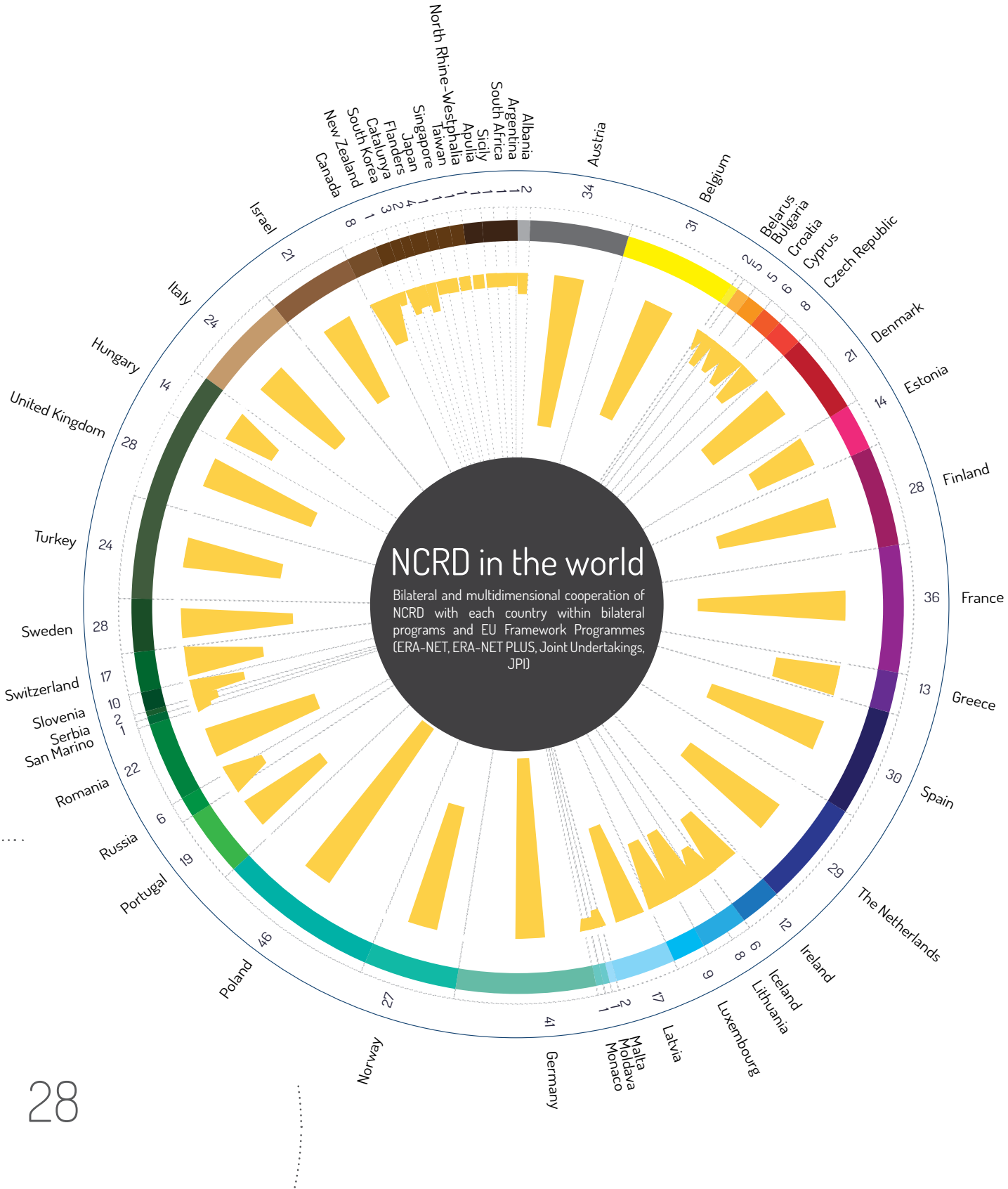
Pillar 2: product demonstration

Pillar 3: competitive production

GRAF-TECH, DEMONSTRATOR+

GO GLOBAL

NCRD IN THE WORLD



Canada 8
Iceland 6
Norway 27
Sweden 28
Finland 28
Estonia 14
Latvia 17
Russia 6
Denmark 21
Ireland 12
Great Britain 28
Flanders 1
1 North Rhine-Westphalia
Belgium 31
Luxemburg
Germany 41
Poland
Belarus 2
Czech Republic 8
Slovakia 7
Austria 34
Hungary 14
Moldavia 1
Romania 22
Switzerland 17
Slovenia 10
Croatia 5
Monaco
San Marino 1
Serbia 2
Bulgaria 5
Albania 2
Portugal 19
Catalonia 1
Spain 30
Italy 24
Puglia 1
Sicily 1
Malta 2
Greece 13
Turkey 24
Cyprus 6
Israel 24
South Korea 1
Japan 1
Taiwan 1
Singapore 1
Argentina 1
RSA 1
New Zealand 1

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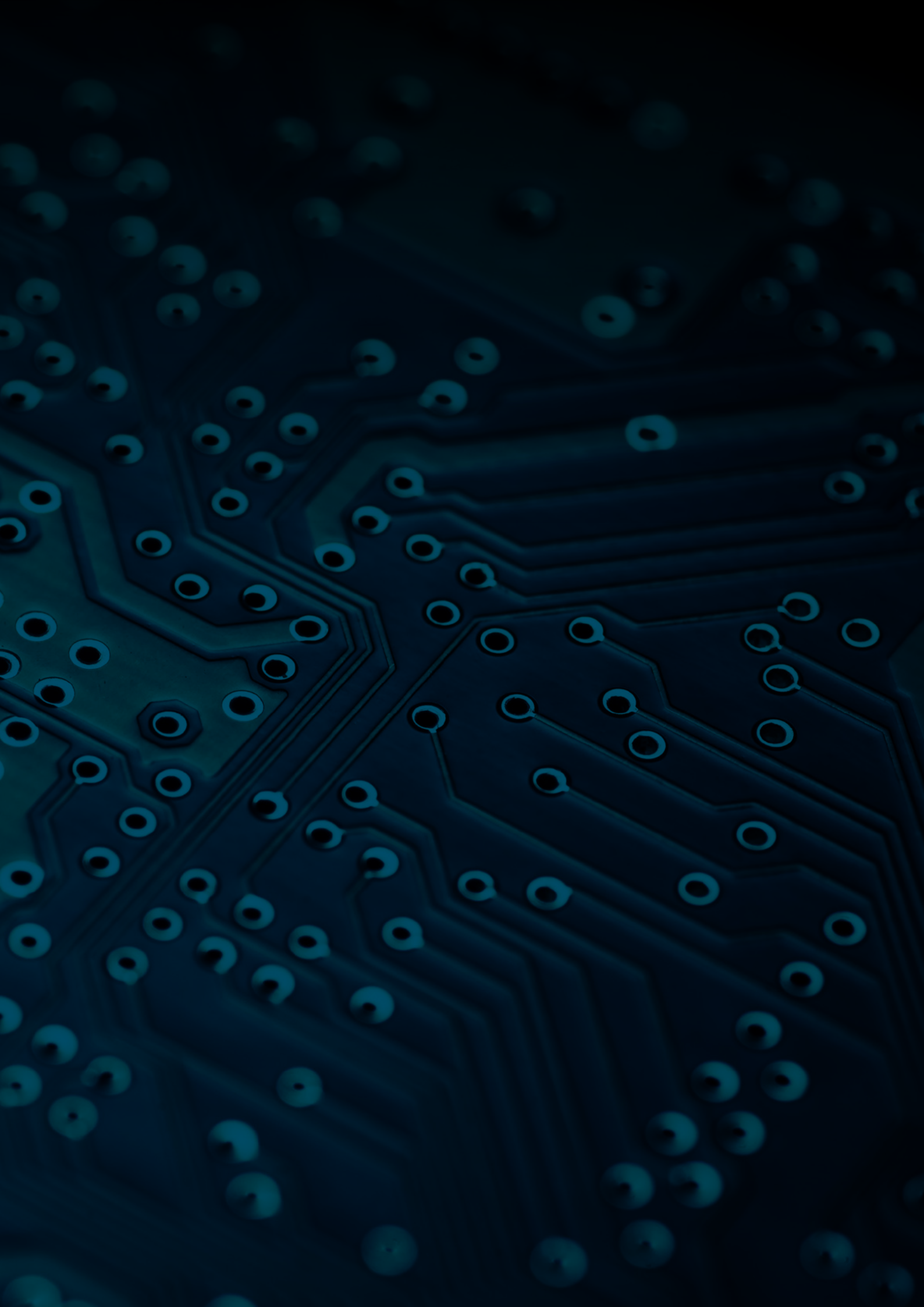
Initiatives organized under the aegis of the NCRD supporting business and scientific relationships affect the dynamics of the development of other key sectors of our economy. Strictly Polish specialties are created this way. They are based on modern, innovative technologies and well-received around the world.



GOOD PROJECTION FOR THE FUTURE

DEPUTY DIRECTOR OF THE NATIONAL CENTRE FOR RESEARCH AND DEVELOPMENT

LESZEK GRABARCZYK

The fact that Polish enterprises invest increasingly more money into R&D means that they deal increasingly better with commercialisation of its results. This is a good projection for the future. It is confirmed in our research that states that 80% of Polish entrepreneurs plans on increasing R&D spending in the short or medium-run. It is very important that businesspeople engage in that, as it is them, alongside public funding, who are the reason of innovation and they stimulate other funding vehicles.

Entrepreneurs will be the main group of beneficiaries in the new EU Financial Perspective, and we have the largest funding ever - around 9 billion EUR until 2023. This will be used to stimulate innovativeness of Polish companies in the form of unrepayable payments. We are expecting an increased interest in this area. The NCRD offers R&D support at every Technology Readiness Level, which makes it a pioneer in this respect in Europe, and also supports beneficiaries aiming at successful commercialisation of the results. Through the initiatives such as BRIdge Alpha we aim to create an innovative approach at private-public funding. As a government agency we will cover the risk of the first, most risky stage of R&D works. We will then let the business take over as we get to the easier, less risky stages, for it is the businesspeople that are the specialists in the field.

Europe needs ambitious plans, excellent scientists and modern laboratories, but what it needs the most is an effective cooperation between science and business. Successful commercialisation of R&D is key to increasing European competitiveness and the NCRD will try to make the dream come true and fulfil the potential of this venture.

CHANGES FOR BETTER

PRESIDENT OF THE BOARD,
INTEL POLAND

RYSZARD DYRGA

With great satisfaction we see R&D taking its well-deserved priority in Poland. Both the understanding that the R&D works lead to commercialisation of innovation by entrepreneurs, as well as the input from various institutions, including NCRD, has led to that improvement.

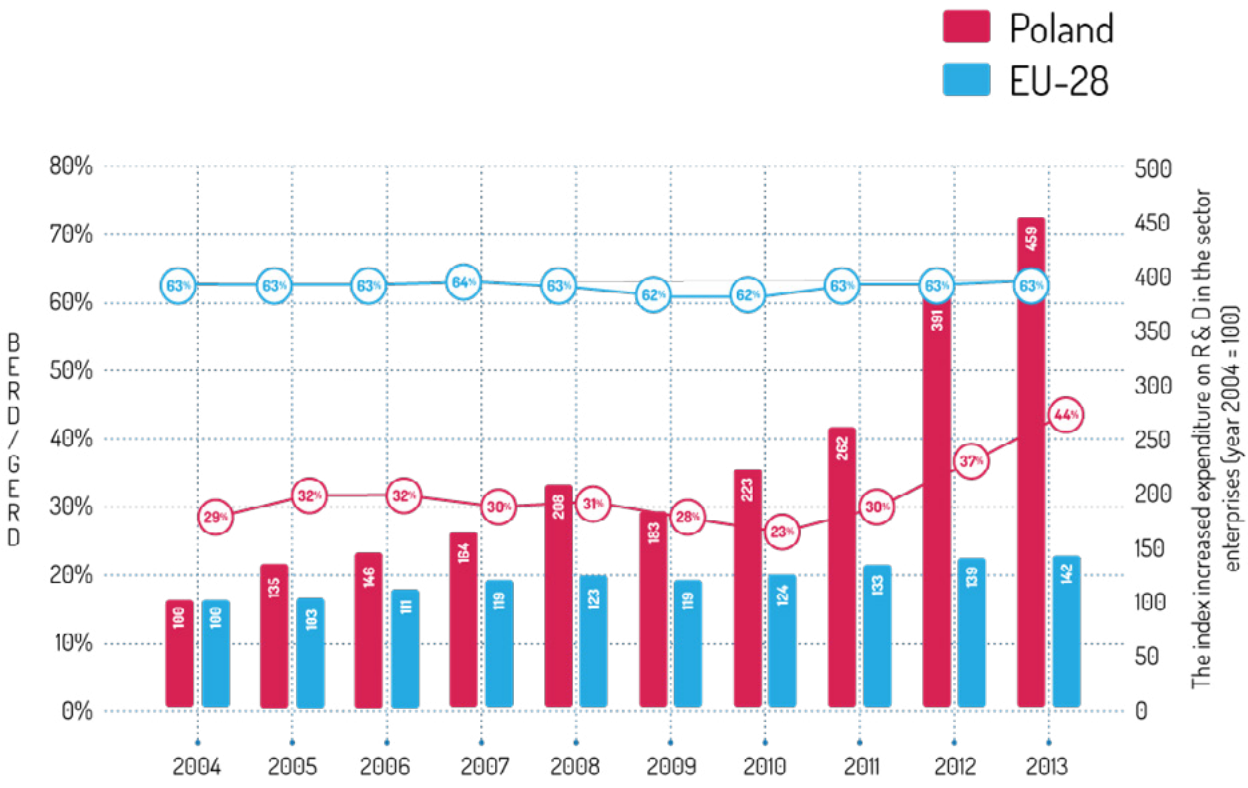
As one of the biggest R&D centres in Poland, we acknowledge the Centre's input into the undertaking, as well as their mission to popularise the importance of the R&D works in the country. We are glad that the recent years have seen legal re-design adapting to the ever-changing dynamic markets, and stimulation of the cooperation between R&D units, businesses, higher education institutions and other entrepreneurial entities. We also greatly appreciate emerging opportunities for funding of our R&D ventures.

NCRD's selection for sector programmes led to new interactions, stimulation of particular branches of economy, as well as cooperation of aforementioned players. Works on executability analysis of the sector programme InnoICT, of which Intel Technology Poland was also a part, assembled scientific units and enterprises from all around Poland, including SMEs, corporations, public and private universities, as well as NGOs. The cooperation, apart from its obvious effect that was the creation of the proposal for national R&D agenda for ICTs, has opened the doors for cooperation of all partaking partners outside of this particular venture.

I'm sure that all aforementioned activities will stimulate R&D, employment of highly qualified staff, dynamic economic growth of the country and inflow of investment, and in effect, will lead to Poland joining the ranks of most innovative countries in Europe, and in the world.

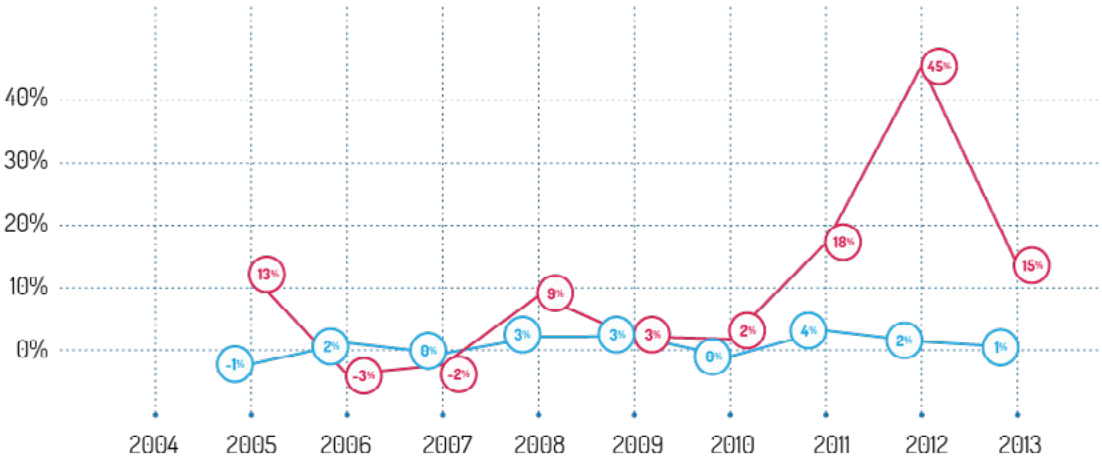
R&D: INVESTMENT – PANORAMIC VIEW

Almost all of the programmes, projects and undertaking executed by NCRD are based on the Centre encouraging entrepreneurs to invest in R&D works. The dynamics of spending increase shows, that they are successful and effective in supporting the cooperation between the business and the science, as well as running its own research sections.



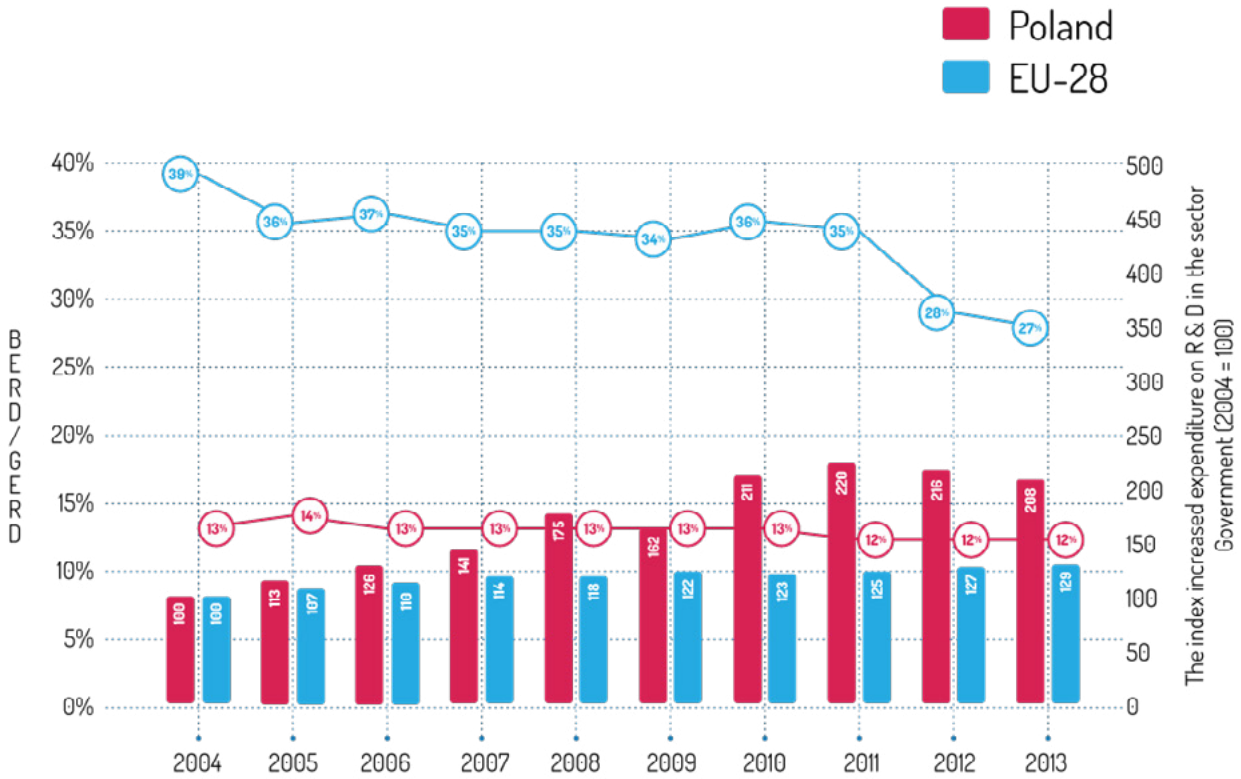
Graph 1. Entrepreneurial spending on research and development

On the graph, solid lines show percentage of entrepreneurial spending on R&D of the total spending on R&D in Poland, in comparison to the average of the entire EU. The steady increase can be seen, with the spike from 2012. The change in nominal value is shown in the bar graph indexes. If the rate of increase maintains, Poland will meet the EU average in the following years.



Graph 2. Annular increase of total percentage of spending on research and development in enterprises in reference to GDP in Poland and European Union

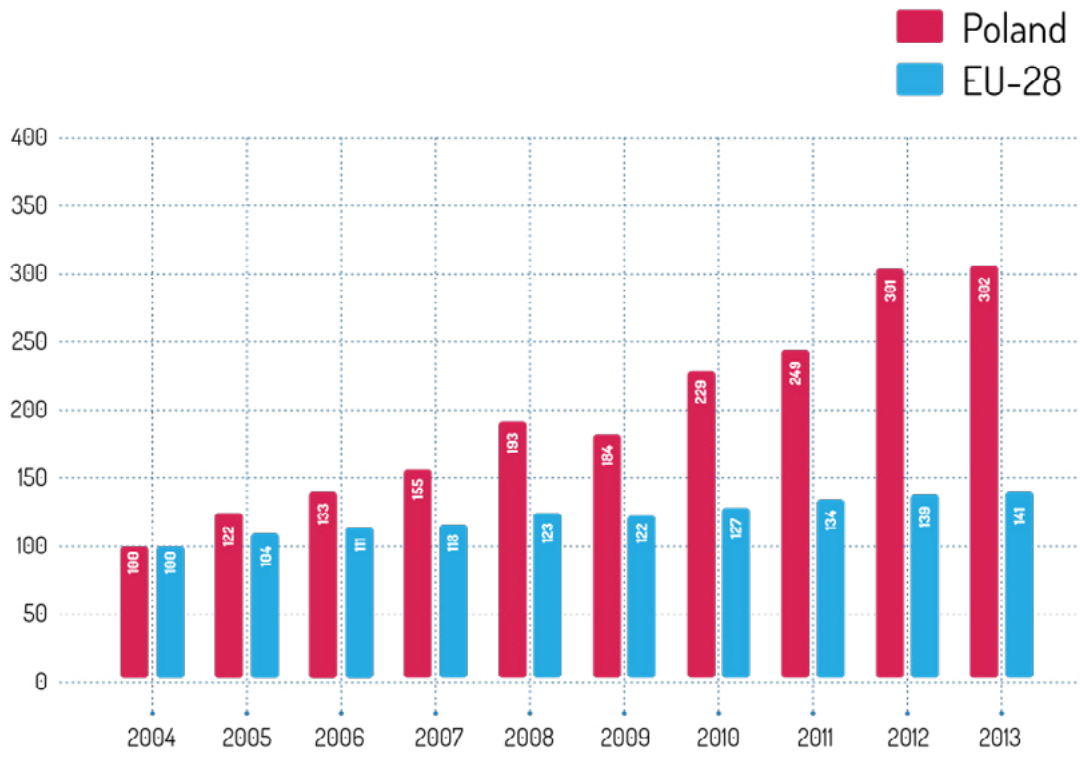
Until 2009, the rate of increase in spending for R&D spending in enterprises (in reference to GDP) was similar in Poland and the European Union, yet in recent years the dynamics changed, and Poland now surpasses the EU average. This is a good indication of the future of Polish innovativeness.



Graph 3. Governmental spending on research and development in Poland and EU

Even though the spending on R&D in governmental sector steadily decreases in Poland since 2010, shifting to spending on R&D in enterprises (thanks to increased entrepreneurial funding in recent years), the spending is increasing significantly faster than in the EU. While they doubled since 2004 in Poland, in the whole of Eu it increased by around 30%. The blue line on the graph no. 3 shows decreasing percentage of governmental spending on total of R&D spending. It's a favourable tendency, that suggests far optimal divide of spending of public and private subjects.

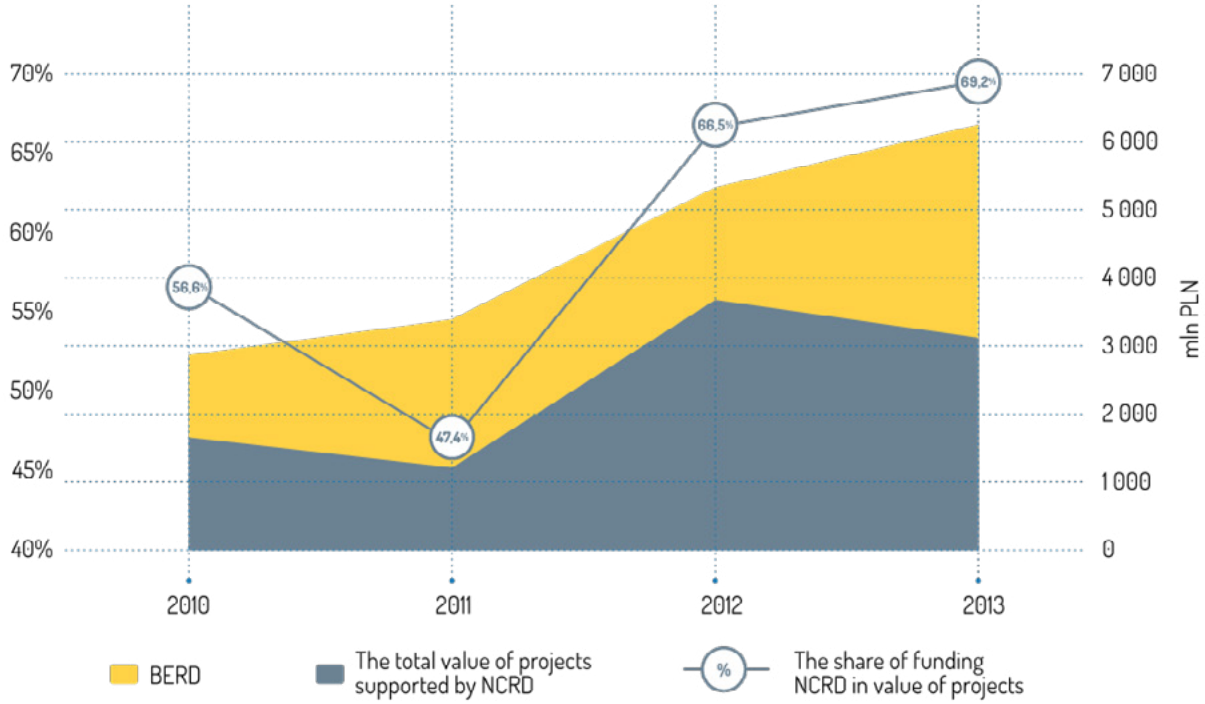
Dynamika GERD (rok 2004 = 100%)



Graph 4. GERD dynamics in recent years in Poland and EU

In Poland, total spending on research increases significantly faster than in the EU. While they tripled since 2004 in Poland, in whole of EU it increased by mere 40%.

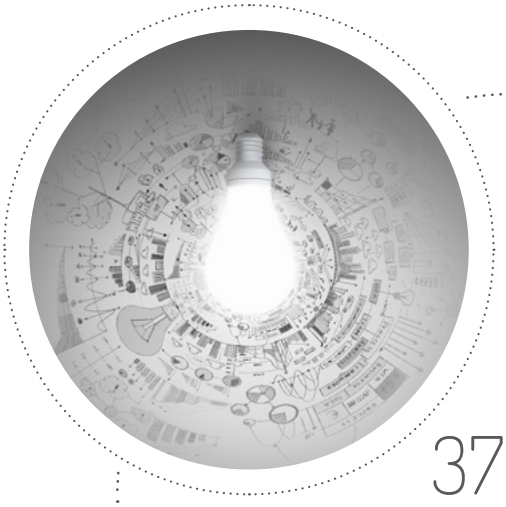
NCRD has been increasingly engaged in projects for enterprises for past 3 years.

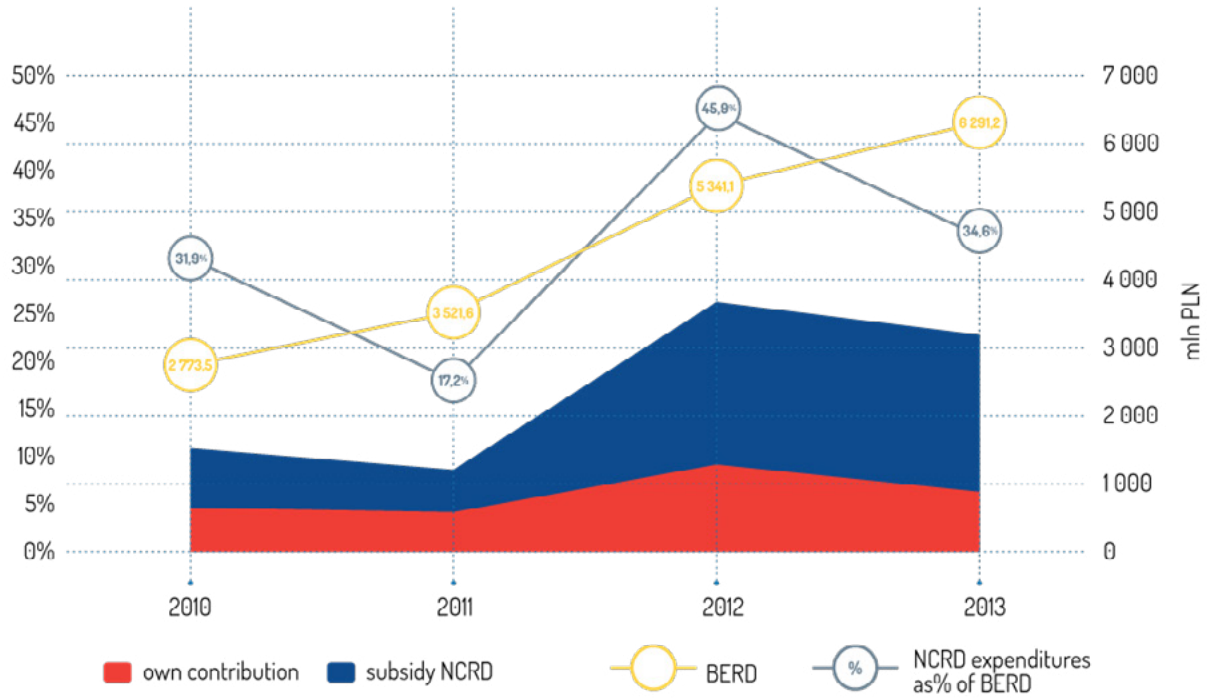


Graph 5. Participation of NCRD-supported projects in BERD

The graph shows that total value of the projects (in enterprises) supported by NCRD has risen significantly, as in 2010 it was 1.57 billion PLN, and in the following years, respectively: 1.31; 3.74 and 3.15 billion PLN. In 2014 contracts signed totalled at 2.7 billion PLN. Those numbers refer to contracts with enterprises and scientific-industrial, and industrial consortia. In this time, total R&D spending in enterprises increased from 2.77 billion PLN to 6.29 billion PLN (graph 6).

The participation of funding from NCRD in those years has increased from 44.2% in 2010 and 44.6% in 2011, to 65% in 2013 (2014 has sustained a similar level). The change is shown as a gray line on graph 5 and blue area on graph 6.





Graph 6. NCRD funding as the percentage of BERD

WE CHOOSE CONSORTIA

NCRD DEPUTY DIRECTOR

JERZY KĄTCKI DSC, ENG.

Polish science still has untapped sources of impacting the economy - it could find better and more frequent ways of commercialising its results.

This is why we choose science-industry consortia and interdisciplinary research teams as our main pool of beneficiaries. Entrepreneurs taking part in the projects ensure that there is economic merit in the idea. Moreover, even if the risk of the programme is still high, it gets higher chances of implementation.

After years of experience, we now know that the most effective consortia are those consisting of both scientists and entrepreneurs. Strengthening the bonds between those two spheres is our priority. As it is the businesses that will manage the results, we put a lot of pressure on bringing those two worlds closer together. Such an approach is also in line with EU financial perspective, and in particular in the OP: SG

WE ARE ALL WINNERS

CHAIRMAN OF THE BOARD
KGHM POLSKA MIEDŹ S.A.

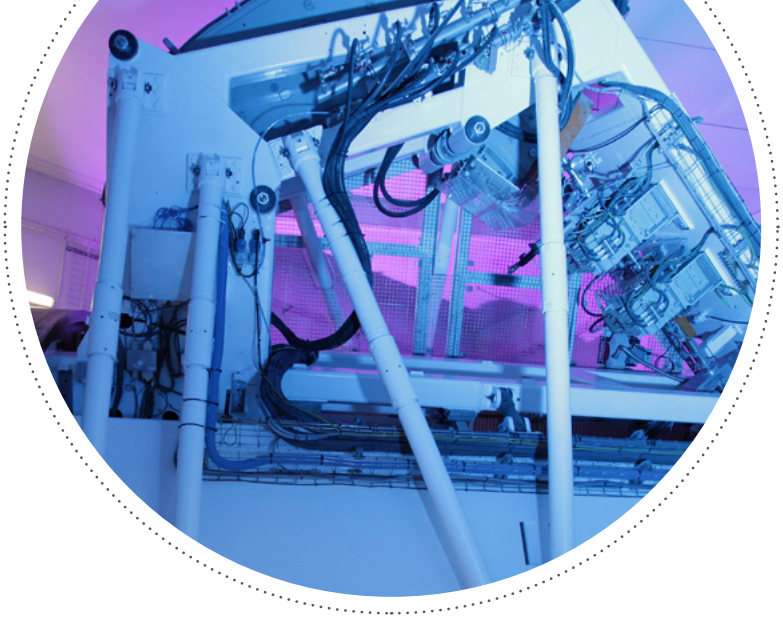
HERBERT WIRTH

NCRD plays a crucial role in stimulating Polish innovativeness. Public support of financing the R&D activities significantly diminishes investment risks of entrepreneurs seeking innovative solutions and planning on incorporating them into the economy. Effective cooperation of industries and science seems to be a key to that mission. Without the relationships between business and academia, under NCRD's patronage, many ideas would still be undeveloped. The support offered, at the R&D level, pushes innovation and commercialisation of unique solutions, making winners out of all of us. A great example of that cooperation stimulation are sector programmes, which allow for business and science to meet at the beginning stages of the problem defining and solution finding. NCRD offers support for that environment, and a joint undertaking of the Centre with KGHM Polska Miedź is one of its shining examples. CuBR deals with research provoked by the non-ferrous metals industries and encapsulates multiple diverse consortia, that incorporate both various scientific R&D units, as well as enterprises. Programme InnoLot, public-private venture developing aviation industry in Poland, and the signing of its first contract, has been a big success of this cooperation. The initiatives stemming from NCRD's work are a starting point of innovation in many other sectors of our economy. They create specialised fields of work Poland performs in, based on innovativeness and modern ICTs, and which are demanded all over the world. I'm glad that the raw materials industry has joined those fields. The power of the entities of the National Centre for Research and Development stems mainly from the high quality and diversity of its programmes and competitions. Venture capital funding, Joint Undertakings and our CuBR are just examples of how it stimulates Polish economy.

NCRD // ANNUAL REPORT 2014

2014 INSPIRATIONS

NCRD executed 3 351 projects in 2014. Some are incredibly creative, while all of them build the innovativeness of the Polish economy and modernise 21st century Poland. Below, we are presenting selected initiatives – interesting from the business perspective and socially needed. They are the best evidence of the courage and acumen of Polish innovators.



PROTON BUNKER

There are only 26 such places in the world, 11 of them in Europe. Spread across 7 hectares of land, the facilities in Bronowice, Cracow, scientists cure cancer, test electronics before launching it into space and deepen the structure of matter.

The 260 million PLN investment allowed for the launch of The Bronowice Cyclotron Centre (CCB). At its heart is the cyclotron Proteus C-235, accelerating proton beams to almost the speed of light, enclosed in a bunker with 5 meter thick walls. Proton therapy is extremely effective in oncology, enabling the precise radiation of the cancerous tumours in any location of the patient's body - brain, abdomen or even neck. It has been extremely effective with the cancers of base of the cranium (98% success rate). How can a machine that weighs 240 tons and resembles a metal barrel with pipes sticking out help oncologists fight brain tumours? The proton beam, going at 100,000 km/s, hits the cancer cells, damaging their DNA chains and killing them. One of the main advantages of this type of treatment, in comparison with the existing ones, is the fact that the proton beam does not necessarily influence tissue while penetrating the organism, and directs its destructive energy to the cancerous area.

PROJECT:

THE NATIONAL CENTRE OF HADRON RADIOTHERAPY (NCRH) PHASE 1: THE BRONOWICE CYCLOTRON CENTRE

BENEFICIARY:

THE INSTITUTE OF NUCLEAR PHYSICS POLISH ACADEMY OF SCIENCES IN KRAKOW (IFJ PAS)

VALUE OF THE PROJECT:

128,465,400.56 PLN

YEARS:

2007-2014

AREA OF SUPPORT:

ACTION 2.1 OF OPERATIONAL PROGRAMME: INNOVATIVE ECONOMY

PROJECT:

THE NATIONAL CENTRE OF HADRON RADIOTHERAPY (NCRH) PHASE 2: THE BRONOWICE CYCLOTRON CENTRE – GANTRY FACILITY

BENEFICIARY:

THE INSTITUTE OF NUCLEAR PHYSICS POLISH ACADEMY OF SCIENCES IN KRAKOW (IFJ PAS)

VALUE OF THE PROJECT:

170,362,367.60 PLN

YEARS:

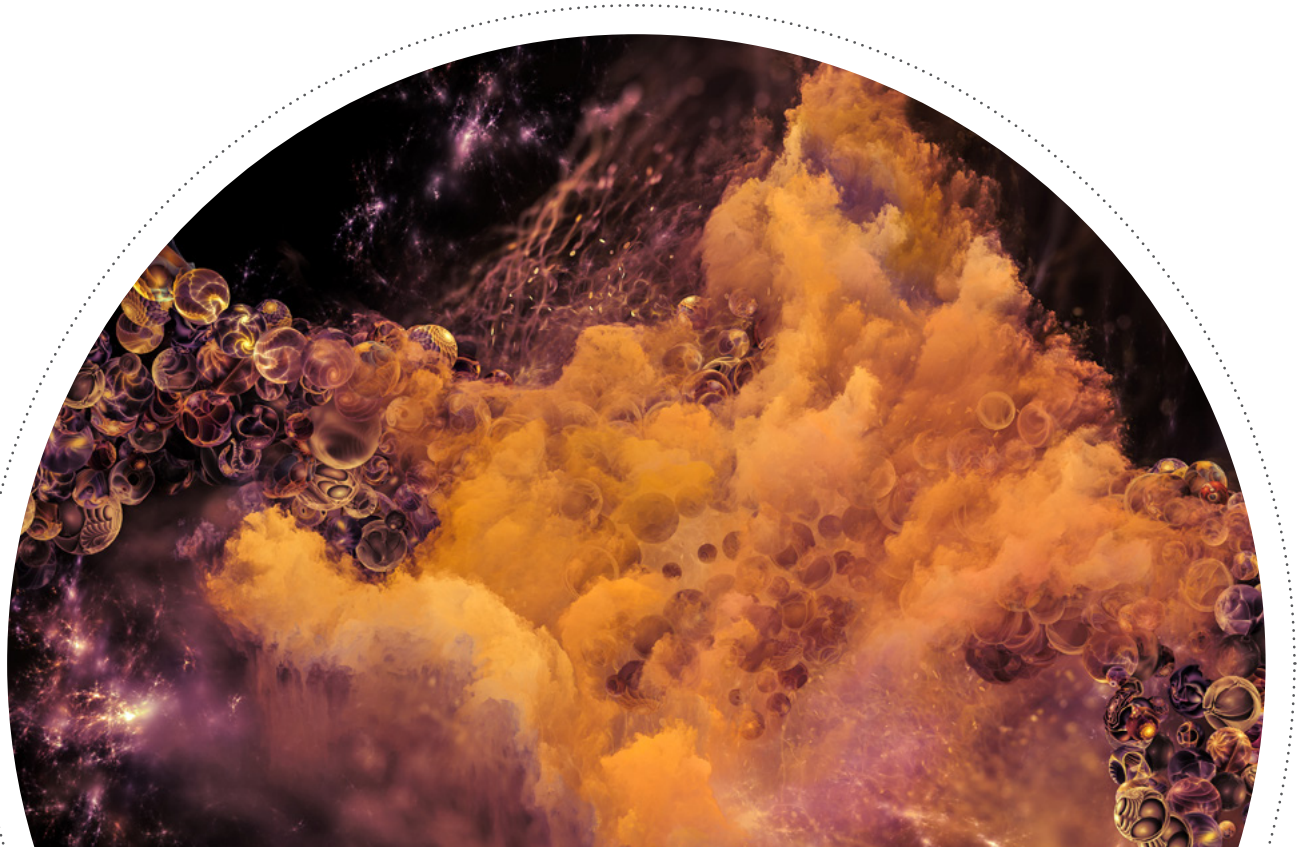
2009-2015

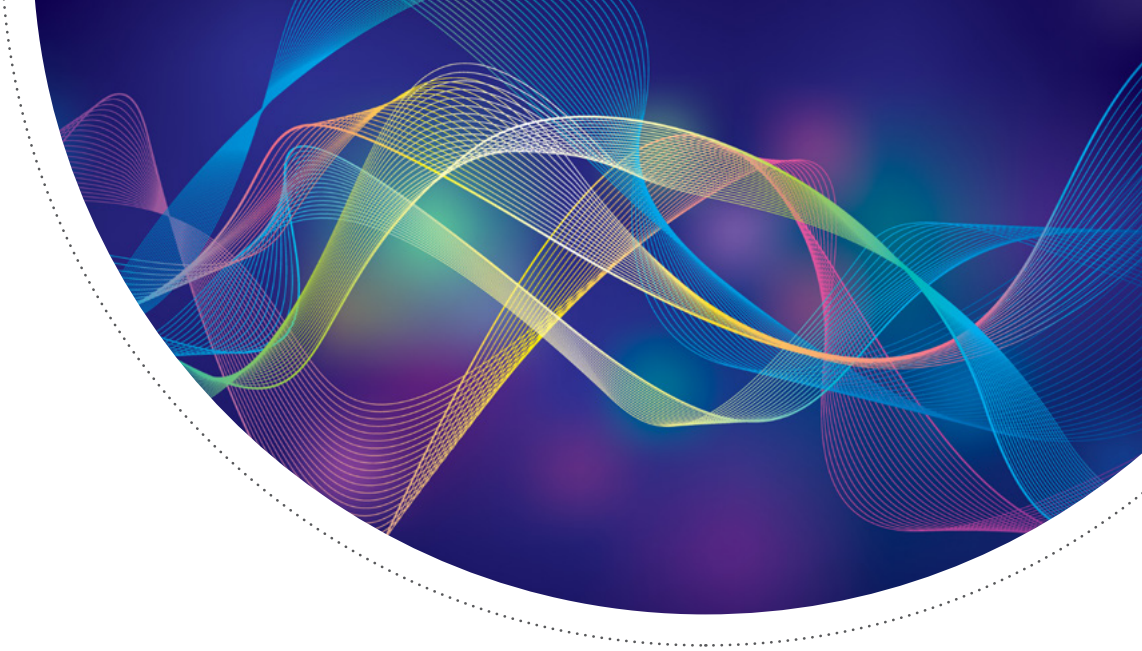
AREA OF SUPPORT:

ACTION 2.1 OF OPERATIONAL PROGRAMME: INNOVATIVE ECONOMY

Proton radiotherapy is also used in gantries - special therapeutic stations, that use magnets and adjustable moving arm to precisely target the beams into the right area of the body. Cracow houses two of those stations.

What's important, the Centre is prepared to host children with cancer as patients. They house a colourful playroom, which acts as a waiting room before the patients are transported to "little apple" and "little orange" therapy stations. As children get treatment during sleep, special facilities for inducing sleep and awaking the patients were built.





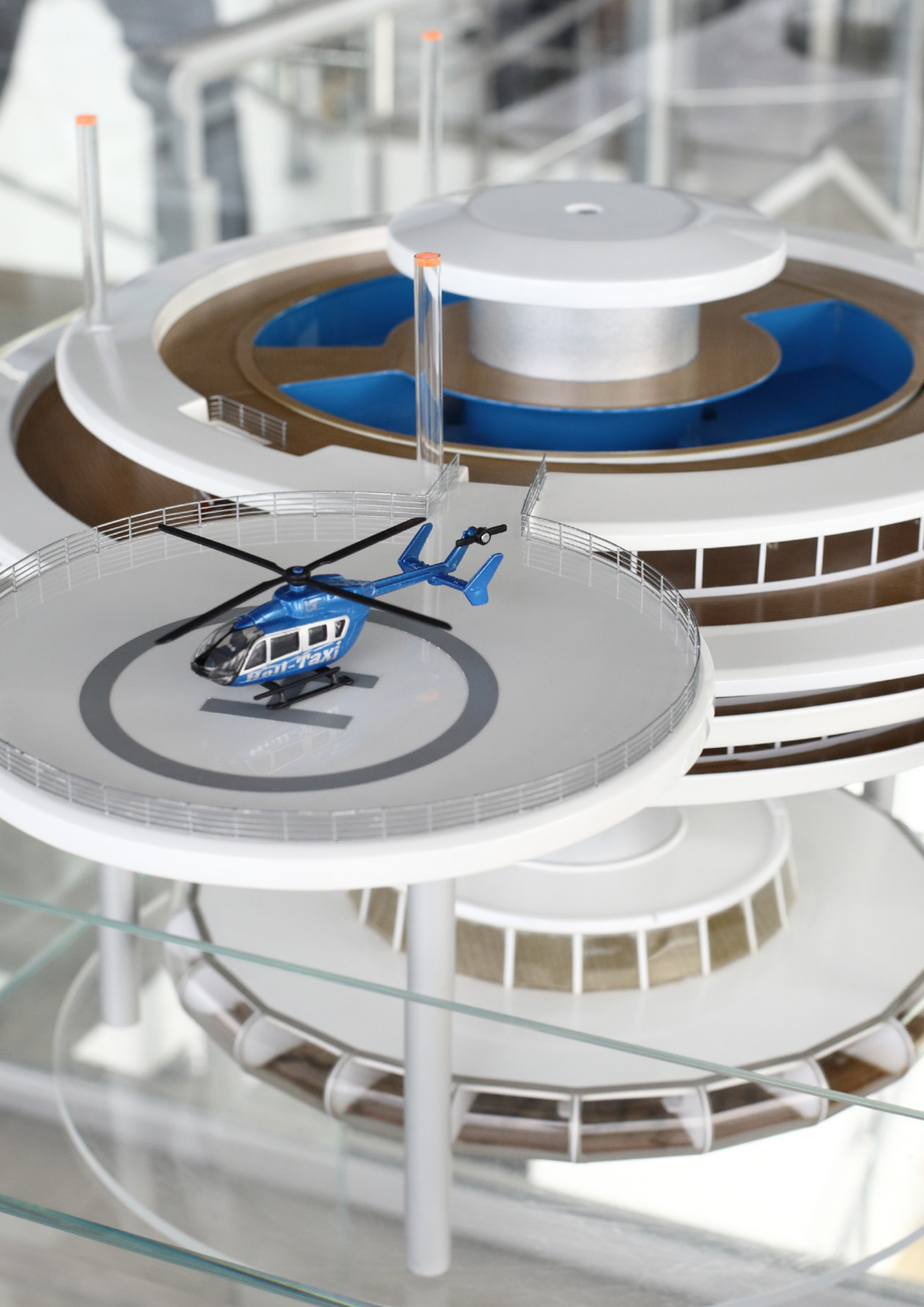
But cancer treatment is not the only job of the CCB - scientists working on atomic nucleus, experimenting with radiation physics, radiobiology and even material engineering are also at the premises. Researchers from The Institute of Nuclear Physics try to explain how proton radiation influences living organisms and different types of tissues. They also help to establish protons' influence on electronics in space.

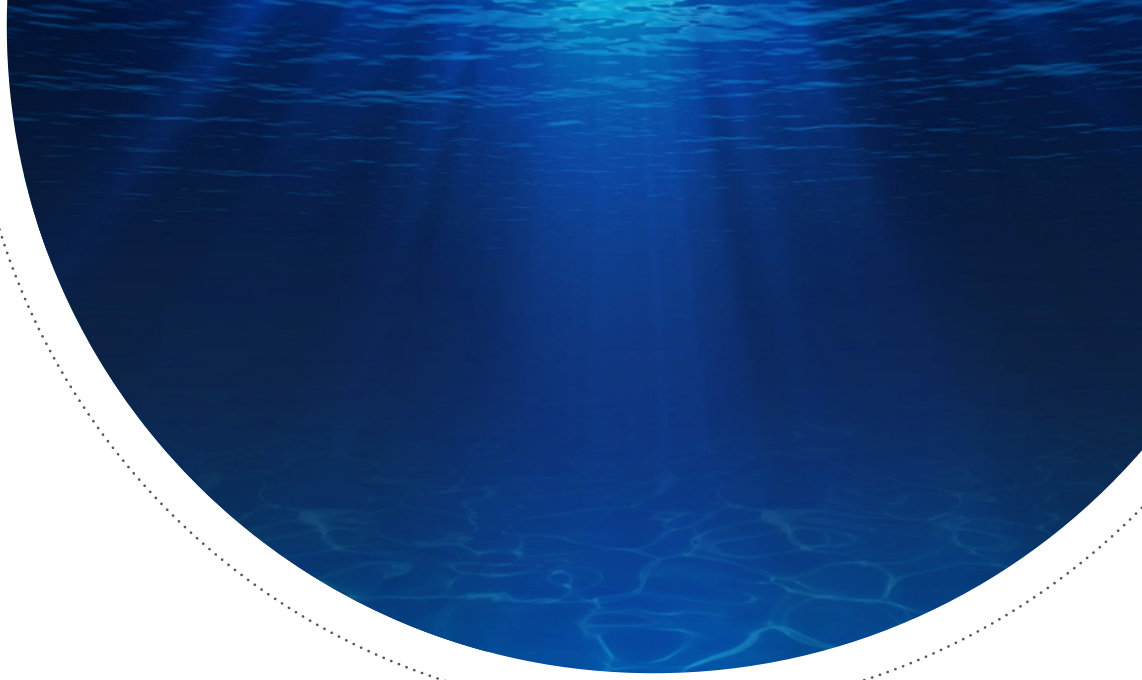
BENEFICIARY COMMENT

Many physicists and radiobiologists from Europe, USA and Japan are already queuing to get their hands on proton beams from the cyclotrons for research purposes. Yet the biggest beneficiary of the Centre will be cancer patients who, thanks to the gantry technology, will have more precise treatment available. Maximum efficiency of the CCB will be reached after just a few years of running, and it will amount to 700 patients per annum. The Centre will let doctors and medical physicists join the research on development and optimisation of proton radiotherapy. At the same time, the CCB will offer its services to firms wanting to test electronic launched into space.

One of the biggest advantages of working with NCRD is the quick response time in making decisions. This proved to be very important in such a complex project that required synchronisation of many subjects and running many competitions for supplying complex scientific and medical apparatus.

PAWEŁ OLKO DSc.
Director of the CCB


Bell-Taxi



UNDERWATER ALL-INCLUSIVE

Tourists in Maldives soon enough will find out what can come out of passion of diving enthusiasts with a business plan. The underwater hotel, that can be entered without getting wet, first of its kind in the world, was designed by four Polish engineers. The innovative construction, consisting of huge disks will allow for every under-water world enthusiast to stay underneath the ocean surface.

The innovative construction made of huge disks will allow for every under-water world enthusiast to stay underneath the ocean surface

The desired hotel is reminiscent of a space ship in its design. The basic version consists of two disks: over-water (with a diameter of 31.5 meters) and underwater (with a diameter of 50 meters), hanging around 10-30 meters above water surface; both parts are linked through a column with a staircase and a lift. The underwater part is divided into 20 hotel rooms, all overlooking the depth of the ocean, and, in some cases, the coral reef.

The over-water part houses all the entertainment for the guests: restaurant, SPA, pool for diving lessons, and a chopper landing strip. The facility, with broadband and satellite phone access, can be extended, so the initial 2000 square meters can increase up to 6000 square meters.

PROJECT:

RESEARCH AND CONSTRUCTION OF UNDER/OVER WATER OBJECT FOR SCIENTIFIC PURPOSES

BENEFICIARY:

DEEP OCEAN TECHNOLOGY SP. Z O. O.

VALUE OF THE PROJECT:

33,555,485.79 PLN

YEARS:

2012-2015

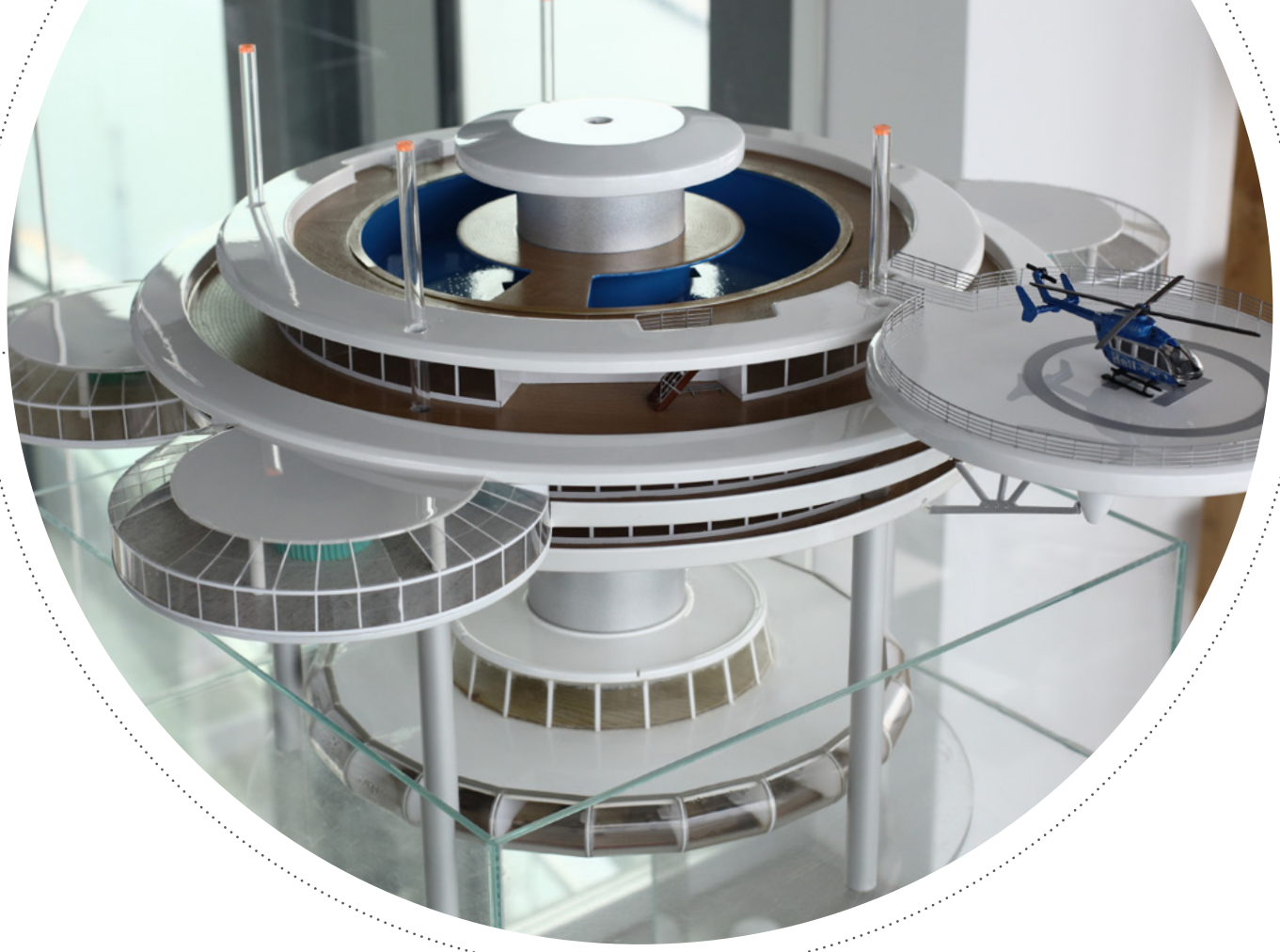
AREA OF SUPPORT:

ACTION 1.4 OF OPERATIONAL PROGRAMME: INNOVATIVE ECONOMY

The object, built upon 5 stable pillars embedded in the ocean floor, is made of steel, glass and concrete. Moreover, the innovative hotel complex can be created and installed in any part of the world. Every construction can be customised suiting the geographical conditions, including the depth of water or the type of coast.

An interest in the design was already expressed by companies from around the world. Deep Ocean is under extensive negotiations with 9 clients from the Persian Gulf, including from Abu Dhabi, Dubai, Qatar and Saudi Arabia.

The first installed object will be adjacent to Zen Resort in Maldives. The contract has been signed, and the disks are being built in Gdynia Shipyard. What's interesting, thanks to a great support from local and regional councils and use of the innovative object, a centre of marine environment and training for marine schools will be constructed.



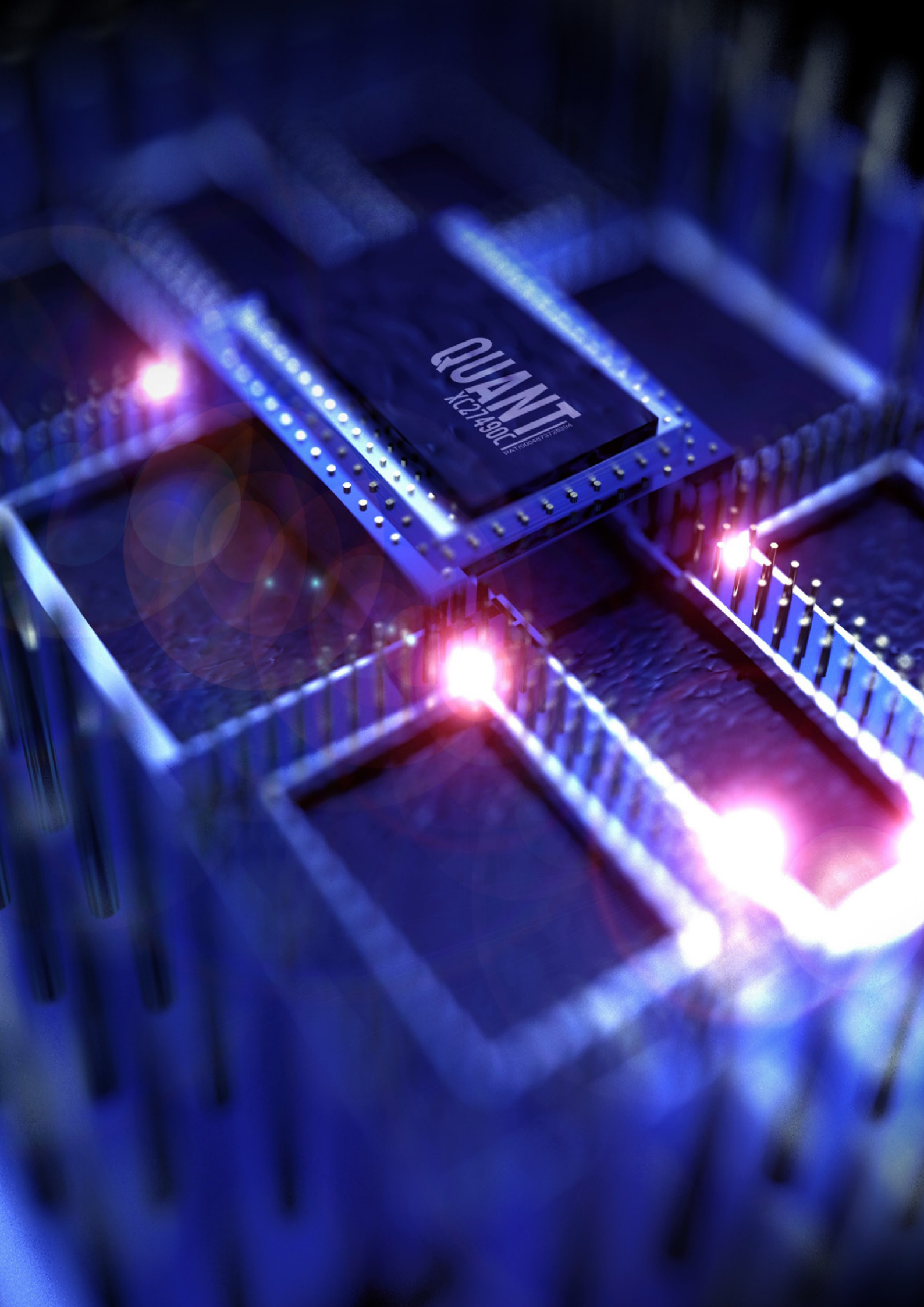
BENEFICIARY COMMENT

Implementation of the underwater hotel project has directly influenced the development of our company - we created new jobs in the R&D department, created new technical solutions that will soon be patented, and full technical paperwork of the object, approved by a classification society which is an achievement that has not been reached by anyone in the world before. The implementation of the project has had positive impact not only on our company, but also on every cooperating entity, including Gdańsk University of Technology, designing office, the architects and the shipyard.

The project has taken almost 3 years - years full of challenges, including research (choice of location, many modification of algorithms, etc), design (design changes stemming from resistance/exploitative research) and technology (functionality and internal design). Constant evaluation of the project, drawing conclusion with each completed step and support from our partners allowed us for successful completion of the project.

NCRD and delegated representatives have supported our actions from the beginning, offering advice on paperwork and solutions to some issues. The funding management was quick and always on-time, which was crucial for us as we've been cooperating with many subjects that had strict payment schedules. Thanks to NCRD and their support, we managed to complete the undertaking successfully.

KRZYSZTOF KONIUSZANIEC
Head of the project, Deep Ocean Technology Sp. z o. o.


QUANT
XC27490C

THOUSAND TIMES SMALLER THAN A BLOOD CELL

QUANTUM COMPUTERS

University of Rzeszów has advances to a scientific super league. The cutting-edge scientific-educational facilities located at the University are a leading Polish centre in production of transistors and jet-engine parts. It's also a host to works on creating of quantum computer that has a potential of revolutionising global technology.

Nanometre is one-millionth of a millimetre - thousand times smaller than a blood cell. This is the level of precision required of staff and students dealing with nano materials - a key component of many modern inventions. Firstly, an appropriate structure needs to be created to build complicated apparatus. In the one-and-only laboratories in the country, physicists are creating semi-conductive layers, which could be a base for a detector or a transistor. The researchers can also measure shape and angling of the vane (a part of jet-engine), and then build one that is tailor-made and very durable. They also layer atoms for nano-dimensional structures which are a base for quantum computers - technological future of the world.

The Centre for Microelectronics and Nanotechnology spreads over a 4000 square meter area. Students and staff can use one of the 8 specialistic labs equipped with modern apparatuses and dozen of lecture and tutorial rooms.

PROJECT:

SCIENTIFIC-EDUCATIONAL COMPOUND FOR MICROELECTRONICS AND NANOTECHNOLOGY CENTRE OF UNIVERSITY OF RZESZÓW

BENEFICIARY:

UNIVERSITY OF RZESZÓW

VALUE OF THE PROJECT:

56,828,526.37 PLN

YEARS:

2007-2014

AREA OF SUPPORT:

ACTION 13.1 OF OPERATIONAL PROGRAMME: INFRASTRUCTURE AND ENVIRONMENT

The equipment housed in the centre is unique in the country. The jewel of the crown is the MBE apparatus, the only one in Poland, that settles thing layers of nanometer rows that have a specific chemical structure (in this case - mercury compounds). Not far away we can find one of only two constructions that are used in installing of lithographies in the country. The students can also use nano-preparatics lab in which they prep before working with nano-objects. Extensive training is required to access the most technologically advanced facilities.

Scientists in the field of nano-technology dream of constructing a nano-robot that could be used in medicine - they want a device small enough to be injectable into the bloodstream and serve as a precise drug delivery method. Maybe it will be the researchers from Rzeszów who will succeed in making this dream come true.

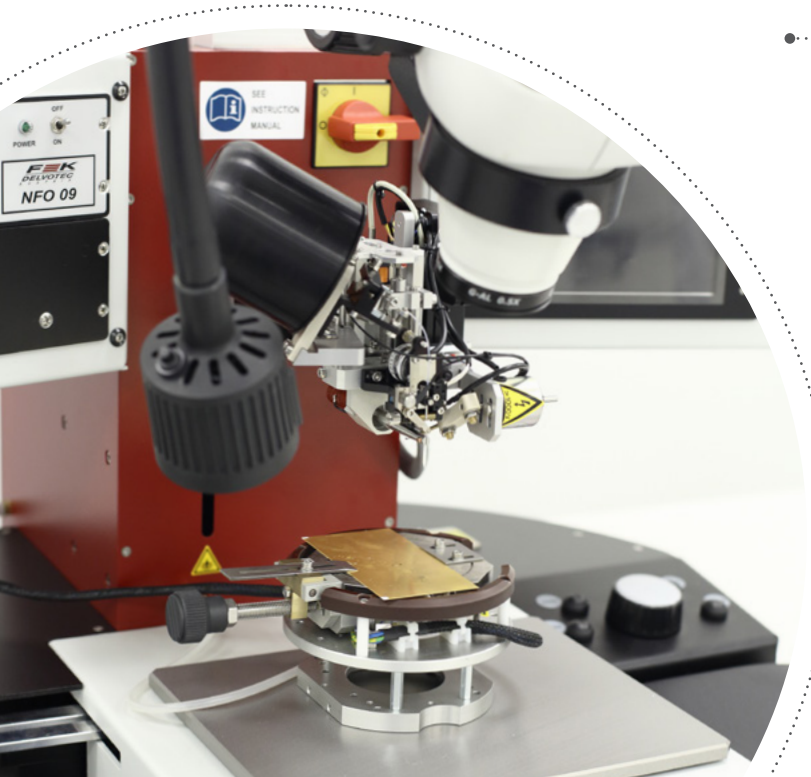
BENEFICIARY COMMENT

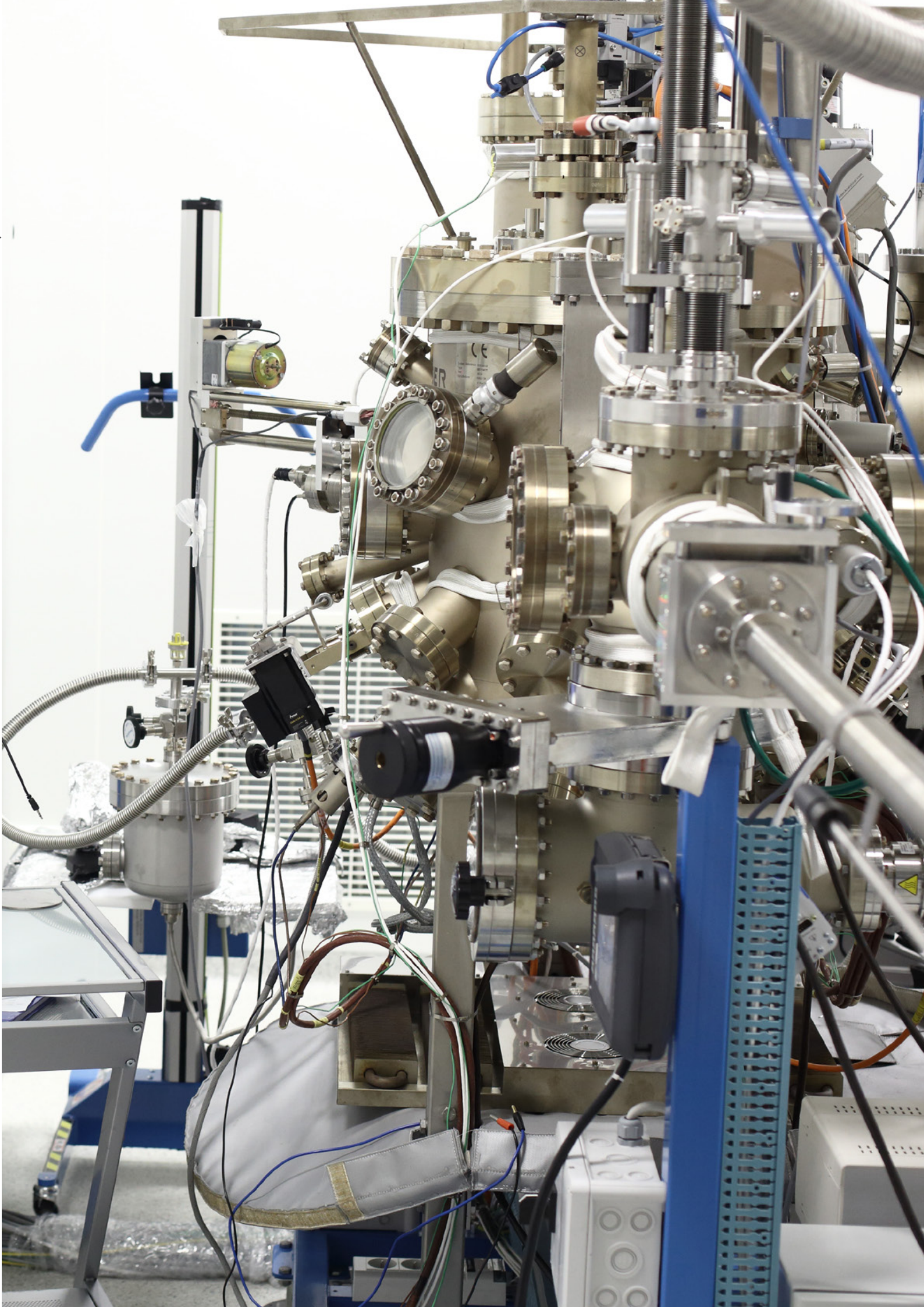
The project allowed us to modernise and expand the structures of the university and thus to develop our R&D activities. Modern laboratories aid the education of highly skilled specialist for the enterprises of Aviation Valley, as well as the training and increased engagement in the Centre's work of WSK-PZL Rzeszów staff. The cooperation with Aviation Valley's enterprises is blooming in the field of developmental research. We plan on implementing technologies and R&D results created in our centre, including non-invasive methods of controlling hidden defects and technology of high-sensitivity apparatus manufacturing.

Our research in past two years significantly sped up the advancement of hi-technology at the university, as well as increased the engagement of students in specialistic experiments. The number of students (both ordinary and PhD) doubled, and we opened many new courses based on the new facilities. It needs to be noted, that the aim of the goal is also to equalise chances and prospects of youth in one of the poorest and secluded region of EU - Subcarpathian.

We are grateful and glad that NCRD cooperated with us during implementation, as they are open, supportive and a great help.

EUGENIUSZ SZEREGIJ DSc.
The interim director of the Centre for Microelectronics and Nanotechnology at the University of Rzeszów






SOLARIS
16:53
ODO
813 km
21 ℃
km/h
rpm
x 100

ECOLOGICAL GIANT

MEGABUS

Can a public transport vehicle be spacious, functional and ecological all at the same time? Of course it can, granted it's designed by Solaris engineers. The manufacturer from Poznań will soon introduce an ultramodern, big, zero-emission bus to the European roads. It's a fantastic alternative for hitherto used buses, and even trams.

For almost a quarter of a century Solaris has been supplying over 600 cities in 30 countries with their buses. One of they flag projects is Urbino, a city bus. But it could be overthrown by the end of the year by a new vehicle - mega class bus with hybrid engine.

24 meter long bus will be twice as big as a usual model. Its capacity could match that of a tram, yet no infrastructure such as tracks or electricity network is needed. Megabus construction will be based on two knuckles and two axel shafts. It offers many possibilities, but also challenges, such as drivability and stability. How to optimise such a huge machine for smooth turns and comfortable drivability? How to create a sustainable, eco-friendly engine system that will manage to move 30-ton giant? Those questions will be answered by the experts from Poznań and Warsaw Universities of Technology cooperating with the manufacturer. The results could revolutionise public transport as we know it.

PROJECT:

FIRST POLISH BUS OF MEGA CLASS WITH MULTI-AXES HYBRID ENGINE POWERED BY GASEOUS ECO-FUELS.

BENEFICIARY:

SOLARIS BUS & COACH S.A.

VALUE OF THE PROJECT:

11,412,405.00 PLN

YEARS:

2012-2015

AREA OF SUPPORT:

INNOTECH

The vehicle designers have already planned out special system with servomotors that will ensure the stability during motion. They also redesign the engine systems – it was originally supposed to run on CNG gas, which is a compressed shell gas. Ultimately the hybrid technology was found as the best fit. It means the engines will run on electricity supplied from an external source during charging process, and, if need be, could be powered by a hydrogen based fuel cell that will be built into the structure, which is the cleanest fuel available on the market. The charging process will be done while the vehicle is in motion, reducing the time spent idle.

The next stage of the works on the prototype is testing and calibrating of the vehicle in order to determine safety and comfort of the drive. The final stages of production and testing should be finalised by the end of this year, and we can expect functioning vehicles on the streets some time next year.

BENEFICIARY COMMENT

The design and manufacturing of the doubly articulated bus is an undertaking that's very difficult, yet extremely prestigious. The construction works on the prototypes are planned to have finished this October, and the first vehicle will be manufactured in 2016, with production volumes later on depending on the market demand.

Building of a doubly articulated bus is very complex, and the entire concept has been evolving during the works. After consultations with our clients and scientists from Warsaw and Poznań Universities of Technology we decided to create electric bus powered by hydrogen-based fuel. We are very appreciative of the openness of NCRD experts, who allowed for that revolutionary change in the midst of the project.

Cooperating with the universities let us expand the scope of our R&D works, thanks to the availability of apparatus that we wouldn't normally have. Apart from access to specialist analyses and measurements we were also lucky enough to be able to exchange experiences and knowledge with scientific staff of both Universities – a classic example of science/business cooperation.

Our cooperation with NCRD covers multiple ideas we're trying to implement, and one of the main advantages to the relationship is the availability of funding for our research. It allows for executing a project in the scope unattainable before on our own. Thanks to that cooperation we can realise incredibly ambitious ventures, and not just dream about them.

RAFAŁ BIAŁEK
Head of project management,
Solaris Bus & Coach S.A.

INVESTMENT VEHICLE

How can you assess whether ultra-innovative and unusual idea will be useful? How to cost the cost-efficiency of the investment? The answers for those and many other difficult questions are provided by experts from StartVenture@Poland, seed fund for StartUpHub Poland.

StartVenture@Poland (SVP) is the first seed capital fund created by StarUp Hub Poland foundation supported by the National Centre for Research and Development and Giza Polish Ventures (GPV) fund. SVP is an accelerator and a seed fund aimed at inventors from engineering and computing industries from Poland, CEE (Central & Eastern European) countries and Western hubs of the Polish Diaspora.

SVP support R&D works for nano-, clean-, agro- and bio-technologies, new materials, robotics, SaaS, internet-of-things and big-data. Projects that are scaled and offer innovative edge are offered support in analysis, business plan verification, technology, and preparing of investment and corporate paperwork. The best projects will get funding before starting the company and will receive start-up money. GPV additionally offers co-investment, wide networking tools and investment care, and will add funding at the later stages of the project.

PROJECT:
STARTUPHUB POLAND

BENEFICIARY:
STARTVENTURE SP. Z O.O.

VALUE OF THE PROJECT:
12 500 000PLN

AREA OF SUPPORT:
BRIDGE ALFA

The aim of the investors is to attract scientists from other countries of our region and talented Poles working abroad to Poland so they could work on their projects in Warsaw.

StartVenture@Poland is one of the subjects taking part in BRIdge Alpha undertaking, aimed at projects at seed stage, where the risk of failure is at its highest, but could be verified at relatively low cost. Projects receiving this kind of support are an attractive product for venture capitalists. Capital gap stopping scientists from offering their products to businesses is removed, and many Polish scientists creating innovative solutions will find funding even at the earliest stages of their ventures.

Bridge Alpha offers non-repayable funding from NCRD for creating an investment vehicle. The network creates an ecosystem aiding the incubation of spin-off vehicles. The projects with the highest commercialisation potential are selected through the investment vehicle. Thanks to support during proof-of-principle and proof-of-concept stages and other services required to convert the vehicle into its spin-off, the projects can enter the market. Budget for one vehicle varies between 5 and 20 million PLN and the non-repayable funding from NCRD constitutes for 80% of the sum. Individual projects can get up to a million PLN. The application process was opened on October 1st, 2014.

BENEFICIARY COMMENT

StartVenture@Poland deals with selecting the most prospective scientific projects characterised by rational business models from Poland and the region. It's a first initiative on such a scale as the complexity of business and sciences in other languages is one of the biggest obstacles in that field. Our portfolio includes one purely foreign project, two mixed ones and two strictly Polish ones. When it comes to effectiveness we are the best out of all ten BRIdge Alpha vehicles - we have two fully operational vehicles who received funding, two projects at the final stage of incubation and one just starting.

The fund is opportunistic: it selects project from all information, agro-tech, bro-tech, nano-tech and big-data industries. What's our biggest challenge? The shyness and lack of courage of revolutionary scientists, who have created innovative solutions yet have no courage to attempt and commercialise them. But we are increasingly successful in supporting them.

The cooperation with NCRD was fluid and common-goal oriented. Our coordinator was always available and was of great help to our company. We were also very happy with the networking platform that was supplied, and great communication with research institutions, especially important in our field of work.

MACIEJ SADOWSKI
StartVenture@Poland manager

NCRD – AREAS OF WORK

The key competency of the NCRD is to support innovativeness of Polish economy. The innovativeness aids the improvement of quality of life, and pushes our country into the 21st century. In the following sections of this report we will present key programmes implemented by the Centre. Every section is concluded with a detailed description of a project realised in a given field. This panoramic view of activities showcases the complexity of supporting variety of the industries and the effects that could be reached by supporting creativity and courage.

HEALTH AND QUALITY OF LIFE

The average life expectancy of a Polish man is 72 years, with his female counterpart averaging at 81, according to data released by the Central Statistical Office. It is approximately 6 years more than during the fall of the Berlin Wall a quarter of the century ago. Longer life expectancy has mainly been caused by the advances in medical technology and diagnostics, which positively influences health and quality of life. That is why NCRD supports the development of innovative medical projects which guarantee safety and comfort of work for Poles.

The aim of NCRD's activities is an effective higher education through supplying students with practical skills aiding their employability. In order to achieve that, the investment in increasing: the quality of higher education, interest in life and/or technical sciences, and qualifications of the R&D staff must be made.

Programme	Number of projects	Total value of projects	Total value of funding
Strategmed	11	252 522 181	226 031 634
Innomed	17	191 501 574	110 193 299
IMPROVEMENT OF WORK SAFETY IN MINES	12	26 846 836	20 648 572
IMPROVEMENT OF WORK SAFETY AND WORKING CONDITIONS	74	89 642 456	89 642 456
SOCIAL INNOVATIONS	15	11 545 292	10 255 033
OP: HC	1014	4 205 207 341	4 202 221 208
Polish Artificial Heart (completed)	1	19 225 703	19 225 703
PO KL	1014	4 205 207 341	4 202 221 208
Total	1144	4 796 491 383	4 588 575 449

OPERATIONAL PROGRAMME: HUMAN CAPITAL

NUMBER OF PROJECTS/ACTIVITIES: 1014

VALUE OF ADDITIONAL FUNDING: 4.20 BILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 4.21 BILLION PLN

The Operational Programme: Human Capital is an answer to the challenges posed before EU member states, including Poland, by the renewed Lisbon Strategy – that aims at making Europe a more attractive place to invest and work in, and advancing knowledge and innovation alongside stable job-creation.

The programme is driven by investment in the following areas: employment, education, social integration, development of adaptive potential of workers and enterprises, as well as activities leading to creation of efficient and successful public administration of all levels and implementing good governing. The main objective is the increase of employment and social consistency.

Priority 4 of the Operational Programme: Human Capital, for whom the National Centre for Research and Development is an intermediary, is concentrating on the quality of higher education institutions and science in general. The improvement in quality is done through creation of positive organisational environment for the higher education institution, as well as through the implementation of developmental programmes. The systemic support is aimed at the analysis of Polish higher education system, highlighting of its shortcomings and development of management tools that will aid higher quality of education. The works in the field of innovating and bettering of educational systems, as well as the standards of international accreditation applicability will lead to increase in openness and mobility of the academic sphere.

The assumption is, with the implementation of the Priority 4 of the OP: HC, the education will have a better fit with the requirements of modern economy and the job market, the higher education institutions will provide better quality service, the maths, sciences and engineering courses will be more attractive to students, and the R&D sector will have a better qualified workforce.

INNOMED

NUMBER OF PROJECTS/ACTIVITIES: 17

VALUE OF ADDITIONAL FUNDING: 110.193 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 191.502 MILLION PLN

INNOMED is a support programme for R&D in the field of innovative medicine. It's directed at subjects that run R&D and aid implementation of innovative technologies in the field of discovering and developing new drugs and therapies, personalisation of therapy and prevention, and innovative technologies in production of generic drugs. The programme encourages the cooperation from scientific groups in possession of appropriate and useful know-how and proper research infrastructure, and R&D divisions of pharmaceutical companies. The main driver behind it is to improve the innovativeness of Polish economy, and to increase the availability of modern medical supplies for the Polish people.

The programme is being executed with cooperation from the enterprises united under the Polish Technological Platform for Innovative Medicine (pol. Polska Platforma Technologiczna Innowacyjnej Medycyny). The budget totals at 300 million PLN, with 195 million PLN coming from NCRD, and 105 million PLN being supplied by the enterprises surrounding the PTPfIM.

STRATEGMED

NUMBER OF PROJECTS/ACTIVITIES: 10

VALUE OF ADDITIONAL FUNDING: 203.682 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 227.688 MILLION PLN

The program covers the prevention and treatment of diseases of affluence. Its role is to support R&D aimed at use in the areas such as: prevention, diagnostics, therapy and rehabilitation of diseases of affluence, as well as actions that are to prepare the results of research for the implementation. The relevant areas of medicine covered by the programme are: (1) cardiology and cardiac surgery, (2) oncology, (3) neurology and senses, and (4) regenerative medicine. The programme is to stimulate the growth of innovation and competitiveness of the Polish economy in areas such as biotechnology or biomedical engineering. It will result in the compilation and implementation of new preventative, diagnostic, therapeutic and rehabilitative methods. Additionally, the programme will give Poland an edge in the international market of R&D, create young, dynamic international research teams, and will aid the integration of know-how and new technologies from Polish scientific institutions (public research organisations) into the economy.

IMPROVEMENT OF WORK SAFETY IN MINES

NUMBER OF PROJECTS/ACTIVITIES: 12

VALUE OF ADDITIONAL FUNDING: 9.077 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 10.997 MILLION PLN

The aim of this project is to develop organisational and technical solutions which minimise threats and improve work safety in mining plants. The research topics come from the recommendations of the committees which, since 2000, are investigating the instances of mining accident, per request of the President of State Mining Authority. The projects undertaken focus mainly on methane and fire threats, mine rescue service; as well as hiring of workers working under hazardous conditions. The research teams have already completed a series of improvements, including: the framework for mining jobs' design, the rules for measurements and parameters of the air in the mines in order to assess methane and fire threats. The works on developing apparatus that could measure and diagnose cables and electro energetic wires in the sites vulnerable to methane explosions and carbon residue have been completed.

The program will also increase work safety in mines by developing a functional wireless communication system for emergency services, as well as a gasometric system that will immediately turn off an electric current during a methane leak.

IMPROVEMENT OF WORK SAFETY AND WORKING CONDITIONS (3RD STAGE)

NUMBER OF PROJECTS/ACTIVITIES: 12

VALUE OF ADDITIONAL FUNDING: 31.5 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 31.5 MILLION PLN

The main aim of the programme was to create innovative organisational and technical solutions for the development of human resources and new products, technologies, methods and management systems, whose use will help reduce the number of people working in hazardous environments, as well as decrease accidents and occupational diseases resulting in social and economic losses. The programme will run during 2014-2016. The National Centre for Research and Development financed the part B - R&D programme - of this project, for which it will give, during the 2014-2016 period, 31.5 million PLN to the main coordinator and contractor of the program - the Central Institute for Labour Protection - National Research Institute (CIOP-PIB).

DEVELOPMENT OF ROAD INNOVATIONS

THE PROGRAM'S BUDGET: 50 MILLION PLN

The RID programme commenced under the cooperation of The Centre and the General Directorate of National Roads and Motorways in order to support R&D in the field of road construction. The goal of the project is to create and implement research on increasing the road safety, improve traffic management systems, as well as designing optimal standards for planning, design, technology and construction and maintenance of roads in Poland.

SOCIAL INNOVATIONS

NUMBER OF PROJECTS/ACTIVITIES: 15

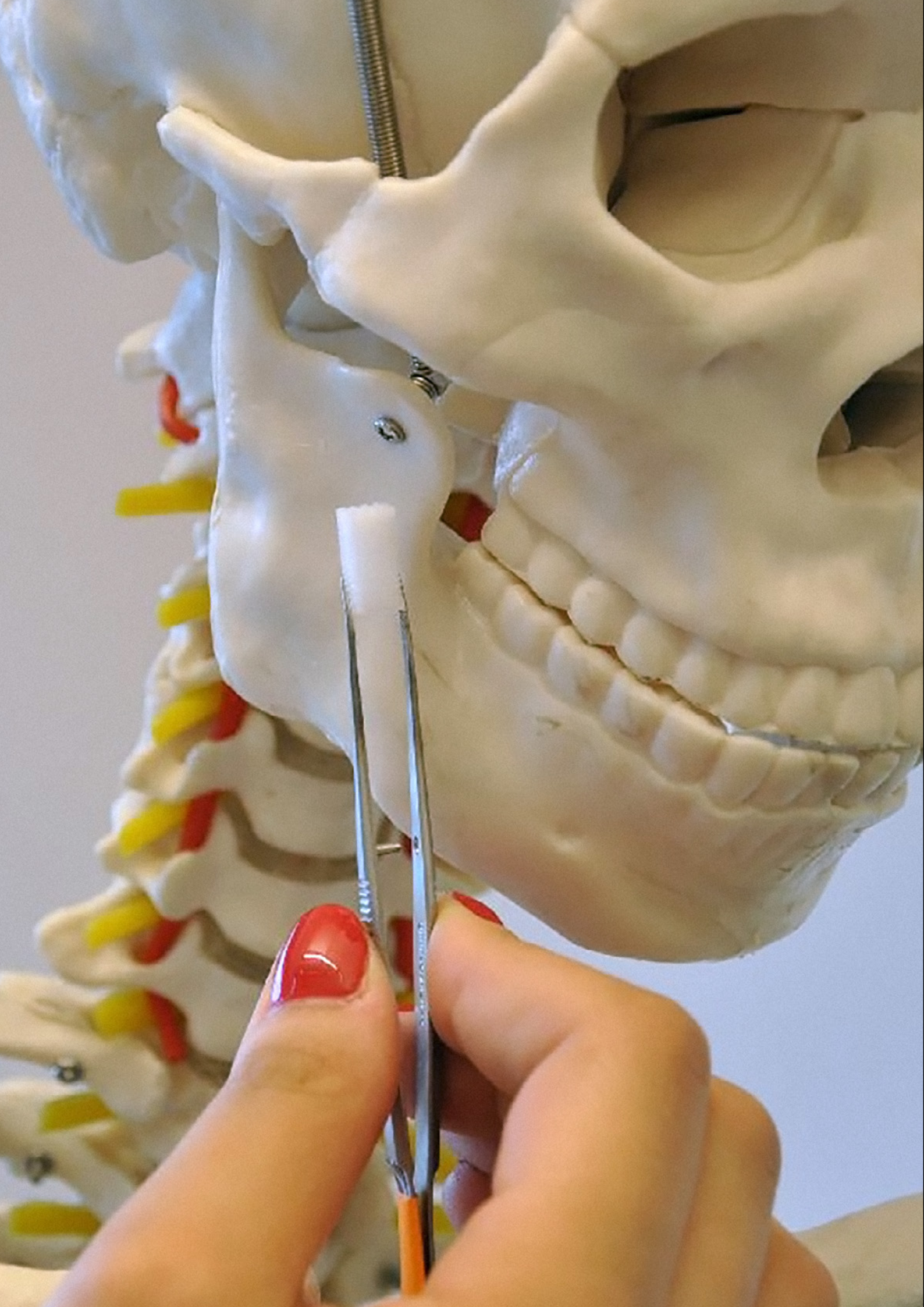
VALUE OF ADDITIONAL FUNDING: 10.255 MILLION PLN

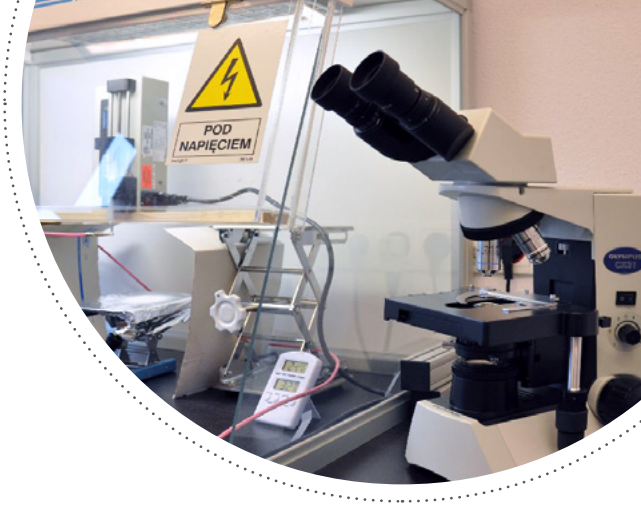
TOTAL VALUE OF FUNDED ACTIVITIES: 11.545 MILLION PLN

The idea behind the Social Innovations Programme was to take actions which stimulate social development, as well as societal wellbeing. Its main task is to increase the quality of life, taking under special consideration those groups and areas that truly need innovative solutions and undertaking of new social initiatives.

The programme was created in order to support the science industry, its economic environment and non-governmental organisations in undertaking and executing innovative activities and social initiatives, based on the achievements of science and engineering.

The increase in the number of implemented innovative technical solutions and products, services and procedures allowing for solving complex social problems; and the increase of inter-industrial cooperation on the local, regional and national level are the aims of the programme. It's aimed at consortia, which include at least one scientific unit and at least one entrepreneur, or at least two scientific units with the obligatory participation of a non-government organisation having legal status and its base in Poland. The programme offers three instruments of support: additional financing for scientific units and non-governmental organisations, public funding for research and development for entrepreneurs, and de minimis support for actions leading to implementation of the results by entrepreneurs.





TAILOR-MADE IMPLANTS

Reconstructive plastic surgery is very challenging after bone cancer operations. The surgeons are aided by tissue and material engineers, who, under cooperation with many doctors, are designing modern bio-implant.

Although bone cancer is not very common, it favours the young and the children. Bone cancers amount to as much as 7% of all malignant cancers in children. One of the most challenging things after an operation is regeneration and reconstruction of bone tissues, especially if the tumour was around ones head or face.

The researches from the Oncology Centre of Mary Skłodowska-Curie Institute in Warsaw, working on a project 'Bio-implants for treatment of bone tissue decrements in cancer patients' financed by the European Regional Development Fund (ERDF) under the Operational Programme: Innovative Economy, tried to face that challenge.

The aim of the project is the design and prep for implementation of a new and innovative Polish product - bio-implant. Because of the interdisciplinary nature of the topic, experts in material and tissue

PROJECT:

BIO-IMPLANTS FOR TREATMENT OF BONE TISSUE DECREMENTS IN CANCER PATIENTS

BENEFICIARY:

WARSAW UNIVERSITY OF TECHNOLOGY

VALUE OF THE PROJECT:

32,341,095.30 PLN

YEARS:

2010-2013

AREA OF SUPPORT:

SUB-ACTION 1.1.2 OF OPERATIONAL PROGRAMME: INNOVATIVE ECONOMY

engineering from Warsaw University of Technology and Wroclaw University of Technology are also working on the project, with Medical University of Warsaw also being a part of the consortium.

How to create a perfect bio-implant? For the human body not to reject it, it needs to be 'grown out' using stem cells of the patient. The proposed product is a tailor-made solution for the patient. Using digital tomography and computer systems supporting its design, including 3-D printers, the optimal shape is produced. Then appropriate skeleton is built from bio-degradable polymers, and then bone tissue is being grown on the skeleton, while the experts add necessary for bone and cardiovascular vessels growth factors. An implant is introduced into the patients body during the reconstructive surgery. The decrement is filled by the implant soon after the operation.

The researchers are trying to get funding for trials with cancer patients, in order to assess the technology the most accurately. It's possible that the bio-implants will be available in clinics sometime soon.

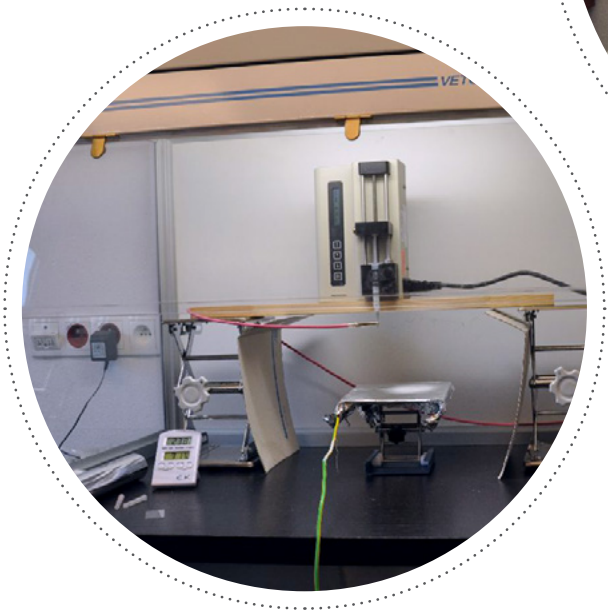
BENEFICIARY COMMENT

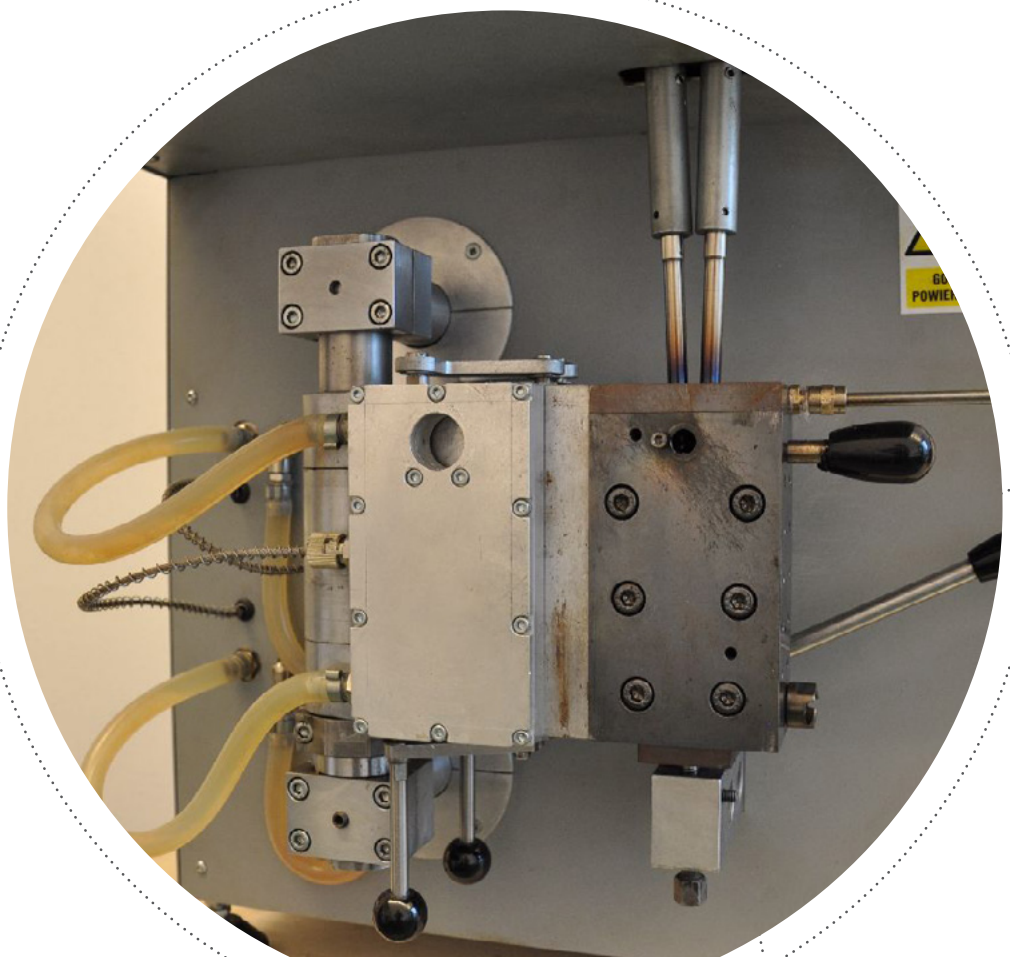
Project Bioimplant was a big challenge for us. On one hand, we needed to coordinate actions of several research teams, doctors, biologists and engineers. The success of the entire venture depended on results and milestones achieved during each tasks. On the other hand, we faced technological challenges while creating tailor-made implants that were a few centimetres in size.

Bioimplants will be first introduced in patients participating in a 1st stage of a clinical trial, which we already planned. Wide use of the technology will be possible after successful trial, probably in the next few years. We have great hopes for the trial, as it will be not only a cherry on top for our research but also a real help for craniofacial cancer patients.

We've been observing Polish market for biotechnologies – implant manufacturers, medical clinics and clinical trials, and all of them, including patients' associations, are obviously in need and expectation of modern biotechnologies. However, financial potentials of enterprises cannot meet the expenditure needed for such costly undertakings (e.g. clinical trials). In this case, NCRD funding allows for execution of important, needed and risky projects.

WOJCIECH SWIESZKOWSKI DSc, Eng.
Head of the project





THE STUDENTS FEEL OLD

There was no way to get through to the patient. He would scream that someone wants to take him away, he would forget where he was. The doctor, let's refer to her as Dr Smith, had half an hour to calm him down, run some tests, diagnose him and come up with the treatment plan.

After 30 minutes on the dot the patient stopped speaking. The doctor and the rest of staff left him alone, sat down in front of a TV and began watching a recording of their actions in past half an hour. Dr Smith wasn't acting like a real doctor. No wonder, she'll become a real doctor in couple of years. Now, similarly to the rest of them, she's studying medicine in the Medical University in Lublin, the patient is just a recording of one of her tutors, and the entire situation has been a simulation. This is how the students of the University learn how to perform their future jobs.

The simulations are part of the "MEDFUTURE – Future medical professions", created at the University in order to put the knowledge gained during the studies into practice. Its main focus is genetics and geriatrics, because, as the authors of the project say, those are the

PROJECT:

MEDFUTURE FUTURE MEDICAL PROFESSIONS

BENEFICIARY:

MEDICAL UNIVERSITY IN LUBLIN

VALUE OF THE PROJECT:

2,388,517.50 PLN

YEARS:

2013 2015

AREA OF SUPPORT:

ACTION 4.3 OF OPERATIONAL PROGRAMME: HUMAN CAPITAL MODERN SCIENCE

fields of the future. Nowadays, 17% of Poles are senior citizens, and in 10 years a quarter of the nation will be at the retirement age. As the rest of Europe has similar demographical make-up, those fields of medicine soon will become very relevant.

The project consists of several segments. It's available to every one of the 1300 students at the University. Yet every faculty has a different action plan. For example the nursing students, taking part in the "specialistic care for the elderly" module can simulate feeling... old. They can do it by wearing a special costume that puts pressure and weight on different parts of the body and special glasses that deteriorate your vision. After wearing this costume the student will face and feel the same challenges that elderly people face every day - worsened vision, reduced mobility, reduced dexterity and joint stiffness.
Future pharmacologists get to participate in clinical pharmacy course. They study patient communication, anatomy and e.g. parenteral nutrition. If it wasn't for the course, the practical knowledge would have to be gotten during their post-uni jobs.

The students interested in genetics and maintaining a high GPA are allowed to write their bachelor and master theses in this area. Apart from their thesis supervisors they need a merit-based supervision and funding for additional components needed for research, as well as participation in conferences on the topic.
All the modules offer regular meetings with prospective employers, and dozens of hours of internships and practical work in places that other medical students are rarely considered - e.g. hospices, health centres and geriatric departments of hospitals.

Does this really have the potential to help students? MEDFUTURE has been working for over a year, but the authors claim the positive effects of its implementation are already visible. Students partaking in the simulations are far better while at hospital internships: they have greater knowledge, better responses and make better decisions.

BENEFICIARY COMMENT

Over 1000 people, from almost every year and course in the university have already taken part in the project. Modules for medicine students are the most popular, as well as soft competencies workshops. The classes run in natural work environment e.g. animal houses, psychiatric ward of hospitals or nordic walking as a tool of revitalisation of elderly are the most popular, as well as those taking place in actual hospitals, hospices and social aid facilities.

NCRD, for us, is not only an institution implementing the project, but also the most helpful of aids and partners. We are glad to have worked with competent staff that always dishes out appropriate advice. Their openness to all things new and innovative is of great importance to us.

MAŁGORZATA KOSTRUBIEC-WÓJTOWICZ
project's coordinator, Medical University in Lublin

MODERN SCIENCE

We know that Polish scientists can invent genius things. We also know that they need help in commercialising their research. This is why we highly encourage scientific units to take up courageous experiments, and the entrepreneurs to stay on top of what is happening in the laboratories. We invest in modern science, which is an engine for innovative economy – not only in Poland, but also in Europe.

Programme	Number of projects	Total value of projects	Total value of funding
Interdisciplinary System Of Interactive Scientific And Techno-Scientific Information	1	67 859 297	67 859 297
Demonstrator+	45	753 788 463	423 265 458
Ini-tech	11	56 566 118	31 602 409
The Leader	155	163 473 496	163 464 857
Patent Plus	44	12 075 470	9 325 312
InnoTech	285	980 710 107	624 045 288
Innovation Creator	26	10 517 063	8 964 878
Graf-Tech	15	71 390 508	65 868 272
Applied Research Programme (ARP)	330	1 064 657 213	980 398 839
Developmental Research Projects	63	120 187 967	118 250 097
Tango	-	-	-
Operational Programme: Infrastructure And Environment	42	2 610 999 331	2 219 349 431
TOTAL	1017	5 234 225 033	4 712 394 138

INTERDISCIPLINARY SYSTEM OF INTERACTIVE SCIENTIFIC AND TECHNO-SCIENTIFIC INFORMATION

NUMBER OF PROJECTS/ACTIVITIES: 1

VALUE OF ADDITIONAL FUNDING: 67.86 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 67.86 MILLION PLN

With the working name of SYNAT, a universal, open, repository hosting platform, which will enable scientists, academic professionals and members of society to access the knowledge resource network has been created under this strategic programme. The platform allows for creation of multiple, diverse databases for aggregation, indexing and sharing of digital information. The solution consists of components allowing for collection of the data, its processing, analysis and enrichment, as well as sharing it with the final user. The project was executed by the scientific network consisting of 16 leading scientific units, which are led by the Interdisciplinary Centre for Mathematical and Computational Modelling at University of Warsaw.

DEMONSTRATOR+

NUMBER OF PROJECTS/ACTIVITIES: 45

VALUE OF ADDITIONAL FUNDING: 423,26 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 753,79 MILLION PLN

The aim of this pilot scheme is to strengthen the transfer of research results through supporting R&D works in the new technology or product creation containing the testing of the created solution in a demonstrative scale. It would be available for entrepreneurs, scientific consortia and research organisations.

- Support for R&D works in demonstrative scale DEMONSTRATOR+ in the TECH area, designed for interdisciplinary direction of research in new technologies in energetics and modern material technologies
- Support for R&D works in demonstrative scale DEMONSTRATOR+ in the INFO-BIO area, for interdisciplinary direction of research within advanced information technologies and telecommunication, natural environment, agriculture and forestry, and diseases of affluence, new drugs and regenerative medicine

The aim of the systemic projects is a pilot scheme of the modern selection and management mechanism for projects on every technological readiness level, which are to test the newly developed technology or product in the demonstrative scale. The systematic project will allow for the testing of modern selection and management mechanisms for projects on the commercialisation of results stage of the research in the context of the new financial perspective of the European Union for the 2014-2020 period.

THE LEADER

NUMBER OF PROJECTS/ACTIVITIES: 155

VALUE OF ADDITIONAL FUNDING: 163,46 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 164,47 MILLION PLN

The programme is aimed at young scientists who want to gain experience in leading the execution of a research project, and increase their skills in building, managing and heading their own research team. The programme also stimulates the cooperation between scientists and entrepreneurs via the execution of activities that have implantation and commercialisation potential. Additionally, it improves inter-industrial and inter-university mobility, as well as the one between scientific units.

PATENT PLUS

NUMBER OF PROJECTS/ACTIVITIES: 44

VALUE OF ADDITIONAL FUNDING: 9,32 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 12,07 MILLION PLN

The programme aims to stimulate the improvement of the management of scientific units and enterprises' intellectual property via the process of applying for international patent protection for their R&D results. The main goal is to increase the number of submitted patent applications, and thus to increase the protection of industrial intellectual property created in Polish research organisations (scientific units) or created through the cooperation of Polish research facilities with entrepreneurs. It should also help to intensify the commercialisation of the created inventions.

INNOTECH

NUMBER OF PROJECTS/ACTIVITIES: 305

VALUE OF ADDITIONAL FUNDING: 641.977 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 1.007147 BILLION PLN

INNOTECH was created to support the science and enterprises in the development of technological innovations in different fields of science and different industries (In-Tech path), with a special interest in high-tech (Hi-Tech path). The programme is aimed at subjects undertaking R&D and implementation activities in those areas. Both scientific-industrial consortia, and MSE and big enterprises can be beneficiaries.
It aims at encouraging enterprises' spending on R&D serving the economy, as well as at strengthening the cooperation between universities, scientific units from the public sector, and businesses. The programme has been divided into two paths. The In-Tech path is designed for the subjects undertaking industrial and/or developmental research as well as the preparation for the implementation of the results, with the goal of creation and implementation of innovative technologies, products and services, increasing the competitiveness of the Polish economy. It would also influence the % GDP produced by the high-tech industry.

INNOVATION CREATOR

NUMBER OF PROJECTS/ACTIVITIES: 115

VALUE OF ADDITIONAL FUNDING: 44.435 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 50.358 MILLION PLN

The program allows for the execution of projects supporting widely understood commercialisation of R&D. Its task is to increase the activity of public research organisations and entrepreneurs in the context of the commercialisation of knowledge, especially through the development of commercialisation systems for R&D results from public research organisations to enterprises, intensification of informative, educational and training activities concerning the commercialisation of knowledge in public research organisations, and the promotion of entrepreneurship amongst students, graduates and university/scientific units staff. This is to increase the number of commercialised technologies and solutions.

GRAF-TECH

NUMBER OF PROJECTS/ACTIVITIES: 15

VALUE OF ADDITIONAL FUNDING: 65.868 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 71.391 MILLION PLN

The programme's support covers R&D and preparation for the implementation of the results in the products based on the use of unique properties of graphene. The range of potential uses includes: electronics (flexible transparent diodes, touch screens, RF devices, micro-systems, photoelectric sensors, so-called "flexible electronics", CMOS transistors), aeronautics and car industry (light carbon composites, hydrogen cells), manufacturing and storing of energy (batteries, super-condensers, solar cells), medicine (DNA analysis, pharmacology, prosthetics, bacteriology), material engineering (light and durable composite materials), and environment preservation (e.g. new pollution sorbents).

The main task of the programme is to increase the competitiveness of the Polish economy by applying the results of the research to compile and implement innovative solutions based on the uses of graphene. The detailed aim is to strengthen the cooperation between scientific units and entrepreneurs interested in using the results in practice and increasing Poland's competitiveness in terms of use of our science in advanced technologies through stimulating the cooperation and integration of subjects researching the uses of graphene.

APPLIED RESEARCH PROGRAMME (ARP)

NUMBER OF PROJECTS/ACTIVITIES: 332

VALUE OF ADDITIONAL FUNDING: 982.631 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 1.067501 BILLION PLN

A horizontal programme supporting education industry and enterprises in applied research on various fields of sciences (programme path A) and industries (programme path B).

Applied research is defined as research undertaken to acquire new knowledge, that has particular practical applications and is done by searching for new possible practical applications for the research results, or new solutions that will fulfil previously set targets.

The ARP incorporates two approaches. Firstly, the research is undertaken with the aim of gaining new knowledge in a particular field of science, having practical applications (e.g. research on a material that exhibits particular properties that may be useful for use in specific products or technologies - path A). Secondly, the research is underrated with the aim of fulfilling previously set practical targets, e.g. through application of new solutions in particular industries (e.g. modification of a material used in the specific product in order to improve its parameters - path B).

INI-TECH

VALUE OF FUNDING: 31,6 BILLION PLN

NUMBER OF PROJECTS/ACTIVITIES: 11

TOTAL VALUE OF FUNDED ACTIVITIES: 56,57 `BILLION PLN

The programme aims at creation and deepening of the relationships between Polish scientific units and enterprises in regards to science and technology. The cooperation will lead to creation and development of new products and technologies with high potential for innovation and its implementation. The programme is open to entrepreneurs, scientific units that are not enterprises and scientific-industrial consortia.

DEVELOPMENTAL RESEARCH PROJECTS

NUMBER OF PROJECTS/ACTIVITIES: 776

VALUE OF ADDITIONAL FUNDING: 1.674154 BILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 1.000501 BILLION PLN

Developmental research projects consist of industrial R&D aimed at practical application of the results, and their planned conclusion is the implementation of the results in economy or social framework. Both scientific units and scientific-industrial consortia can apply for funding.

TANGO

DATE OF THE COMPETITION: AUGUST 8TH, 2014

NUMBER OF APPLICATIONS: 74

ALLOCATION IN THIS COMPETITION: 71.391 MILLION PLN

The programme is a joint undertaking of the National Centre for Research and Development and National Science Centre and fulfils the missing role of the implementation, in socioeconomic practice, of results obtained from basic research. Its main task is to increase the usage of basic research in innovative processes in economy-related ventures. Its detailed aim is to support innovation in the creation of modern technologies, products and services, as well as supporting the cooperation of scientific units with businesses.

OPERATIONAL PROGRAMME: INFRASTRUCTURE AND ENVIRONMENT

NUMBER OF PROJECTS/ACTIVITIES: 42

VALUE OF ADDITIONAL FUNDING: 2 219,35 BILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 2 611 BILLION PLN

The main task of the Programme is the improvement of perceived allure of Poland as an investment arena through the development of technical infrastructure alongside the protection and bettering of the state of the environment, health, while keeping cultural integrity and territorial sovereignty intact.

- Under the OP: I&E, NCRD acts as an intermediary for the Priority 13: Infrastructure for Higher Education. Its main aim is the development of modern academic centres training experts on modern technologies.
- It has been divided into two intermediate aims: the modernisation of higher education infrastructure and increase in the number of students majoring in the priority courses and the increase in the quality of education through applying ICTs.

The support is available for leading educational centres in the country that have appropriate didactic potential that allows them to run both 1st and 2nd degree courses (Masters and PhDs). Eligible entities have to fulfil internationally acclaimed standards, and the implemented projects ought to relate to: construction, reconstruction or expansion of existing infrastructure (construction of modern lecture theatres and laboratories, including purchase of specialist apparatus and other modern solutions applying ICTs in education. The undertakings could be a construction, modernisation or expansion of support infrastructure used by student body (e.g., a university sports facility). The complexity of the project (e.g., the purchase of new equipment alongside the infrastructure modernisation) is one of the requirements for the support.

The assumption is, with the implementation of the Priority 13 of OP: I&E, the quality of education in the scope of modern ICTs will improve, and the students will have increased access to modern tools and information technology techniques, with the creation of environment that aids participation of Polish higher education entities in European projects - both educational and research-based.

CONCRETE FOAM

If it wasn't for the day few years back, when a certain entrepreneur was giving a presentation at the University which the PhD student attended, she would have never gotten into foam/concrete. And now, as a doctor, never would have started the research that could change the future of Polish roads.

Her name is Marta Kadela, and she's a doctor from the Building Research Institute. She was awarded an NCRD grant for her research on increasing endurance of weak surfaces through the use of concrete foam.

Car owners are trying to fight the weak surfaces on the roads with multiple tools - adding various binding materials, cement, calcium or even changing the soil. But all of them are expensive and not efficient in the long run. After some time, the artificial solutions start to crack and break and the shortcomings of the ground begin to crack the asphalt as well, which can be commonly noticed on many Polish roads. Marta Kadela believes that she found a solution - concrete foam.

PROJECT:
MEDFUTURE FUTURE MEDICAL PROFESSIONS

BENEFICIARY:
INSTITUTE OF CONSTRUCTION TECHNOLOGY

VALUE OF THE PROJECT:
1 199 990,00 PLN

YEARS:
2014-2016

AREA OF SUPPORT:
LIDER

It's cheap, light, and flexible and it could disperse the weight coming from above more equally. It could eliminate the cracking of the surface as well, leading to better quality roads that are easier in maintenance.
Two challenges are ahead of the scientists. First is to find an optimal recipe for the compound. Secondly, they'll need to assess the appropriate design of the layers, suitable for particular constructions and soil-water conditions. And even though concrete foam has been used in construction for over 60 years, hitherto it has been used mostly to fill void spaces. That means there are no studies on its durability, and this is why the scientists from the Building Research Institute ought to test it out in diverse conditions, under different loads, with different weather conditions, such as snow or rain. The researchers will see how the material acts while being stretched, compressed, cut through. To see what could happen in many years to come, the concrete foam samples are placed in special "ageing" chambers.

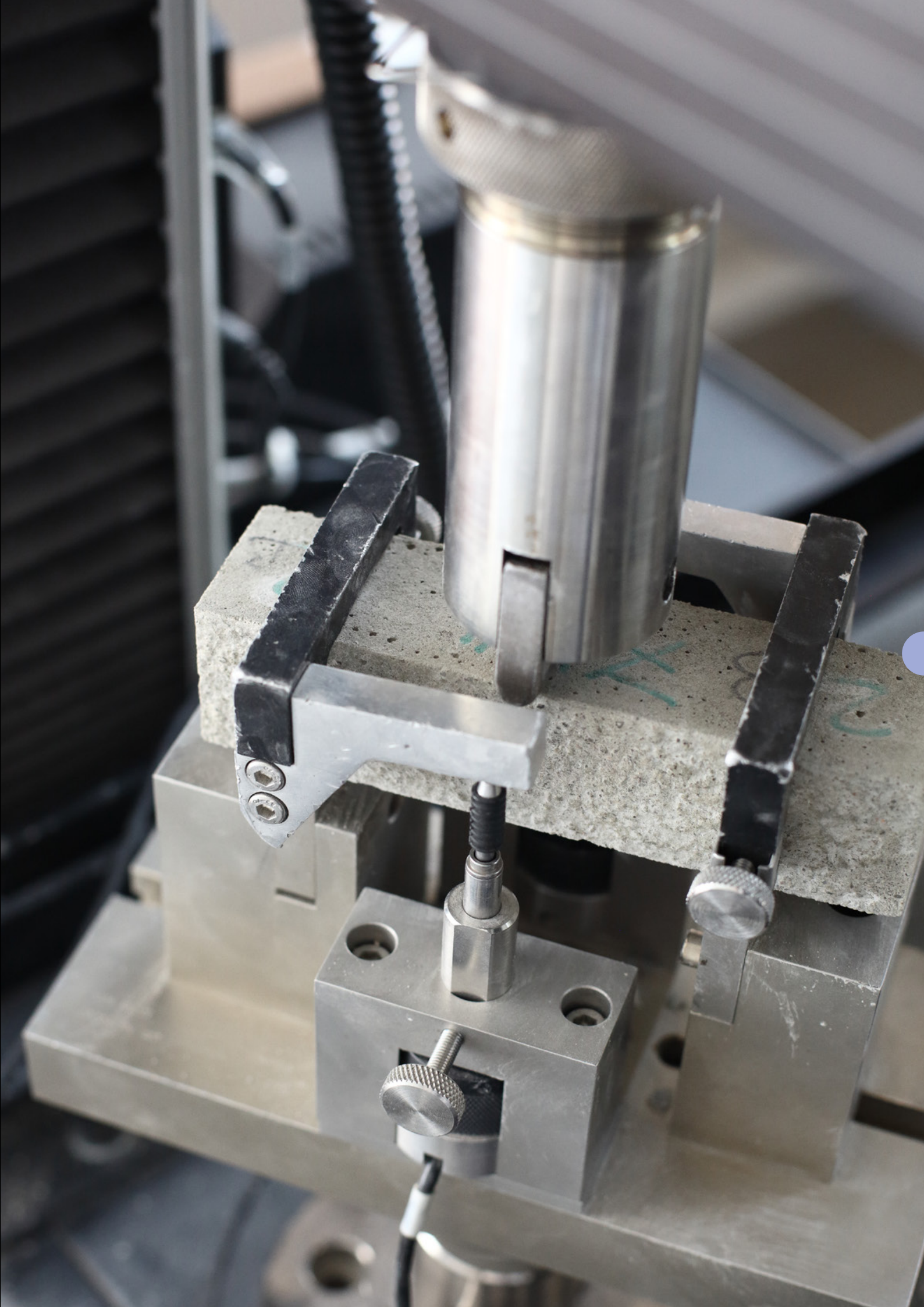
Soon enough concrete foam will leave the research laboratories to be tested out in research polygons. The researchers are cooperating with two construction companies that are interested in its use. If the research is proved successful, the companies would like to adapt the technology at their sites. The demand is certain to spike, as the good ground for roads in Poland is long used - now it's the shaky, weak surfaces that will have the roads built on them.

BENEFICIARY COMMENT

I've been interested in road construction since university. The idea for concrete foam came when I heard about its use in plumbing. With my then supervisor I began research on the use of concrete foam in dispersing of weight in layered construction, such as roads, parking lots or ground surfaces. At this moment we already had some firms expressing interest in the results and implementation of the long-run research. It's a solution attractive to business, as is both cost- and time-efficient in comparison to other ground strengthening methods.

I'm glad that NCRD has seen the potential of my idea, and thanks to the training for The Leader programme finalist, during which the experts advise on patenting and implementation of innovative ideas, I learnt to better present my research. I've been working on my managerial skills as well - NCRD supervises our reports, so I'm continuously improving at running and costing the project, and criticism from experienced experts assures the quality of my work.

MARTA KADELA DSc.
Head of the project




Destylatorka nr
TUTAJ
MYJEMY
TYLKO
WODĄ

BIOTECHNOLOGY IN A NEW LIGHT

It's the biggest investment of University of Wrocław in recent years. The new building for Faculties of Biotechnology and Chemistry have cost the school 55 million PLN, with 40 million coming from EU subsidies. What would happen if the new building had not been built?

Probably, the University of Wrocław wouldn't become a Leading National Research Centre. If it wasn't for the new building, Wroclaw's biotechnology would not have 200 students enrolled. New specialised courses (such as computer science-led biotechnology, or biotechnology taught in English) would not be available. It also allowed for Wrocław to welcome students from: China, Nepal, Nigeria or Tajikistan. And most importantly, the new building let the scientists conduct new research. Before that, the staff had to work in sub-par facilities lacking the apparatus and laboratories.

The new investment is a four-story building, with ground floor accommodating the library, administration suites and computer labs. The first level houses three auditoriums, laboratories and tutorial rooms. Levels two and three have multiple laboratories with supporting technical facilities. Even the roof has been used as a greenhouse.

PROJECT:

THE CONSTRUCTION OF EDUCATIONAL-RESEARCH FACILITIES FOR BIOTECHNOLOGY FOR UNIVERSITY OF WROCŁAW

BENEFICIARY:

UNIVERSITY OF WROCŁAW

VALUE OF THE PROJECT:

55,215,174.06 PLN

YEARS:

2009-2014

AREA OF SUPPORT:

ACTION 13.1 OF OPERATIONAL PROGRAMME: INFRASTRUCTURE AND ENVIRONMENT

Some of the most interesting facilities built are e.g. phototronic chambers for plant vegetation, or, inspired by some German projects, the floor/ceiling technology for keeping the room temperature constant. The main building offers 170 laboratory work stations for biotechnological staff and the "bridge" part of the building has over 90 work stations for chemists. The new faculty facilities allow for experiments in semi-technological scope.

Wrocław's biotechnology is set on implementation. Researchers working in the new laboratories work e.g. on cells' membranes and drug application methods for cancer patients - the idea is to find a smart way to give medicine that will only act on cancer-ridden cells. The works on modified linen for wound dressings are also continued.

BENEFICIARY COMMENT

The project aided University's development in terms of infrastructure and course offerings. The high-end apparatus purchased intensified research and scientific undertakings. The facilities, with a total area of 11,529 (m sq), are fully wheelchair-accessible (and suited for disabled), have a greenhouse, modern laboratories and specialised support rooms. Thanks to intensified activities in both Biotechnology and Chemistry Faculties and the projects run by the Ministry of Science and Higher Education, the University was awarded a prestigious Leading National Research Centre label, where research is conducted on, e.g. molecular mechanisms of pathogenesis and selected diseases' markers; new diagnostic systems design or developing of new drugs. Many new students have enrolled to study Biotechnology, encouraged by new selection of courses and availability of some taught in English.

MAREK NOWAKOWSKI,
project's funding manager, University of Wrocław


DOL 33901

INNOVATIVE BUSINESS

The most important accomplishments of Polish business stemmed from courage. Even during years of economic downturn our companies invest heavily in R&D. We know that the instruments of support for courageous investments should be innovative and flexible. This is why we use e.g. venture capital funds - a revolutionary solution for public funding. We believe that Polish firms are an investment with a high yield of return.

Programme	Number of projects	Total value of projects	Total value of funding
InnoLot	11	283 314 333	160 005 003
BBRIdge: Research, Development, Innovation	12	204 986 000	167 986 000
CuBR	3	28 993 879	14 160 487
Go_Global.pl	44	10 240 580	8 311 244
Spin-Tech	30	13 241 000	12 548 000
Operational Programme: Innovative Economy	953	12 904 136 589	10 055 374 059
Specific Targeted Research Projects	8	47 251 849	23 211 842
TOTAL	1061	13 492 164 230	10 441 596 635

INNOLOT

NUMBER OF PROJECTS/ACTIVITIES: 11

VALUE OF ADDITIONAL FUNDING: 160.01 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 283.31 MILLION PLN

INNOLOT commenced in order to increase the competitiveness of Polish economy in the field of high-tech production for aviation industry, through increasing the number of innovative solutions implemented in the industry, as well as strengthening of the R&D cooperation between scientific units and entrepreneurs.

The beneficiaries are divided into two categories. Category A projects will be awarded between 10 and 50 million PLN. Category B projects can only be led by SMEs, and the funding will vary between 1 and 7.5 million PLN. The maximum duration of projects will be 5 and 4 years for categories A, and B respectively. The division was made in order to support SMEs in reaching their full R&D potential.

Solely scientific-industrial consortia can apply, with at least one entrepreneur being the leader of the consortium (for Category B project, only SME can be a leader), and at least one scientific unit.

BRIDGE: RESEARCH, DEVELOPMENT, INNOVATION

NUMBER OF PROJECTS/ACTIVITIES: 12

VALUE OF ADDITIONAL FUNDING: 167.99 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 204.99 MILLION PLN

BRIdge is an innovative tool aiding the commercialisation of R&D results through development, testing and implementation of new intervention instruments. The Centre has created a group of BRIdge projects in order to support the technology transfer from the academia into the economy. Various components will support R&D projects in the early stages of development (BRIdge Alpha), venture capital investment (pilot project of NCRD – Public-private funding of commercialisation of R&D results through venture capital – investment component) and project analysis in order to attract private equity investors (pilot project of NCRD – Public-private funding of commercialisation of R&D results through venture capital – advisory component).

BRIdge is aimed at entrepreneurs, higher education institutions, research institutes, PAS institutes and private persons (individual innovators). Micro-, and SM-entrepreneurs can expect preferential treatment, especially if they are a start-up created in order to commercialise R&D results.

2014 saw first contracts being signed under BRIdge Alpha, founding investments vehicles, which find innovative ideas in scientific circles in Poland (such as higher education institutions, research institutes, PAS institutes) and co-finance the verification process at proof-of-principle and/or proof-of-concept stages. The vehicles act as SPVs (Special Purpose Vehicles) and aid the early stages of R&D on new technologies, increasing the chances of being financed by private equity investors.

The extension of that project is BRIdge Info, aiming at supporting R&D results commercialisation through offering expertise to people directly engaged in the process. It encapsulates publications on the topic, and the bridge.gov.pl website that offer practical, law and organisational advice on intellectual property.

NUMBER OF PROJECTS/ACTIVITIES: 4

VALUE OF ADDITIONAL FUNDING: 18.528 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 204.986 MILLION PLN

CuBR is a joint undertaking from NCRD and KGHM Polska Miedź S.A. The program supports R&D in the non-ferrous metals industry. Its main task is to oversee joint operations for the creation and implementation of modern technologies, devices, materials and products, in order to increase the competitiveness of the Polish non-ferrous metals industry as a part of the global market and global economy. This, in turn, will allow Poland to achieve a leading position, especially in the production of copper.

The strategy is set to improve the efficiency of the production process (investing in new technologies, modernisation of infrastructure), the development of new mining technologies, new solutions in regard to the maintenance system, effective industrial risk management, and the development of the resource base through extraction of ones stuck deep down.

The effectiveness of the undertaking is constrained by the complexity and quality of the research and its level of implementability.

In order to maximise its effectiveness, four areas of expertise have been differentiated:

- mining and geology;
- ore handling;
- metallurgy, manufacturing, new materials;
- environment protection, risk management, business effectiveness;

GO_GLOBAL.PL

NUMBER OF PROJECTS/ACTIVITIES: 50

VALUE OF ADDITIONAL FUNDING: 9.486 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 11.581 MILLION PLN

The main task of the venture is to support innovative companies commercialising the R&D results in the world market. It also advances the creation of the entry strategy for the world markets; preparation of the developed innovations in accordance with the world markets' requirements; and verification of the strategy, especially through assessment performed by the venture capital institutions working in the world markets. The addressees of the venture are micro- and SME performing within high-tech (and medium high-tech) service industry. Supported industries include: ICT, construction, automatics and robotics, biotechnology and telecommunication.

NCRD's partners on that project include: US-Polish Trade Council, Plug and Play Tech Center, Fraunhofer MOEZ and Academic Incubators of Entrepreneurship (pol. Akademickie Inkubatory Przedsiębiorczości (AIP))

SPIN-TECH

NUMBER OF PROJECTS/ACTIVITIES: 31

VALUE OF ADDITIONAL FUNDING: 12.971 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 13.711 MILLION PLN

SPIN-TECH is a programme supporting the special purpose vehicles (SPV) created by national scientific units, especially those set up by higher education institutions, with an aim to commercialise the results of the R&D works. Thanks to SPIN-TECH the commercialisation of the R&D has been intensified through SPVs acting as intermediaries between the public sphere of R&D and the economy. IIt will also intensify the transfer of modern technologies from science to economy and accelerate the entrepreneurship development of scientists in Poland, by setting up spin-offs for the SPVs.

OPERATIONAL PROGRAMME: INNOVATIVE ECONOMY

NUMBER OF PROJECTS/ACTIVITIES: 1675

VALUE OF ADDITIONAL FUNDING: 13.63 BILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 17.28 BILLION PLN

The Operational Programme: Innovative Economy is dressed mainly to entrepreneurs who plan on introducing innovative projects in the scope of R&D, cutting-edge technologies, investments of great merit for the economy or implementing ICTs.

Its goal for 2007-2013 is the development of the Polish economy through supporting enterprises doing innovative work. The success will be measured by:

- increased innovativeness of enterprises;
- increased competitiveness of Polish science;
- increased importance of science in economic growth;
- increased number of innovative Polish products in the international markets;
- creating stable and better jobs;
- increased use of ICTs in the economy.

The main aim of the programme corresponds to mid-run goals of the Lisbon Strategy through using over 90% of its funds to fund R&D activities, innovations and ICTs. OP: IE falls the closest to the Lisbon Strategy.

The funds under this programme have been divided into so-called priority axes, allowing for achieving the main and the intermediate goals of the programme. The OP: IE is divided into 9 priorities (8 ones fully merit-based, and one of technical support).

The National Centre for Research and Development acts as an intermediary for the OP: IE for 2007-2013 within two priority axes: (1) Research and development of new technologies and (2) R&D infrastructure.

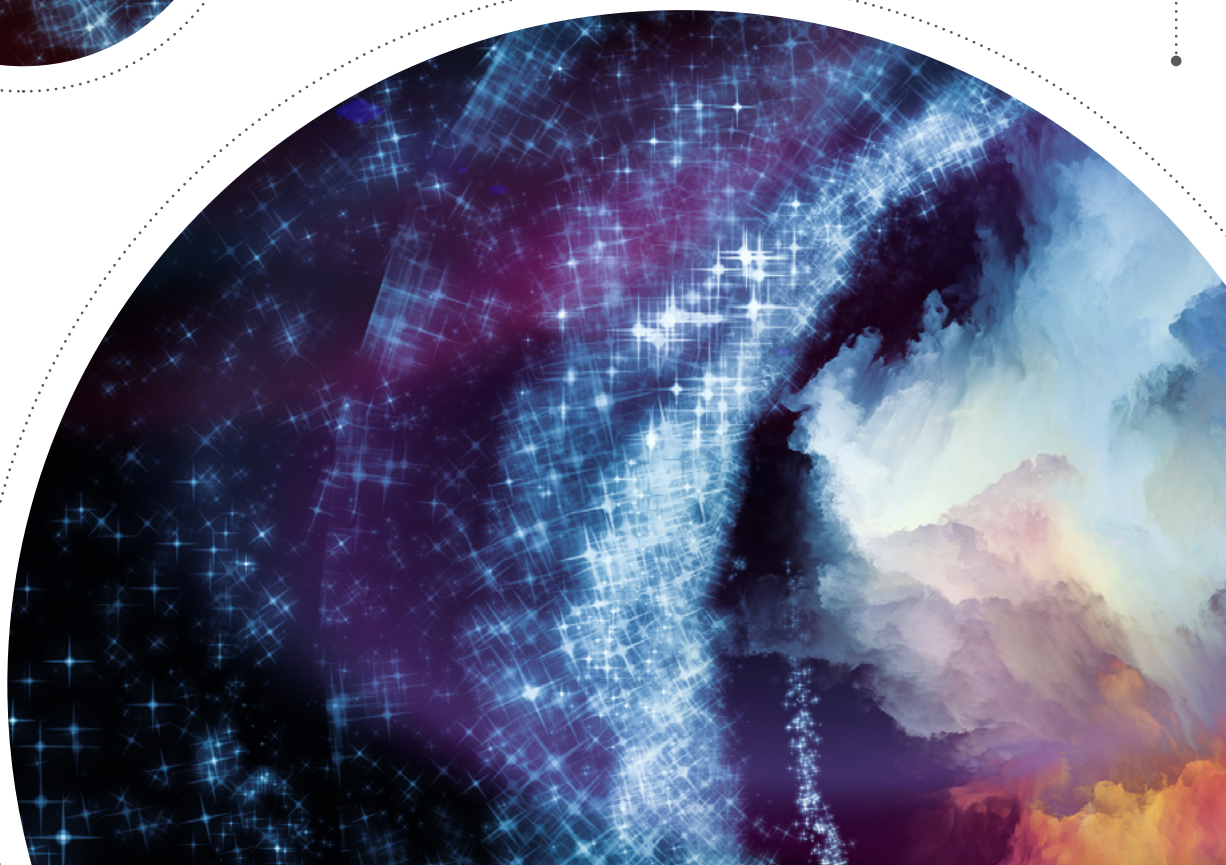
SPECIFIC TARGETED RESEARCH PROJECTS

NUMBER OF PROJECTS/ACTIVITIES: 151

VALUE OF ADDITIONAL FUNDING: 246.27 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 792.37 MILLION PLN

STREPs are projects that deal with redesign or modernisation of already existing technology. Funding is available for all feasible projects nominated by the entrepreneurs or other subjects that are able to implement the results directly.



ULTRALIGHT ENGINE IN THE AIR

Small, unmanned planes are on the rise - they are becoming more popular, they have increasingly more applications: they are used for aerial photography, border patrols and missing persons searches. Engineers from Eurotech company from Mielec in cooperation with the scientists of Rzeszów University of Technology created innovative, hybrid engine and advanced the unmanned plane industry.

Eurotech has been in small, unmanned plane business for years. The company heavily invests in research - a quarter of the team consists of R&D staff. Their research has been aided by several scientists from dozens of universities around the world. The newest invention of the Mielec team is an innovative hybrid engine tailor-made for the already manufactured planes. It's a niche in the market - the availability of quality engines for big planes is respectable, yet there is no one that supplies that for the small machines. As research showed, hybrid (internal combustion/electrical) engine would be the best solution, as it will give the plane for fly-time.

The project has been divided into several stages. Firstly, the experts will conduct necessary research and optimise the components of this hybrid. Next, the

PROJECT:

TECHNOLOGIES OF HYBRID ENGINE FOR LIGHT AND/OR UNMANNED AIRCRAFTS

BENEFICIARY:

EUROTECH SP. Z O. O.

VALUE OF THE PROJECT:

12,500,000.00 PLN

YEARS:

2015-2018

AREA OF SUPPORT:

INNOLOT

technical design of the system with steering mechanism and a clutch will be drawn, followed by the purchasing of the components. Consequently, a full demonstrative model will be built and the system will be tested out at special testing stations, as well as in-motion on a unmanned flying platform.
The creators believe that the technology will lead, in the long-run, to serial production of this unique engine on a world-wide scale.

BENEFICIARY COMMENT

Working on the idea of a hybrid engine we were looking for a synergy of existing products and technologies. The main aim of this project is to create a technology that would allow us to produce engines for unmanned planes in the future. We are focusing on solutions that are innovative and useful in the industry. Thanks to HybriDrive Programme we managed to increase employment not only in our firm, but also in the cooperating consortia.
We are very happy with the current cooperation we have with NCRD. The experts working with the Centre helped us handle many of the formalities and offered useful advice. We encourage all entrepreneurs to invest in new technologies and products, our experiences tell us that NCRD creates a great environment for the subjects that want to seek funding for innovative technologies. The formalities and the process of getting and maintaining the funding is not the easiest, but neither is running a profitable business.

JANUSZ MICHALCEWICZ
Director of EUROTECH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ENERGY AND THE ENVIRONMENT

Polish wildlife is extremely diverse, and in some cases completely unique. A third of the country is under various forms of environmental protection. We know that our natural environment is our key national capital.
The quality of life for future generations will depend vastly on ecological state of our country. This is why we take great care in sustainable economic development, that protects the purity of our air, waters and forests.

Programme	Number of projects	Total value of projects	Total value of funding
BioStrateg	-	-	-
Advanced Technologies For Power Generation	4	350 021 875	299 965 500
Technologies Aiding The Development Of Safe Nuclear Energies	9	47 979 520	47 180 650
Blue Gas: Polish Shale Gas	21	311 083 368	173 393 130
GEKON	22	83 361 333	61 576 923
TOTAL	56	481 362 728	408 723 073

BIOSTRATEG

DATE OF THE COMPETITION: AUGUST 14TH, 2014

NUMBER OF APPLICTIONS SUBMITTED IN THE 1ST COMPETITION: 78

ALLOCATION: 150 MILLION PLN

BIOSTRATEG aids R&D works in the areas from the industry of natural environment, agriculture and forestry. It stems from the conviction that we need action for adapting agriculture and forestry to the climate change, and in order to maintain sustainable development that is respectful towards existing biodiversity and food safety. New, innovative manufacturing technologies and smart management of the raw materials (especially water and soil that are a base of prospering agricultural and forest economies) are essential to maintain sustainable and healthy natural environment with boasting wildlife and higher quality of life.

The programme aids investment in the following five strategic areas:

- food safety (both in context of supply and quality);
- efficient and mindful management of natural resources (with special interest in water economy);
- prevention and adaptation to climate change (with special interest in agriculture);
- the protection of biodiversity and sustainable development of agricultural productive space;
- forestry and wood economy.

The main aims of the programme are: the development of knowledge leading to the increase of both innovativeness and competitiveness of Polish economy, and the increase of sustainability in the industries including agriculture and forestry, and, indirectly, diminish the negative effects of economic development and climate change.

ADVANCED TECHNOLOGIES FOR POWER GENERATION

NUMBER OF PROJECTS: 4

VALUE OF ADDITIONAL FUNDING: 299.97 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 350.02 MILLION PLN

The programme aims at developing technological solutions to attempt to decrease the negative impact of the energy industry on the environment. The solutions will facilitate the limitation of pollution and thus try to achieve EU targets in Strategy 3x20 (improvement in energy efficiency by 20%, increase of the renewable energy ratio by 20% and reduction of CO2 emissions by 20% by 2020, with 1990 as a base year). The results of the programme will be an important support system for the implementation of research results and technologies based on Poland's main raw fuel – carbon – as well as other available sources of primary energy.

TECHNOLOGIES AIDING THE DEVELOPMENT OF SAFE NUCLEAR ENERGIES

NUMBER OF PROJECTS/ACTIVITIES: 10

VALUE OF ADDITIONAL FUNDING: 49.52 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 50.32 MILLION PLN

This project is the answer to the postulate to increase the energetic safety of the country, regarding nuclear energetics in Poland. Its implementation is closely connected to the implementation of the "Polish Energy Policy until 2030", a document adopted by the government in 2009, and the acceptance of the EU climate and energy package. The project will allow for the convergence of Polish scientific research and worldwide research, as well as the preparation of scientific and engineering staff for the Polish nuclear industry. Its implementation will aim to solve the issues of used nuclear fuel and its radioactive waste.

Additionally, it will help to create legal and actual regulations in the context of radiological protection, which will increase the social acceptance of nuclear energy development in Poland.

BLUE GAS: POLISH SHALE GAS

Blue Gas
Program Polski Gaz Łupkowy

NUMBER OF PROJECTS/ACTIVITIES: 21

VALUE OF ADDITIONAL FUNDING: 173.39 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 311.08 MILLION PLN

The program is a joint undertaking of the National Centre for Research and Development and Industrial Development Agency. It is aimed at supporting big, integrated R&D ventures, covering the testing of compiled solution in pilot scale, leading to the creation and commercialisation of modern shale gas extraction technologies. The main task of the program is to develop a technology in the field of extraction of the shale gas in Poland and its implementation in the economic activities of Polish enterprises. The recipients of this program are scientific consortia with an input from the entrepreneurs.

Applications need to fulfil the following requirements:

- the core of the project is the design of innovative technology for extraction of the shale gas;
- it will be validated/tested on the pilot scale, in real-life conditions;
- the leader of the project is an entrepreneur (who has experience in implementation of new solutions at an industrial scale) interested in implementing the technology that is being developed in his own enterprise.

GEKON

NUMBER OF PROJECTS/ACTIVITIES: 30

VALUE OF ADDITIONAL FUNDING: 83.41 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 110.76 MILLION PLN

This is a joint undertaking of the National Centre for Research and Development and the National Fund for Environmental Protection and Water Management. The aim of the programme is the development of pro-ecological innovative technologies and their implementation in Polish businesses in five different areas, as follows: environmental aspects of obtaining non-conventional gas; energy efficiency and energy storage; protection and rationalisation of the use of waters; obtaining energy from pure sources; and innovatory methods of obtaining fuels, energy or materials from waste, as well as recycling.

The addressees of the program are the entrepreneurs and scientific consortia that have entrepreneurial participants. The following requirements are to be fulfilled when applying for funding:

- applications need to deal with creating pro-ecological innovative technology in regard to the aforementioned areas;
- the project consists of two parts: R&D and implementation;
- the project is led by an entrepreneur who is interested in implementing the technology developed in their own business.
- The aim of the programme is the development of pro-ecological technologies and thus an increase in innovation in Polish economy

SMART STREET LIGHTING SYSTEM

We have smart houses (using Building Automation Systems), time for smart cities! We begin with street lighting, as, thanks to Orion Electric Poland, Polish cities will have cheaper and more ecological alternative.

Torun will be a pioneer of the implementation – the first innovative and smart lightening system will be introduced there.

The street lamps will use less power and can be remotely controlled. The project was jointly coordinated by the scientists from the University of Technology and Life Sciences in Bydgoszcz and Orion Electric Poland. Torun City Council agreed to be the testing field for the project.

Through the implementation of the modern technologies the cost of lighting the city is set to decrease by 15-20%, pushed indirectly even further by reducing the cost of maintenance. Carbon dioxide emissions will also decrease, as less energy required means less fuel burnt.

The management of the system can be done from a central computer system that allows for remote control (both manual and automatic) over each lamp's strength, source of light and power. The lamps will work in line with motion sensors (turning them off when traffic intensity is low), light intensity (to increase the intensity in poorly lit places) and e.g. accidents (to brightly light the occurrence). The system will also offer feedback to the staff concerning the quality of performance of particular lamps.

The venture will positively influence the energetic efficiency of Kuyavian-Pomeranian region. All involved parties want to continue the cooperation in order to design other similar innovations.

BENEFICIARY COMMENT

During many talks with public administration we kept bringing up BAS (Building Automation System),that are already used in construction, car industry and many other spheres of daily life. The question of whether it's possible to save on energy spending was quite frequent, so we kept wondering 'how'? We decided to combine those two issues, and ended up with a system that could be constantly monitored, remotely managed and cut costs.

Currently the system is undergoing testing by the experts from the University of Technology and Life Sciences in Bydgoszcz, and soon it will be installed on some streets of Torun.

The supported offered by NCRD was crucial for the existence of the project, as when it comes to high-tech the obstacles to secure funding are usually unbreakable. That's why we are very grateful for the help we got from the Centre.

ŁUKASZ MARKIEWICZ
Director of Orion Electric Poland


浦东南路
Pudong Rd
陆家嘴东路
Lujiazui East Rd
浦城路
Pucheng Rd
东泰路
Dongtai Rd
世纪大道

SECURITY AND DEFENCE OF THE COUNTRY

The security and defence of the country is both a strategic and a sensitive matter, requiring detailed analysis of public agenda. Innovative research and successful implementation aid the sense of security of the Polish people and give the country a technological edge in the armed forces. This is why NCRD invests heavily in projects with great potential, with the support from Polish engineers we are fighting for the calm in those nervous times.

SECURITY AND DEFENCE

NUMBER OF PROJECTS/ACTIVITIES: 149

VALUE OF ADDITIONAL FUNDING: 1.97 BILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 2.17 BILLION PLN

The National Centre for Research and Development, with the agreement of the Minister of National Defence and the Minister of the Interior, performs activities regarding research on security and defence. In competitions for particular research topics, the ventures that have the most actual potential for increasing public safety are funded. The aim of the programs and projects is not only to increase the potential of Polish scientific and industrial subjects, but also to pursue technological independence through the creation of Polish expertise in regard to critical technologies regarding security and defence of the country.
2014 saw NCRD kick-starting R&D works for projects submitted by the Ministry of National Defence, Ministry of Interior and Internal Security Agency.

The activities correlated with priorities directions for security and defence of the country laid out in National Research Programme, that is:

1. cutting-edge technologies and innovative solutions for threat detection, prevention and neutralisation;
2. forensics;
3. personal protective equipment;
4. social prevention, victimology, forensics and social studies;
5. organisation and management;
6. cutting-edge technologies and innovative solutions for ICT safety, data protection and national cryptography;
7. network and information technologies
8. sensors and surveillance;
9. precise arms and weapons;
10. unmanned (autonomic) platforms;
11. protection and survival on the battlefield;
12. modern materials (including high-energy and smart ones).

Moreover, as per the request of the representative of The President of the Republic of Poland, NCRD set up, in cooperation with the aforementioned Ministries, an additional axis of priority called Security of the Country. The projects within it will aid the development and improvement of Polish Armed Forces and increase the innovativeness of the weapons and military equipment. Mainly supported are such competencies as leadership, reconnaissance, attack, action support and mobility, substantiation and protection of armed forces.

The following competitions were finalised in 2014:

- Competition no. 5/2014, for R&D works for security and defence of the country, with 1 signed contract totalling at 62 million PLN. The final user of the results will be the Ministry of National Defence.
- Competition no. 6/2014, for R&D works for security and defence of the country, with 19 signed contracts totalling at 85 million PLN.
- The following institutions will be the main beneficiaries of the projects:
  - Ministry of the Interior: 18 projects (79.9 million PLN)
  - Internal Security Agency: 1 project (5 million PLN)
- Competition no. 1/PS/2014, for R&D works for security and defence of the country, named 'New systems of armament and defence in relation to directed energy', with 4 signed contracts totalling at 316.10 million PLN. The final user of the results will be the Ministry of National Defence.

In total, there was 149 on-going projects for security and defence of the country in 2014.

SUPERSAFETY IN SUPERVEST

The officers from Government Protection Bureau (pol. Biuro Ochrony Rzadu (BOR)) will soon get gear that brings to mind what Q would offer James Bond. Hard-Vest scientific consortium and MORATEX Institute of Security Technologies are finalising the works on cutting-edge bullet- and fragment-proof vest. The entire set, tailor-made for BOR agents, consist of base vest, light vest, ballistic set and cartridges, modular pocket system, and a special transport bag.

This gear aids the user's performance in various combat situations, with its modular design that allows for modifications of set-up, which was tested out in both usage and exploitative tests in which BOR agents themselves tried out the product.

Bullet-proof properties of the vest are very high – it protects the user from multiple bullet shots from various guns. The product is light, difficult to combust, humidity-resistant and has extremely low visibility. One of the biggest challenges that the designers had to face was to combine extremely high ballistic properties (multi-hit protection), as well as resistance to other types of shots, and all that while minimising the weight of the set.

BENEFICIARY COMMENT

We finished exploitative tests of the vest set. Currently, we are working on finalising technical and technological paperwork for the project, which will allow for implementation of that solution in manufacturing enterprises interested in its production in the future.

The project was fairly complicated and required strict cooperation, and knowledge exchange, between partaking scientific institutions and enterprises. After those experiments, the members of the Consortium assume further cooperation in order to create new R&D and implementation projects, joint creation of cutting-edge solutions (in the life/health production industry), as well as taking actions to facilitate direct knowledge transfer and sharing of technology and infrastructure.

NCRD was of great help during the project, and we believe that working with the Centre is a huge opportunity both for Polish scientific units, as well as the enterprises. It aids innovative solution-finding and creation of Polish 'know-how', also in the critical field of security and defence of the country.

MARZENA FEJDYŚ DEng.
Head of the project, Moratex Insitute
of Security Technologies

base vest

light vest / concealed use

transport bag

INTERNATIONAL PROGRAMMES

Programme	Number of projects	Total value of projects	Total value of funding
Polish-Norwegian Research Programme	104	291 874 940	291 318 388
Bilateral Programmes	22	22 106 094	21 657 387
ERA-NET	108	86 161 741	82 588 115
Join Undertakings And Programmes	125	132 318 767	96 531 202
TOTAL	359	532 461 542	492 095 092

Horizon 2020 – Teaming for Excellence Competition

The Centre, per request of the Ministry of Science and Higher Education handles application and administrative processes for national subject participating in the Teaming for Excellence competition under Spreading Excellence and Widening Participation of the Horizon 2020 programme.

NCRD cooperated with 10 subjects selected by the Foundation for Polish Science. Multiple sessions of meeting and consulting events were organised, with the aim to familiarise the participants with the content of applications, and deciding on the scope of NCRD's competencies in this undertaking.

Ten applications were prepared in cooperation with the Centre and submitted into the Participants Portal H2020 and European Commission by September 17th, 2014. Three of them (described below) qualified for the second phase.

Table 1. Applications filed to European Commission with NCRD as a coordinator

Nr	Name of the project/handle	Polish partner	Foreign partner	Region
1.	Centre of New Technologies Plus CeNT +	University of Warsaw	University of Cambridge, UK	Warsaw
2.	CEZAMAT Environment	CEZAMAT PW Sp. z o.o.	CEA-Tech, FR Fraunhofer-Gesellschaft, DE	Warsaw
3.	Centre of Particle Astrophysics and Cosmology CEPAC	Nicolaus Copernicus Astronomical Center PAS	Laboratory of Astroparticle and Cosmology, FR	Warsaw

POLISH-NORWEGIAN RESEARCH PROGRAMME

NUMBER OF PROJECTS/ACTIVITIES: 104

VALUE OF ADDITIONAL FUNDING: 291.318 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 291.875 MILLION PLN

The aim of the Polish-Norwegian Research Programme, executed within The Norwegian Financial Mechanism (in 2009-2014), is to minimise socioeconomic differences and to publicise the bilateral cooperation through popularisation and support of the research projects. The programme assumes financing of the R&D activities in the following areas:

- environmental protection;
- climate change (including polar research);
- health;
- social sciences and bilateral cooperation, with a special consideration for migration, social consistency, the role of minorities and the social aspect of sustainable development;
- gender equality and the balance between work and private life;
- carbon dioxide capturing and storing.

BILATERAL PROGRAMMES

NUMBER OF PROJECTS/ACTIVITIES: 22

VALUE OF ADDITIONAL FUNDING: 21.66 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 22.11 MILLION PLN

The NCRD is engaged with various agencies financing research, some of which have recently announced competitions for joint research projects. Information about the partners, areas of cooperation and activities undertaken in 2014 is presented below.

Table 2. International bilateral programmes - activities undertaken in 2014.

Country	Partner	Area	Activities
Luxembourg	Fonds National de la Recherche (FNR)	ICT	2nd Competition 2013: - 3 contracts 3rd Competition 2014: - applications are closed; - 4 applications submitted; - none of them were recommended for funding. 4th Competition 2015 (allocation: 2 million PLN): announcement made

Berlin (GERMANY)	The Senate Department for Economics, Technology and Research, Berlin	Photonics	1st Competition 2013 (allocation: 1.5 million EUR) - applications are closed; - 4 applications submitted; - 2 projects recommended for funding by NCRD; - 1 contract signed
Tajwan	Ministry of Science and Technology (MOST)	Neurobiology Renewable energy, environment Eco-innovations Textile and material engineering	1st competition 2013: - 6 contracts signed 2nd competition 2014: - applications closed; - 35 submitted applications; - 8 projects recommended for funding by NCRD
Japan	Japan Coal Energy Center (JCOAL)	Traditional energetics	1st competition 2014 (allocation: 1 million PLN): - applications closed; - 5 submitted applications; - 2 projects recommended for funding by NCRD
South Africa	National Research Foundation (NRF)	Medical sciences; Agriculture Life sciences and biotechnology Environment and climate change; Water and green technologies; Sea economy Clean coal technologies ICT	Memorandum of Understanding signed December 11th, 2014
Turkey	Scientific and Technological Research Council of Turkey (TÜBİTAK)	University of Glasgow, UK	Memorandum of Understanding signed August 22nd, 2014

COOPERATION UNDER ERA-NET

NUMBER OF PROJECTS/ACTIVITIES: 22

VALUE OF ADDITIONAL FUNDING: 21.66 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 22.11 MILLION PLN

The formula of ERA-NET programmes, based on creation of the European Research Area (ERA), assumes the combining of both financial and scientific potential of member states aiming at increasing the competitiveness of European economy. The participants are mainly institutions dealing with financing research in a particular

European country e.g. ministries, research and technology agencies, scientific councils. NCRD s role is to instigate and continue the cooperation under the ERA-NET scheme, as well as financing some of the projects.The task of this program is a systematic exchange of information and experience between EU member states, identification and analysis of common strategic topics, compilation of joint ventures between national and regional programs in order to translational opening of the infrastructure, as well as creation and implementation of the co-financed general agencies supporting research opportunities.

Information about the projects, areas of cooperation and activities undertaken in 2014 is presented below

Table 3. NCRD s participation in ERA-NET programmes

Name	Area	Activities
ERA-NET SOLAR	Photovoltaics	1st competition 2013 (allocation: 750,000 EUR): - 1 contract signed 2nd competition 2014 (allocation: 500,000 EUR): - applications closed; - 24 applications submitted (incl. 5 with Polish subjects); - 2 applications recommended for funding.
Fenco Net	Carbon-based energetics	1st competition 2013 (allocation: 500,000 EUR): - monitoring of the undergoing projects under contracts signed in 2013
Smart Grids	Smart energetic grids	3rd competition 2013 (allocation: 500,000 EUR): - 1 contract signed
M-ERA. NET	Material engineering	1st competition 2012 (allocation: 1,500,000 EUR): - 1 contract signed 2nd competition 2013 (allocation: 1,500,000 EUR): - 32 applications submitted; - 4 applications recommended for funding by NCRD (with Polish subjects) 3rd competition 2014 (allocation: 500,000 EUR): - 18 applications submitted
FLAG-ERA	Graphene	1st competition 2015 (allocation: 500,000 EUR): - applications are ope
Eco-Innovera	Eco-innovations	2013 (allocation: 800,000 EUR): - 2 contracts signed - the programme completed in September 2014
ERA-NET ERA-CAPS	Molecular biology of plants	1st competition 2012 (allocation: 1,500,000 EUR): - 1 contract signed II competition 2013 (allocation: 300,000 EUR): - 17 applications submitted - 2 applications with Polish subjects recommended for funding by NCRD
ERA IB-2	Industrial biotechnology	4th competition 2013 (allocation: 1,000,000 EUR): - 3 contracts signed 5th competition 2014 (allocation: 500,000 EUR): - 11 applications submitted - 1 application with Polish subjects recommended for funding by NCRD
NEURON 2	Neurology	2nd competition 2013 (allocation: 1,500,000 EUR): - 1 contract signed 3rd competition 2014 (allocation: 500,000 EUR): - 12 applications submitted - 0 applications with Polish subjects recommended for funding by NCRD

Infect –ERA	Contagious diseases	1st competition 2013 (allocation: 1,000,000 EUR): - 1 contract signed 2nd competition 2014 (allocation: 500,000 EUR): - 3 applications submitted - 0 applications with Polish subjects recommended for funding by NCRD
E-Rare 2	Rare diseases	3rd competition 2014 (allocation: 500,000 EUR): - 9 submitted applications - 1 applications with Polish subjects recommended for funding by NCRD
ERA-NET Transcan	Translational testing in oncology	3rd competition 2013 (allocation: 500,000 EUR): - 3 applications submitted - 2 applications with Polish subjects recommended for funding by NCRD
EuroNanoMed II	Nanomedicine	5th competition 2013 (allocation: 500,000 EUR): - 8 applications submitted - 5 applications with Polish subjects recommended for funding by NCRD 4th competition 2014 (allocation: 500,000 EUR): - applications are now open
ERA-NET SUSFOOD	Sustainable food production and consumption	1st competition 2013 (allocation: 800 000 EUR): - 6 contracts signed 2nd competition 2014 (allocation: 300 000 EUR): - 6 applications submitted - 0 applications with Polish subjects recommended for funding by NCRD
CORE Organic Plus	Ecological food and agriculture	1st competition 2013 (allocation: 300 000 EUR): - 12 applications submitted - 5 applications with Polish subjects recommended for funding by NCRD
ERA-NET BIOENERGY	Bioenergetics	7th competition 2013 (allocation: 800,000 EUR): - 2 contracts signed 8th competition 2014 (allocation: 500,000 EUR): - 8 applications submitted - 3 applications with 5 Polish subjects recommended for funding by NCRD 9th competition 2014 (allocation: 500,000 EUR): - 19 applications submitted
ERA-MIN	Non-energetic raw materials	1st competition 2013 (allocation: 400 000 EUR): - 2 contracts signed 2nd competition 2014 (allocation: 500 000 EUR): - 3 applications submitted 3rd competition 2014 (allocation: 500 000 EUR): - applications are now open
TRANSPORT III	Transport	1st competition 2013 (allocation: 1 500 000 EUR): - 6 contracts signed
Martec II	Water transport Maritime technologies	4th competition 2012 (allocation: 1 000 000 EUR): - 2 contracts signed 5th competition 2013 (allocation: 1 000 000 EUR): - 0 projects funded by NCRD VI competition 2014 (allocation: 500 000 EUR): - 6 applications submitted - 1 application with Polish subjects recommended for funding by NCRD

CHIST-ERA II	ICT	3rd competition 2013 (allocation: 500,000 EUR): - 1 contract signed 4th competition 2014 (allocation: 500,000 EUR): - 0 applications with Polish subjects recommended for funding by NCRD
ERA-NET JPco-fuND	Neurodegenerative diseases	1st competition co-fund 2015 (allocation: 400, 000 EUR): - NCRD joined ERA-NET JPco-fuND - works on preparation of competition s paperwork for co-fund competition - Memorandum of Understanding signed - competition announcement: January 8th, 2015
ERA.Net RUS Plus INNOVATION	Innovation	1st competition 2014 (allocation: 800 000 EUR): - 18 preliminary applications submitted - 15 applications qualified for the second stage of the competition
ERA.NET RUS Plus S&T	Nanotechnologies, environment/climate change, health	1st competition 2014 (allocation: 700,000 EUR): - 36 applications submitted Number of projects/activities: 164 Value of additional funding: 128.01 million PLN Total value of funded activities: 133.26 million PLN Number of projects/activities: 164 Value of additional funding: 128.01 million PLN Total value of funded activities: 133.26 million PLN

JOINED UNDERTAKINGS AND PROGRAMMES

Joint Undertaking is a public-private partnership between: European Commission, member states and industrial association. NCRD is representing Poland as an executive agency and co-finances Polish subjects partaking in the projects chosen through the competitions organised by JU, or, in case of Joint Programmes – a special organisation (e.g. an association).

Information about the partners, areas of cooperation and activities undertaken in 2014 is presented below.

Table 4. NCRD's international cooperation within joint undertakings and programmes

Name	Area	Activities
JU ENIAC	nano-electronics	8th competition 2013 (allocation: 500,000 euro) -1 signed contract for financing of the project 9th competition 2013 (allocation: 500,000 euro) -3 signed contracts for financing of the project
JU ARTEMIS	built-in computer systems	2nd competition 2013 (allocation: 2,000,000 euro) -5 singed contracts for financing of the project

JU ECSEL	nano-electronics and built-in computer systems	1st competition 2014 (allocation: 1,500,000 euro) -7 submitted applications -0 applications with Polish subjects recommended for financing by NCRD -the venture is a continuation of JU ARTEMIS and JU ENIAC programmes
EUROSTARS	R&D for SME	9th competition 2012 (allocation: 500,000 euro) -1 singed contract for financing of the project 10th(BRAK NUMERU W ORYGINALE)? competition 2013 (allocation: 500,000 euro) -2 singed contracts for financing of the project
EUROSTARS 2	R&D for SME	1st competition 2014 (allocation: 750,000 euro) -7 submitted applications -0 applications with Polish subjects recommended for financing by NCRD 2nd competition 2014 (allocation: 750,000 euro) -15 submitted applications
AAL	ICTs for comfort and quality of life for the elderly	5th competition 2012 (allocation: 500,000 euro) -1 singed contract for financing of the project 7th competition 2014 (allocation: 500,000 euro) -4 applications (with 6 Polish subjects) recommended for financing by NCRD
BONUS-185	R&D for the Baltic Sea	3rd competition 2014 (allocation: 1,500,000 euro) -4 submitted applications -6 applications (with 7 Polish subjects) recommended for financing by NCRD
JPND	neurodegenerative diseases	2nd competition 2012 (allocation: 600,000 euro) -2 singed contracts for financing of the project 3rd competition 2013 (allocation: 750,000 euro) -8 submitted applications -1 application (with 2 Polish subjects) recommended for financing by NCRD
JPI HDHL DEDIPAC KH	Diet determinants and physical activity	competition 2012 (allocation: 250,000 euro) -4 singed contracts for financing of the project
JPI AMR	Microorganisms' immunity	1st competition 2014 (allocation: 250,000 euro) -8 submitted applications -1 application (with Polish subjects) recommended for financing by NCRD
JPI HDHL BioNH	Biomarkers in food and health assessment	1st(??NIE MA W ORYG) competition 2014 (allocation: 250,000 euro) -4 submitted applications -0 applications with Polish subjects recommended for financing by NCRD

CORNET INITIATIVE

NUMBER OF PROJECTS/ACTIVITIES: 16

VALUE OF ADDITIONAL FUNDING: 16.36 MILLION PLN

TOTAL VALUE OF FUNDED ACTIVITIES: 16.71 MILLION PLN

The CORNET Initiative (COllective Research NETworking) is a programme supporting industrial research, paying particular attention to SMEs. The undertaking is based on the cooperation of international institutions that manage and finance industrial research. NCRD has been a part of the initiative from 2011. It s goal is to promote close cooperation between engaged national/regional subjects (such as ministries and agencies), as well as creating funding opportunities from public (national/regional) funds for research for particular industries.

EUREKA INITIATIVE

NUMBER OF PROJECTS/ACTIVITIES: 76

VALUE OF ADDITIONAL FUNDING: 54.50 MILLION PLN

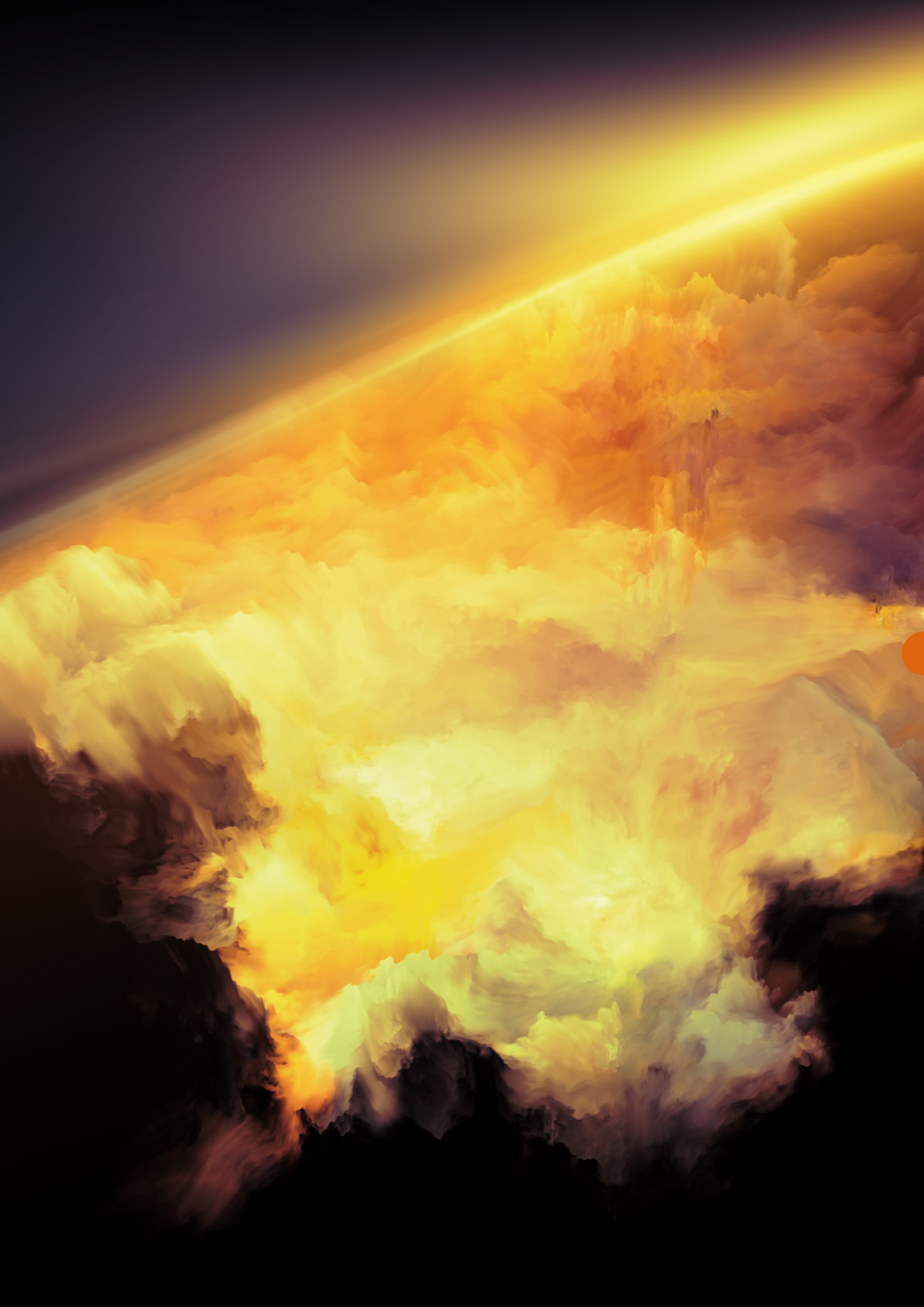
TOTAL VALUE OF FUNDED ACTIVITIES: 81.19 MILLION PLN

The EUREKA Initiative was set up in 1985, and its main task is to increase innovations, productivity and competitiveness of the European industries. Projects that are a collaboration of at least two different organisations from two different EU member states are funded within the initiative. The projects need to focus on creation and implementation, or significant improvement of existing technology, or implementation of a new product or service.

V4 Countries - Japan Cooperation

On September 23rd, 2014 a Memorandum of Understanding for cooperation between research funding institutions from the Visegrad Group (Poland, Czech Republic, Slovakia and Hungary) and Japan was signed in Bratislava. The aim of this understanding is strengthening of and promotion of the cooperation in the field of R&D and innovativeness through financing of joint projects.

The first competition will deal with material engineering and advanced material design. NCRD has allocated 500,000 EUR for funding of Polish subjects that will apply successfully.



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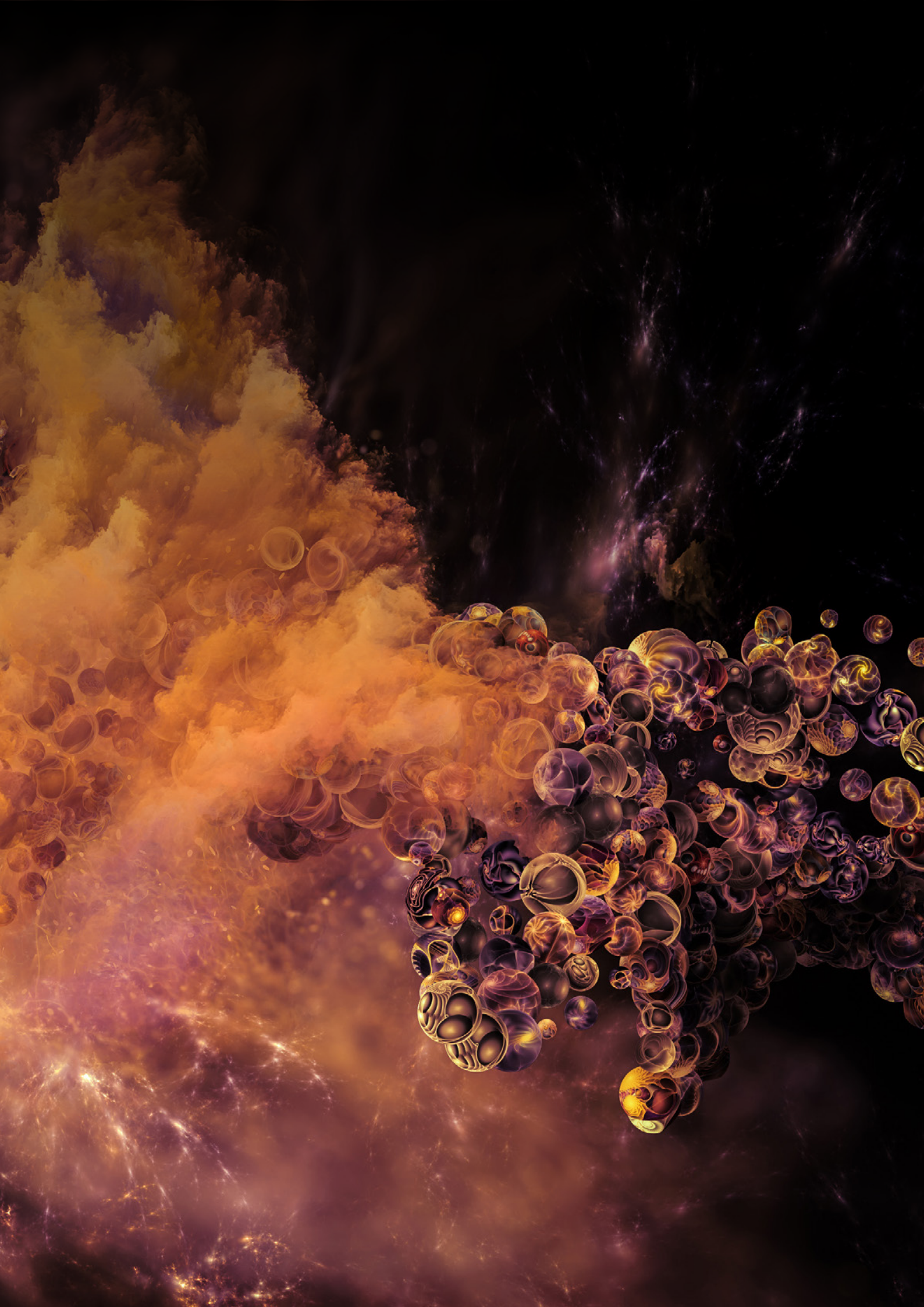
NCRD 2014 REPORT



INFORMATION ABOUT STRATEGIC PROGRAMMES AND RESEARCH PROJECTS

ADVANCED TECHNOLOGIES FOR POWER GENERATION			
Time period:	May 2010 - May 2015 (60 months)	Indicator level from: December 31st, 2014	
		Level of progress:	approx. 85%
Progress			
name of the indicator		planned value at the end	level of indicator (%)
Number of demonstrative and pilot installations created resulting from the research activity		36	131%
Number of completed and started doctorate and habilitation procedures related to the topic by the persons engaged in the research activity		78	118%
Number of completed bachelor, engineer and master theses related to the topic of research activity, supervised by the persons engaged in the activity		345	123%
Number of publications (categories: A and B, and other listed by the Ministry of Science and Higher Education) resulting from the research activity		568	121%
Number of monographs and textbooks or chapters in monographs and textbooks resulting from the research activity		73	103%
Indicators of result – lack of such at this stage			
Indicators of influence – lack of such at this stage			

Table 1. Progress of execution of Advanced technologies for power generation programme* shown by the level of indicator

* Structure of the indicators have been changed per changes implemented as suggested in mid-term evaluations (that took place from November 2012 to February 2013)r.

INTERDISCIPLINARY SYSTEM OF INTERACTIVE SCIENTIFIC AND TECHNO-SCIENTIFIC INFORMATION			
Time period:	August 2010 – July 2014 (48 months)	Indicator level from: December 31st, 2014	
		Level of progress:	100%
Progress			
name of the indicator		planned value at the end	level of indicator (%)
Number of scientific units engaged in the research activity		16	100%
Total value of the research activity		66 971 141,74 zł	98,69
Number of scientific staff engaged in the research activity		511	104,89
Number of international conferences at which the results were presented		115	222,61
Number of laboratories modernized resulting from the research activity		7	114,31
Indicators of result		Planned value	level of indicator (%)
Number of new technological and organisational solutions, installations, devices, systems, etc. resulting from the research activity		59	215,25
Number of completed bachelor, engineer and master theses related to the topic of research activity, supervised by the persons engaged in the activity		43	227,91
Number of completed and started doctorate and habilitation procedures related to the topic by the persons engaged in the research activity		17	152,94
Number of publications rights resulting from the research activity in scientific journals within Essential Science Indicators		24	170,83
Number of submitted inventions or utility models and industrial design rights resulting from the research activity		1	500,00
Indicators of influence – not planned by 31/12/2014			

Table 2. Progress of execution of Interdisciplinary system of interactive scientific and techno-scientific information programme* shown by the level of indicator

Allocation	360 million pln
Preliminary applications period	21.01– 20.02.2013 r.
Number of preliminary applications submitted	149
Number of preliminary applications for merit-based assessment	129
Number of successful objections	26
Number of objections	28
Number of successful appeals	11
Number of appeals	45
Full applications period	23.09 - 06.11.2013 r.
Number of full applications submitted	28
Number of full applications for merit-based assessment	28
Additional applications period	03.02 - 19.03.2014 r.
Number of full applications	10
Number of full applications for merit-based assessment	10
Number of funding decisions in both selection processes	15*
Number of successful appeals	2
Number of appeals	9
Number of signed contracts in both selection processes	10
Allocated funding	290 million pln

Table 3. Information about competition no. 1 for STRATEGMED

*There were 15 decisions (out of 16 projects on a ranking list approved by the Director of the Centre on May 26th, 2014) and 2 additional projects that qualified through a successful appeal process in 2014. During the process, two Applicants have retracted their applications, and one Applicant will receive their decision in 2015, after negotiations.

Allocation	220 million pln
Applications period	25.07– 23.09.2014 r.
Number of applications submitted	109
Number of applications for merit-based assessment	97
Number of successful objections	11
Number of objections	2
Number of successful appeals	6
Number of appeals without decision	0
Number of appeals	0
Number of signed contracts	0
Allocated funding	193 million pln

Table 4. Information about competition no. 2 for STRATEGMED

Lp.	Indicators	Base value of an indicator	Goal value of an indicator
Indicators (to be achieved during the execution of the projects under the programme)			
1.	Number of publications, dealing with R&D works' results, who were authored (or co-authored) by the members of research teams executing the projects under the programme – in magazines/journals within Science Citation Index, with a high Impact Factor	0	200
Indicators of result (to be achieved in 5 years from completion of the projects under the programme)			
2.	Number of leaders of new research teams formed to execute projects under the programme, whose Hirsch index has increased by at least 20%	0	30
Indicators of influence (to be achieved in 5 years from completion of the projects under the programme)			
3.	Increase in number of R&D projects financed through Horizon 2020 programme (or other EU programme from that area), of which executors or coordinators are either institutions executing the projects under the programme, or enterprises created as a result of the programme and dealing with commercialisation of the new solutions developed during the programme (the increase is measured in reference to the 1st year of the programme)	---	50%

Table 5. Indicators used in assessing the level of progress of specific aims of STRATEGMED programme: 'significant increase of Poland's international position in research and development in sciences under this programme'

Lp.	Indicators	Base value of an indicator	Goal value of an indicator
Indicators (to be achieved during the execution of the projects under the programme)			
1.	Number of new research teams formed to execute projects under the programme	0	40
2.	Number of members of new research teams formed to execute projects under the programme, who were previously employed in a foreign scientific unit	0	200
Indicators of result (to be achieved in 5 years from completion of the projects under the programme)			
3.	Number of citations of work authored by the members of new research teams formed to execute projects under the programme	0	2000
4.	Number of members of new research teams formed to execute projects under the programme, who were previously employed in a foreign scientific unit, and who are continuing their work in Poland	0	150
Indicators of influence (to be achieved in 5 years from completion of the projects under the programme)			
5.	Number of new research teams formed to execute projects under the programme, which were awarded ERC grant (or one of equivalent value, after Horizon 2020's completion)	0	35

Table 6. Indicators used in assessing the level of progress of specific aims of STRATEGMED programme: 'creation of young, dynamic research teams, with international line-up and strong and well-documented international recognition'

Lp.	Indicators	Base value of an indicator	Goal value of an indicator
Indicators (to be achieved during the execution of the projects under the programme)			
1.	Number of patent applications in PCT16 or EP017 (under protection in the minimum of 7 countries of EU-15) as a result of the programme	0	50
2.	Obtaining qualitative advantage of the patent-to-be over the alternative solutions, including: a) better effectiveness and/or safety parameters (than existing solutions); b) lower cost of production; c) adaptability of the new solutions to particular groups (e.g. children, the elderly, pregnant women) d) basing the method of prevention, diagnostics, therapy or rehabilitation on the appropriate biomarker personalising the process e) complexity and extent of interdisciplinary qualities of the approach, e.g., ability to use new therapy methods with other methods with already proved effectiveness 70% of patent applications fulfils 2 out of those requirements (including obligatory a))	0	70% zgłoszeń patentowych spełnia 2 z tych wymagań (w tym obligatoryjnie a)
Indicators of result (to be achieved in 5 years from completion of the projects under the programme)			
3.	Number of new enterprises formed as a result of the execution of the programme, dealing with commercialisation of new solutions developed under the programme	0	20
4.	Income from selling or licensing for use of the industrial property rights resulting from the execution of the programme (income of executing subjects or enterprises commercialising new solutions)	0	200 mln zł
Indicators of influence (to be achieved in 5 years from completion of the projects under the programme)			
5.	Increase in the extent of R&D projects financed by the business: value of spending on R&D of enterprises partaking in the execution of the projects under the programme, or developed during (spending after completion of the projects)	0	400 mln zł

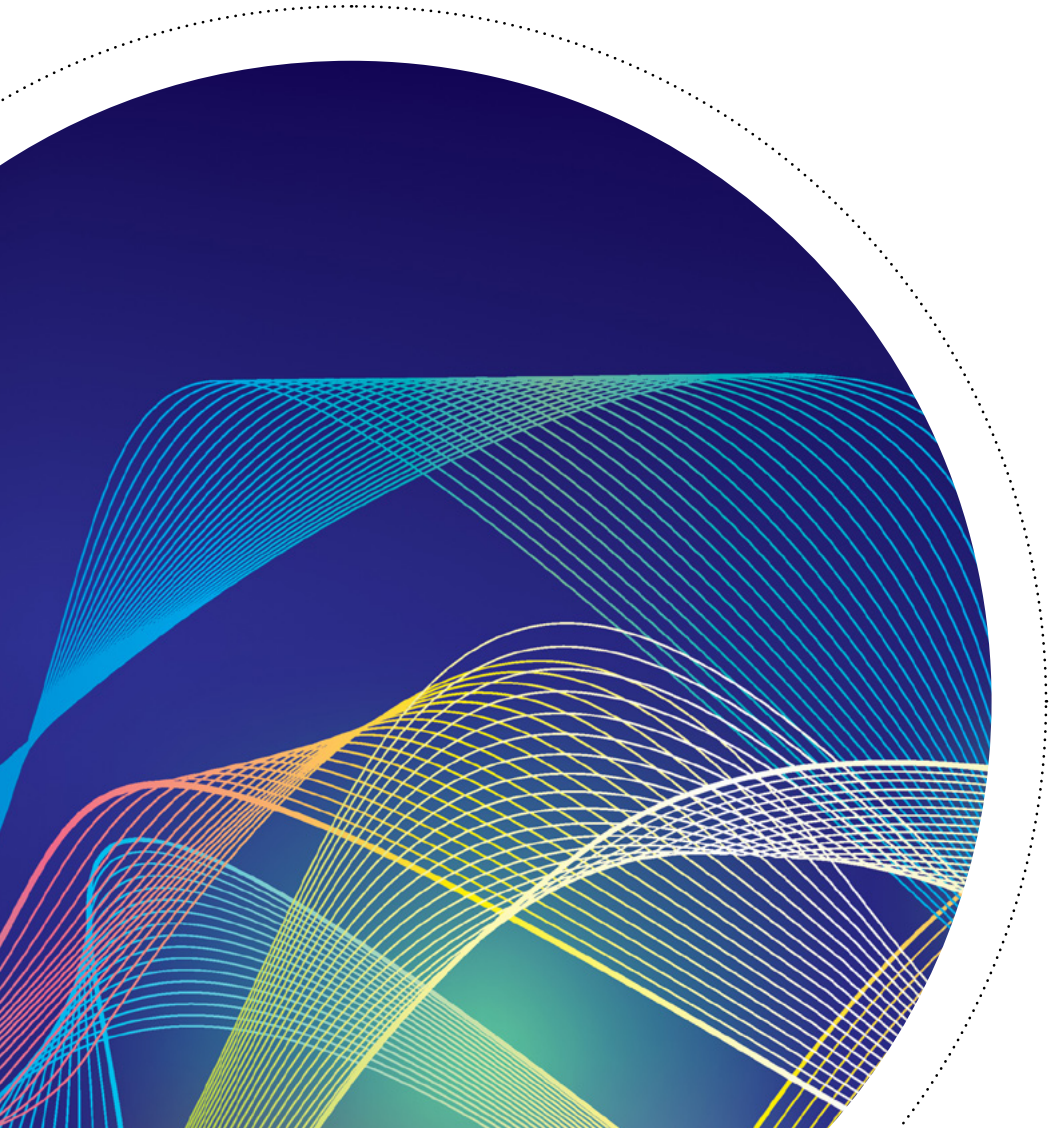
Table 7. Indicators used in assessing the level of progress of specific aims of STRATEGMED programme: 'transfer of know-how and new technologies in the scope of prevention, diagnosis, therapy and rehabilitation from Polish scientific institutions (public research organisations) into the economy'

#	Name of Entity	Project title	Completion date	The value of the grant in PLN
1.	Silesian Center for Heart Diseases	The use of medical data transmission in order to improve the quality of life patients with heart failure and reduced the cost of their treatment - MONITEL-HF	01.09.2014 – 31.12.2016 r	15 425 000
2.	Warsaw University of Technology	Innovative methods for tissue engineering supporting healing and regeneration tendons and ligaments - START	03.11.2014 -02.11.2017	15 849 769
3.	Medical University of Gdańsk	Cell therapy based on the amplified artificially regulator lymphocytes CD4 + CD25 + CD127 - TREGS	01.09.2014 – 31.08.2017	11 700 000
4.	The Maria Sklodowska-Curie Institute of Oncology	Development of complementary Polish Molecular navigation system surgery for cancer treatment - MentorEye	01.08.2014 – 31.07.2017	24 608 695
5.	Pomeranian Medical University in Szczecin	Innovative diagnostic strategy for prevention and treatment of neurodegenerative diseases selected in Polish population - NeuStemGen	01.09.2014 – 31.08.2017	01.09.2014 – 31.08.2017
6.	University of Gdansk	New technologies pharmacological stimulate regeneration - REGENNOVA	01.10.2014 – 30.09.2017	16 870 288
7.	Institute of Bioorganic Chemistry Polish Academy of Sciences	Low molecular epigenetic modulators as activators cells for pluripotency regenerative medicine - EPICELL	01.01.2015 – 31.12.2017	21 642 080
8.	American Heart of Poland S.A.	Development and implementation of the first Polish low-profile aortic valve percutaneously implanted -InFlow	01.11.2014 -31.10.2017	11 550 022
9.	Institute of Physiology and Pathology of Hearing	The integrated system of tools for diagnostics and tele-rehabilitation conditions senses (hearing, sight, speech, balance, smell) -INNOSENSE	01.11.2014 - 31.10.2017	36 462 800
10.	Nicolaus Copernicus University Ludwik Rydygier Collegium Medicum	Modern prostheses draining the urine of patients with bladder cancer uric treated contactless minimally invasive oncological surgery excision of the bladder uric – Smart AUCI	01.11.2014 -31.10.2017	30.000.000

Table 8. Summary of entities with which the Centre has signed an agreement under the program STRATEGMED

NATURAL HABITAT, AGRICULTURE AND FORESTRY – BIOSTRATEG	
Allocation	**150 million pln**
Applications period	14.08– 13.10.2014 r.
Number of applications	78
Number of applications for merit-based assessment	67
Number of successful objections	9
Number of objections	1
Number of appeals	5
Number of signed contracts	13
Allocated funding	130 million pln

Table 9. Information about competition no. 1 for BIOSTRATEG



Lp.	Indicators	Base value of an indicator	Goal value of an indicator
Indicators (to be achieved during the execution of the projects under the programme)			
1.	Number of publications, dealing with R&D works' results, who were authored (or co-authored) by the members of research teams executing the projects under the programme - in magazines/journals within Science Citation Index	0	200
2.	Number of new products, including: techniques, technologies, models, manufactured goods, methods and procedures, developed and verified during the execution of the programme	0	200
3.	Number of patent applications resulting from the execution of the programme	0	100
4.	Number of utility models applications resulting from the execution of the programme	0	30
5.	Participation of young scientists in the execution of the programme	0	25%
Indicators of result (measured after completion of the programme, before 5 years pass, based on surveys supplied by executors)			
6.	Number of projects of scientific units partaking in the programme, executed outside of the programme jointly with other subjects	0	20
7.	Increase in number of projects gained by Polish teams partaking in initiatives and projects run under Horizon 2020 (in relation to 7 PR)	0	20%
8.	Increase in value of projects gained by Polish teams partaking in initiatives and projects run under Horizon 2020 (in relation to 7 PR)	0	20%
9.	Increase of spending on R&D by subjects that are not included in the budget partaking in the execution of the projects under the programme	0	100 mln zł
10.	Number of patents awarded to enterprises as a result of the programme	0	20
11.	Number of utility models awarded to enterprises as a result of the programme	0	10
Indicators of influence (measured during ex-post evaluation, 5 years after completion of the programme, based on surveys supplied by executors)			
12.	Number of citations of publications written under the programme (basing on ISI)	0	1 000
13.	Number of degrees awarded to scientists partaking in the programme as a result of the works performed	0	100
14.	Number of patents awarded and implemented as a result of the programme	0	25
15.	Number of utility models awarded and implemented as a result of the programme	0	10
16.	Number of new products, including: techniques, technologies, models, manufactured goods, methods and procedures, developed and implemented during the execution of the programme	0	100

Table 10. Indicators used in assessing the level of progress of BIOSTRATEG programme: 'Natural habitat, agriculture and forestry'

COMPETITIONS ANNOUNCED BY THE CENTRE

Subject of the task (completed, on-going – 1/01/2014 – 31/12/2014)	Date of announcement	Date of completion / Planned date of completion (if on-going)	The manner of information sharing about competitions*
1st quarter			
CuBR – 1st competition	2014-01-22	2014-03-27	2,8
ERA-NET ERA-MIN - 2nd competition	2014-03-21	2014-06-17	1,2,8
AAL-2014- - 7th competition	2014-03-28	2014-06-30	1,2,8
ERA-NET Bioenergy – 8th competition	2014-02-10	2014-09-01	1,2,8
ERA-CAPS – 2nd competition	2014-01-14	2014-03-14	2,8
ERA-NET SUSFOOD – 2nd competition	2014-02-01	2014-08-01	1,2,8
BONUS-185 Sustainable Ecosystem Services	2014-01-16	2014-04-16	2, 7 (e-mailing),8
ERA-NET Neuron II – 3rd competition	2014-01-10	2014-03-10	2,8
Infect-ERA – 2nd competition	2014-01-17	2014-04-02	1,2,8
JPI AMR - 1st competition	2014-01-27	2014-03-14	2
Bilateral competition with Berlin	2014-01-27	2014-03-31	1,2,8
ERA.Net RUS PLUS - Innovation	2014-01-31	2014-05-28	2,8
EUREKA 1/2014	2014-02-26	2014-05-15	2
Eurostars 2 - 1st competition	2014-02-18	2014-03-13	2
Competition no. 5/2014, for R&D works for security and defence of the country called 'New, sailing combat vehicle for infantry'	2014-02-18	2014-04-15	1,2,8
Eurostars 2 – 2nd competition	2014-03-06	2014-09-11	2

Subject of the task (completed, on-going – 1/01/2014 – 31/12/2014)	Date of announcement	Date of completion / Planned date of completion (if on-going)	The manner of information sharing about competitions*
SOLAR-ERA.NET	2014-01-15	2014-09-15	2,8
ERA-NET IB 2 – 4th competition	2014-02-01	2014-03-31	2,8
2nd quarter			
1/POKL/4.1.1/2014	2014-06-17	2014-07-15	2,7 (spotkanie informacyjne), 8
Competition no. 6/2014, for R&D works for security and defence of the country	2014-06-12	2014-08-14	1,2,8
Competition no. 1/PS/2014, for R&D works for security and defence of the country, named 'New systems of armament and defence in relation to directed energy'	2014-06-18	2014-09-10	1,2,8
ERA.Net RUS PLUS - S&T	2014-06-25	2014-09-25	2,8
2nd Polish-Taiwanese Competition on research projects	2014-04-07	2014-06-30	2,8
EUREKA-2/2014	2014-05-16	2014-10-15	2
JPI HDHL BioNH	2014-04-14	2014-06-16	1,2,8
CORNET – 18th competition	2014-06-10	2014-09-26	1,2,8
M-ERA.NET - Call 2014	2014-06-06	2015-02-18	2,8
3rd quarter			
Polish-Japanese Research Cooperation – 1st competition	2014-08-19	2014-10-24	2,8
Eurostars 2 – 3rd competition	2014-09-12	2015-03-05	2
Patent Plus – 4th competition	2014-09-18	2014-11-05	2,,3
TANGO	2014-07-21	2014-10-07	2,8
CuBR – 2nd competition	2014-07-18	2014-09-22	1,2,6,8
ECSEL JU - 1st and 2nd competition	2014-07-09	2014-09-17	2,6,8
Environment, agriculture and forestry - BIOSTRATEG – 1st competition	2014-07-24	2014-10-13	1,2,6,8
"Prevention and treatment of diseases of affluence" - STRATEGMED – 2nd competition	2014-07-25	2014-09-23	1,2,6,8
GEKON – 2nd competition	2014-07-09	2014-09-08	1,2,8

Subject of the task (completed, on-going – 1/01/2014 – 31/12/2014)	Date of announcement	Date of completion / Planned date of completion (if on-going)	The manner of information sharing about competitions*
4th quarter			
POLLUX – 4th competition (CORE 2015)	2014-12-17	2015-04-22	2,8
ERA-Net SOLAR	2014-12-15	2015-03-27	2,8
ERA-MIN – 3rd competition	2014-12-17	2015-05-19	2,8
ERA-NET Bioenergy – 9th competition	2014-11-11	2015-06-08	1,2,8
ERA-NET EuroNanoMed II – 6th competition	2014-11-26	2014-03-03	1,2,8
ERA-NET IB2 – 6th competition	2014-12-01	2015-02-23	2,8
ERA-NET E-Rare-3 – 1st competition (JTC 2015)	2014-12-15	2015-02-18	1,2,8
Inicjatywa CORNET – 19th competition	2014-12-18	2015-03-27	1,2,8
FLAG-ERA Call 2015	2014-10-27	2015-01-27	2,8
THE LEADER 4	2014-12-16	2015-03-15	1,2,8

Table 11. **Information about competitions announced by the National Centre for Research and Development**

* number in the column presents the information sharing manner: 1 - conference, 2 - publication on a website, 3 - publication in print, 4 - publication in Public Information Bulletin, 5 - training, 6 - workshops, 7 - other, 8 - press advertisement

SPENDING ON SPECIFIC NCRD PROGRAMMES

Task	Sub-task	Programme/project	Funds spent on the execution in 2014
Financing of applied research	R&D strategic programmes	STRATEGMED	13 623
		Improving of work safety in mines	1 975
		Technologies aiding the development of safe nuclear energetics	12 456

Task	Sub-task	Programme/project	Funds spent on the execution in 2014
Financing of applied research	R&D strategic programmes	Advanced technologies for power generation	45 975
		Interdisciplinary system of interactive scientific and techno-scientific information	7 721
	Execution of programmes that include financing of applied research	APPLIED RESEARCH PROGRAMME	328 703
		Blue Gas Polish Shell Gas	23 205
		GRAF-TECH	20 465
		Social Innovations	4 636
		PBR	5 163
	Support for scientific staff development	The Leader	35 356
	Participation in international R&D programmes	ERA-NET programmes	18 460
		EUROSTARS	3 598
		bilateral programmes	6 768
		other programmes	27 619
Financing of R&D works and their results' commercialisation in subjects able to apply them in practice		Innotech	126 104
		GEKON	20 637
		SPINTECH	4 108
		IniTech	3 387
		Patent Plus	2 141
		Innovativeness Creator	2 042
		GO_GLOBAL.PL	4 419
		BRIdge Mentor	6 725
		NOT contract (1/NOT/2009)	1 144
		Specific Targeted Research Projects	878
Execution of activities for security and defence of the country			335 168
Multiyear Programme: Improvement of work safety and working conditions – 3rd stage			10 500
NATIONAL PROJECTS TOTAL			1 072 978

Task	Sub-task	Programme/project	Funds spent on the execution in 2014
	Action 1.1 Support for research for development of knowledge-based economy		258 979
	Działanie 1.2 Wzmocnienie potencjału kadrowego nauki		77 359
	Action 1.3 Support for R&D project for enterprises executed by scientific units		223 905
	Action 1.4 Support for Specific Targeted Research Projects		498 584
	Action 1.5 Systemic projects of the National Centre for Research and Development		250 496
	Action 2.1 Development of high research potential centres		591 327
	Action 2.2 Support for creation of common research infrastructure of scientific units		212 881
	Action 2.3 Investments connected to science's IT infrastructure development		343 191
	Priority 9 horizontal axis Technical assistance		3 043
Operational Programme: Human Capital	Action 4.1 Strengthening and development of didactic potential of the universities and increasing the number of graduates of majors that are essential for knowledge-based economy		537 002
	Action 4.2 Development of R&D staff's qualifications and increase of awareness of importance of science in economic development		20 126
	Action 4.3 Improving the didactic potential of the institutions in the areas crucial in regard to targets of Europe 2020 Strategy		96 862
Operational Programme: Infrastructure and Environment	Priority 13 Higher Education Infrastructure		414 657
	Priority 14 Technical Assistance*		1 098
The Norwegian Financial Mechanism			87 549
Operational Programme: Technical Assistance*			7 346
EU CO-FINANCED PROJECTS TOTAL			3 624 405
NCRD TOTAL			4 697 383

Table 12. Information about spending in an accounting period on specific NCRD programmes (in thousands PLN)

* funding for task execution for implementing institutions – OPI and PARP

COOPERATING SUBJECTS IN EXECUTION OF CENTRE'S TASKS AND AREAS OF SAID COOPERATION

Cooperating subject	Area of cooperation
Industrial Development Agency	The area of cooperation is the execution of a joint undertaking - Blue Gas Polish Shell Gas.
the General Director for National Roads and Motorways	The cooperation is a result of the agreement signed by NCRD and GDNRM for joint undertaking Development of Road Innovations
KGHM Polska Miedź S.A.	The area of cooperation is the joint undertaking called CuBR.
The Polish Federation of Engineering Associations FSNT-NOT	Based on three-way agreement between the Ministry of Science and Higher Education, the Polish Federation of Engineering Associations FSNT-NOT, and the National Centre for Research and Development, NCRD accepted the rights and responsibilities related to execution of the agreement between the sides, that were hitherto the Ministry's.
National Science Centre	The joint undertaking TANGO is the result of the cooperation.
The National Fund of Environmental Protection and Water Management (NFEP&WM)	In the dint of the cooperation with the National Fund of Environmental Protection and Water Management, programme GEKON has been formed.
The Polish Technological Platform for Innovative Medicine	The subject of the cooperation is the execution of tasks related to innovative medicine sector and INNOMED programme.
The Polish Aeronautical Technology Platform	The area of cooperation is the works for aeronautics industry in Poland, under the INNOLOT programme.
US-Polish Trade Council	The cooperation resulted in the GO_GLOBAL.PL programme.
Plug and Play Tech Center	
Fraunhofer MOEZ	
Academic Business Incubators	

Table 13. **Information about cooperating subjects in execution of Centre's tasks and areas of said cooperation**

PURPOSING OF THE FUNDING FROM THE ECONOMIC SECTOR

Programme/ competition	Number of signed contracts	Total value of signed contracts (PLN)	Total value of additional funding (PLN)	Total of private input (PLN)	Private input of the entrepre-neurs (PLN)
International	91	82 150 127	68 917 201	13 232 926	8 077 526
AAL	1	226 709	170 032	56 677	56 677
BONUS 185	10	6 148 752	2 905 931	3 242 821	505 336
CORNET	7	8 781 777	8 617 231	164 546	0
ENIAC	4	6 465 288	4 116 442	2 348 845	1 838 736
ERA NET BIOENERGY	2	1 513 577	1 463 208	50 369	50 369
ERA NET Chist-Era II	1	946 711	946 711	0	0
ERA NET Eco-Innovera	2	1 142 123	784 130	357 994	357 994
ERA NET ERA-MIN	2	1 660 160	1 660 160	0	0
ERA NET IB 2	3	2 689 438	2 689 438	0	0
ERA NET Infect-Era	1	1 225 583	1 225 583	0	0
ERA NET MARTEC II	2	1 579 217	1 438 511	140 706	140 706
ERA NET NEURON II	1	571 614	571 614	0	0
ERA NET SMARTGRIDS	1	947 717	947 717	0	0
ERA NET SOLAR	1	578 277	431 572	146 704	146 704
ERA NET SUSFOOD	6	3 127 277	2 846 507	280 771	121 527
ERA NET TRANSCAN	5	3 707 304	3 707 304	0	0
ERA NET TRANSPORT III	6	5 914 429	5 727 080	187 349	187 349
ERA-CAPS	1	412 922	412 922	0	0
EUREKA 2	10	7 326 471	6 837 420	489 051	489 051
EUROSTARS	3	3 017 676	2 017 066	1 000 610	299 538
JPI HDHL DEDIPAC KH	4	1 025 018	1 015 733	9 286	0
JPND 2	2	1 446 173	1 446 173	0	0

Programme/ competition	Number of signed contracts	Total value of signed contracts (PLN)	Total value of additional funding (PLN)	Total of private input (PLN)	Private input of the entrepreneurs (PLN)
JU ARTEMIS	5	11 585 081	7 108 936	4 476 146	3 602 487
M-ERA.NET	1	1 560 200	1 508 144	52 056	52 056
POLLUX	3	3 570 098	3 570 098	0	0
Polish-German Cooperation	1	2 878 056	2 649 061	228 995	228 995
Polish-Taiwanese Cooperation	6	2 102 479	2 102 479	0	0
The Norwegian Financial Mechanism	18	80 723 656	80 723 656	0	0
The Norwegian Financial Mechanism	18	80 723 656	80 723 656	0	0
Security and defence	24	493 265 646	463 204 386	30 061 260	24 990 316
Developmental projects 5/2014	1	75 081 677	62 000 000	13 081 677	12 724 918
Developmental projects 6/2014	19	89 921 101	85 049 896	4 871 205	4 522 961
Strategic projects 1/2014	4	328 262 868	316 154 490	12 108 378	7 742 437
OP: IE	168	1 051 270 077	630 120 296	335 274 740	330 732 444
OP: IE	168	1 051 270 077	630 120 296	335 274 740	330 732 444
OP: I&E	4	134 887 997	114 654 798	20 233 200	0
OP: I&E	4	134 887 997	114 654 798	20 233 200	0
OP: HC	102	144 290 821	144 290 821	0	0
OP: HC	102	144 290 821	144 290 821	0	0
Strategic programmes	11	229 086 511	205 080 474	24 006 037	14 713 587
Improving of work safety in mines	1	1 398 840	1 398 840	0	0
STRATEGMED	10	227 687 671	203 681 634	24 006 037	14 713 587
Multiyear Programmes	1	31 500 000	31 500 000	0	0
Improvement of work safety and working conditions – 3rd stage	1	31 500 000	31 500 000	0	0
National projects - applied research	76	146 962 600	135 924 258	11 038 342	10 535 210

Programme/ competition	Number of signed contracts	Total value of signed contracts (PLN)	Total value of additional funding (PLN)	Total of private input (PLN)	Private input of the entrepre-neurs (PLN)
SOCIAL INNOVATIONS	12	9 566 113	8 420 297	1 145 816	642 684
Leader 4	3	3 578 040	3 578 040	0	0
Leader 5	36	40 860 592	40 860 592	0	0
ARP II	25	92 957 855	83 065 329	9 892 526	9 892 526
National projects - commercialisation of R&D	199	1 053 280 190	623 892 874	429 387 316	413 767 320
BRIDGE ALFA	10	184 999 720	147 999 776	36 999 944	36 999 944
CuBR I	3	28 993 879	14 160 487	14 833 393	14 833 393
DEMONSTRATOR BIO-INFO	4	45 020 770	14 646 276	30 374 494	30 374 494
DEMOSTRATOR TECH	4	114 732 700	65 891 911	48 840 789	40 388 229
GEKON	22	83 361 333	61 576 923	21 784 410	21 784 410
GO_GLOBAL.PL II	2	487 158	398 656	88 502	88 502
GO_GLOBAL.PL III	23	5 231 526	4 189 930	1 041 596	1 041 596
INNOLOT	2	99 750 000	54 250 000	45 500 000	45 500 000
INNOMED	17	191 501 574	110 193 299	81 308 276	77 567 264
INNOTECH II	1	3 882 537	3 267 465	615 072	615 072
INNOTECH III	86	284 703 412	139 024 818	145 678 594	142 688 542
PATENT PLUS 2	11	4 370 283	3 357 808	1 012 475	602 763
PATENT PLUS 3	9	3 232 586	2 187 059	1 045 526	1 018 866
SPIN-TECH	5	3 012 712	2 748 465	264 246	264 246
National projects - sector-related	6	86 471 812	53 327 324	33 144 488	23 754 488
Blue Gas II	6	86 471 812	53 327 324	33 144 488	23 754 488
TOTAL	700	3 533 889 437	2 551 636 086	896 378 308	826 570 892

Table 14. **Purposing of the funding from the economic sector**

Dane dotyczące środków pochodzących z sektora gospodarczego odnoszą się do umów zawartych przez NCBR w 2014 r.

ORGANISATIONAL MATTERS

Employment status		
	At the end of 2013	At the end of 2014
TOTAL	268	286
Women	189	203
Men	79	83

Table 15. **Employment records of the Centre's Office**

Centre's Office – Operating costs of the execution of selected tasks				
#	Task // subtask	Operating costs of the task (in thousands PLN)	incl. investing costs (in thousands PLN)*	incl. costs covered from EU funding (in thousands PLN)**
	TOTAL COST	81 975	1 860	35 908
3.2.	Higher Education	9 426	0	8 012
3.2.2.	Education in higher education	7 021	0	5 968
3.2.4.	Support and expansion of higher education infrastructure	2 405	0	2 044
10.1.	Research and popularisation and promotion of science	1 772	0	1 506
10.1.1.	Support for research activities	1 772	0	1 506
10.2.	Strengthening of research for practical applications	70 727	1 860	26 340
10.2.1.	Support for applied research, developmental works and R&D results commercialisation	63 118	1 860	19 873
10.2.2.	Expansion of infrastructure for practical applications	7 609	0	6 467
17.3.	Managing of execution and implementation of remaining programmes financed with the non-refundable aid funds	50	0	50

Table 16. **Centre's Office – Operating costs of the execution of selected tasks*****

*funds from investment donations and funds for Centre's investments under the Operational Programme Technical Assistance have been included. ** funds from the Norwegian Financial Mechanism (financed under purpose donation from MRR, paragraph 2005), funds from Operational Programme Technical Assistance (financed under purpose donation from the Ministry, paragraph 2008), and refundable funds from European Commission for international programmes have been included. *** In relation to investment funds, expenditure data comes from 2014. Depreciation in 2014 equalled 1,417,986.16 PLN

Centre's Office – Execution of the financial plan					
#	Content	The plan according to the budget act	The plan after changes	Execution	%
		In thousands of PLN			
I	TOTAL REVENUE	5 317 761	5 142 630	4 779 358	92,94
1	Subsidies from government	1 788 873	1 801 426	1 741 791	96,69
1.1	- subjective	40 427	40 427	37 760	93,40
1.2	- purpose donations*	1 746 448	1 759 001	1 702 171	96,77
1.3	- subsidies for investments and investment purchases	1 998	1 998	1 860	93,09
2	Funds received from European Union	377 807	365 254	219 037	59,97
3	Other revenue**	3 151 081	2 975 950	2 818 530	94,71
II	EXPENDITURE	5 317 761	5 142 630	4 779 358	92,94
1	Operating costs	84 561	89 311	80 115	89,70
1.1	- Materials and energy	1070	935	529	56,58
1.2	- Other foreign services	16 533	18 697	14 503	77,57
1.3	- Salaries	36 079	36 506	35 712	97,83
	- personal	22 027	22 027	21 984	99,80
	- impersonal	12 414	12 966	12 280	94,71
	- other	1 638	1 513	1 448	95,70
1.4	- Social insurance fees	4 905	4 169	3 520	84,43
1.5	- Labour Fund fees	724	604	454	75,17
1.6	- other operating costs	25 250	28 400	25 397	89,43
2	Capital expenditure	2 098	2 098	1 860	88,66
3	Expenditure for tasks execution, incl. those given to other subjects*	2 068 262	2 063 512	1 865 721	90,41
4	Other expenditure**	3 162 840	2 987 709	2 831 662	94,78

Table 17. Level of execution of yearly financial plan of the Centre

The table is a simplified presentation on the progress of implementation the financial plan of the National Centre for Research and Development. Presented implementing revenue represents only the funds used for 2014. (correction has been made for refunds of unused appropriations and for passing between the years unused funds received from the Commission EU).

*The revenue 1.2 and expenditure 3 additionally include national funds that are transferred from the Minister of Infrastructure and Development to beneficiaries under the Norwegian Financial Mechanism - Centre has access to those funds based on permission to directly debiting in BGK (a state-owned bank)
** The revenue 3 and expenditure 4 includes European funds, that are transferred from the Minister of Finance to beneficiaries - NCRD can allocate those funds based on permission to directly debiting in BGK (a state-owned bank) according to and act on public finance.

NATIONAL
COHESION STRATEGY

EUROPEAN
UNION

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