



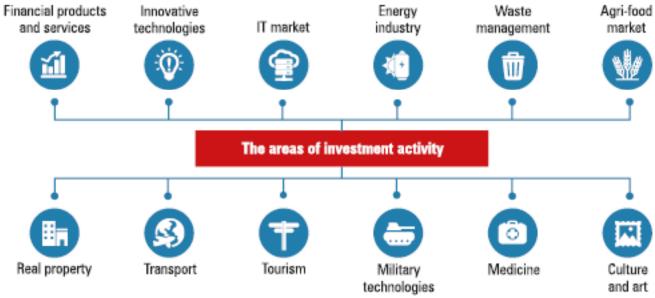






Investment Service Centre (ISC) is an innovative, international business structure associating high-level experts. Our main objective is financing investment projects and connecting investors with projects of high business potential.

We boast a robust network of partners and an extensive expertise in conducting investments of varying scale and in different areas of interest.



### We can offer the following assistance:

- preparing an optimal investment offer for entrepreneurs who seek capital;
- finding investors for projects with a high business potential;
- accelerating startups:
- acquiring grants from EU schemes, research funds and other financing programmes;
- organizing conferences, trade missions, trade fairs.







# LETTER FROM PROF. KRZYSZTOF OPOLSKI

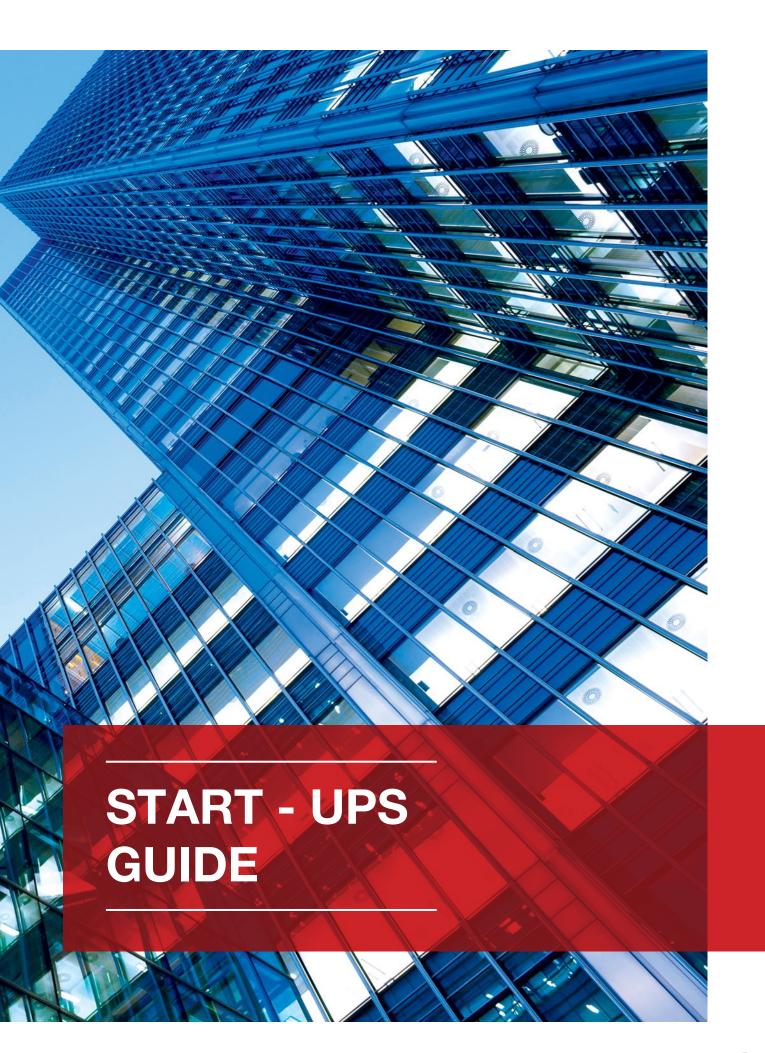
Ladies and Gentlemen,

On behalf of the Investment Service Centre, it is my pleasure to give you the "Innovative Technologies" guide, which presents the actual view of innovative technology in our country in the most genuine way possible, as well as the changes which occurred during the recent years. I do it with utmost pride, for the last year was the time when once again we have proven our business effectiveness. Our country is constantly showing not only its upward tendency of realized investments, but also their high profitability.

As an uprising market, Polish economy is very well situated in comparison to other Central and Eastern European countries, and even to the entire European Union. The last two years were the period of struggling with the effects of the world's economic crisis. Even though it did not have such a drastic course as it happened in other countries, it was felt in almost all aspects of life. The majority of Polish businessmen are, first of all, dependent on their citizens, their talents, knowledge, entrepreneurship, initiative and involvement.

The directions and dynamics of changes in social-economic situation have forced the need of having a new view on Poland's progression, the result of which is to perform actions towards the intensification of abroad investments. Although European average rate of research and development investment surpasses that of Poland's, the innovation growth of Polish economy rises faster than in many EU countries. The last year was the year of mutual work of experts, ended with formulating challenges and long-term aims of development.

I hope that this guide will be a truly valuable source of knowledge on Poland and its investment possibilities.





### Start-up as a form of business conduction

More and more young entrepreneurs decide to start their own business. New enterprises often acquire a start-up form – micro and small enterprises focused on development of a particular product or service, actively searching for matching business models. Start-ups are characterized by a small number of workers (there are usually no more than 20 people in a team) and free management model. They are dynamic constructs which evolve along with market demands and an enterprise's opportunities.

As a form of business conduction, start-ups are featured with many assets. Their main valour is the possibility of easy adjustment to the market's changes. Contrary to large enterprises, the decision- making chain in a start-up is quite short and enables quick reacting in case of occurrence of new technologies or competitive solutions. Undertaking relevant decisions in a team influences bonds tightening between the employees and improvement of the workplace's atmosphere. The start-ups workers are more satisfied with their job and they execute their tasks with utmost ambition. What is more, a less bureaucratic approach towards company management enables a start-up to focus on its most important aim – to improve their offered product or service.

Young enterprises possess perfect auto-promotion possibilities. Start-up brands have clear 'personality' – they are innovatory, ambitious and fresh. Solutions proposed by young, full of passion and capable entrepreneurs meet the sympathy from the clients and approval from the media. Despite the fact that there are no groups of specialists for brand image creation behind a product, it defends itself only thanks to its high quality and growing number of interested clients. It allows for adjusting competitive prices and gives the opportunity for their negotiation – many people would rather invest in something more expensive, but personalized, ecological or created via innovatory method.

It is worth to remember abovementioned assets of start-ups in moment when a person loses their faith in their enterprise's success. Nowadays, solutions suggested by micro- and small enterprises might compete with those which have experienced, large companies behind them – it requires consciousness about threats endangering start-ups at every stage of their functioning. It is also worth knowing which actions and oversights of the entrepreneurs might cause a prematured start-up fall.

Information can be found in the next part of the guide.

## Life cycle of a start-up and most important challenges

The starting period of activity of every start-up might be divided on several stages. They directly respond to the greatest challenges against which every startup beginner stands in the process of implementing their product on the market. If in the face of these obstacles the start-up initiator gives up, the start-up may fall. That is why it is significant to acquaint with the life cycle of a typical start-up.

The initial phase is called discovery phase. During this phase, an entrepreneur gathers data on the target market, planned client's group, distribution network and possible competition. The aim of the discovery phase is to determine which feature of the offered product is unique and distinguishes it from the competition – it is to be the axis of the promotional campaign. At this stage, a start-up often join an accelerator or an incubator, which significantly increases its chances of success.

In validation phase, a start-up checks interest in its solution. First customers ort users report their comments on a product which allows the entrepreneur to improve and adjust it to the customers' needs. It increases the range of the product, and what is more, the number of a company. At this stage, it is a key step to implement market analyses, thanks to which a start-up could efficiently react upon all the technological and social changes. Furthermore, the validation phase is the last opportunity for implementing plan B and executing radical changes in the structure and the model of a start-up's activity.

Phase three, the efficiency phase, is the very foundation for further development of a company. The process of a start-up's clients acquisition is being improved, the number of employees is increased, business structure and model are stabilised. The sale process is becoming more automated, new distributors and trade partners appear. At this stage, a start-up should have an already renowned brand. It does not mean that a start-up rejects the possibility of implementing changes, though – it still remains a dynamic construct evolving along with the market's demands. In order to maintain this flow it is necessary to constantly use the analyses which were initiated in the validation phase.

In phase four – scaling (which stands for quick growth) – a start-up is developing very rapidly and it accelerates its growth. A company obtains new markets, sometimes even foreign ones. The product-service offer is extended, new technologies and solutions are implemented. In a company's organization changes also occur: topic divisions and director vacancies are being created. A start-up begins to get closer to a classic enterprise with its structure.

After the start-up period, an enterprise passes into commercialisation phase. The solutions suggested by it reach more and more broader group of recipients and may be produced on a mass scale. The enterprise's structure is stabilising, contacts' network and associations are being developed. Start-ups which last until this stage are usually strong enough to maintain on the market, although they still may require help in reaching to foreign markets or cooperating with other industries.



Reckoning the stage of activity a start-up is currently at and what challenges are still ahead are crucial for the success of an entire enterprise. Omission of any of abovementioned stages is often connected with reaching slower progress and incoherent conduction of the enterprise. A balanced start-up development influence its profits in future and increases its changes for achieving success.

### Why start-ups fall?

Statistically, about 50% of all start-ups are doomed to fail in first four years of their existence. Accurate values depend on the branch in which a start-up operates. The most risky thing is to initiate a business activity in IT sector, transportation and media. Relatively highest chances of success are with insurance agencies and educational projects. It must be noticed that a failure does not mean a definite finale of the enterprise: an entrepreneur who failed with one start-up can smoothly move to work with another one. Experience acquired during an unsuccessful attempt of initiating their own activity may be imperative for the success of next business.

There are many problems which must be challenged by new enterprises. Quite rarely the reason for start-ups' failures are external factors, such as random situations and catastrophes. The basic gripe the starting businesses deal with are lack of experience of their founders. Possibility of focusing on improvement of a product, being one of main start-ups' assets, quite often becomes a trap. An enterprise does not pay attention to formal-legal issues, such as necessity of conducting accountancy or reports. It is connected with the threat of administrative penalties and great financial burdens at the very beginning of



activity, while incurred losses may have an impact on a start-up's fall.

The fall of a start-up is also concurred by missing resources access. Product's and service's improvement requires funds and access to research and test instruments, which is often available only in specialised institutions. A young entrepreneur cannot always use them for they do not have sufficient contacts. R&D facilities are not always eager to share their infrastructure to an unknown entity which makes the work for solutions impossible. A product which cannot be put under tests quite often does not reach even to prototype phase.

Even start-ups which in their initial stage of existence get on quite well can encounter serious difficulties. One of them is stagnation and inhibition of a product's or a service's development. It is due to lack of knowledge on target market and lack of contacts with entities which perform in this field of interest on everyday basis. It reflects in gradual decrease of interest in start-ups' propositions and loss of clients. In order to stay in a market, a start-up must develop: constantly improve and extend its offer. If it cannot maintain its stable innovation level, it is doomed to failure.



Start-ups which achieved spectacular success are quite often being heard of. Hardly anyone remembers the names of these enterprises which fell. It is a truly horrifying prospect for a young entrepreneur. There are, however, entities which may help a start-up in overcoming such difficulties. Enterprise accelerators are a support for promising start-ups.

### Start-up accelerators - development help

Accelerators are entities which help start-ups with managing the formal-legal part of a project. Depending on the offer, accelerators conduct incomes and outcomes register, acquire clients and financing for projects and help in settlements of obtained grants. It helps the entrepreneur freely focus on suggested solution development and success achievement.

Finding an investor, distributor and supplier of technology is a great challenge for a beginning entrepreneur – not all entities share their data in the Internet. Accelerators often dispose a vast contacts network and offer their help with finding an investment partner matching the start-up's needs. What is more, they have access to many investment funds and help in choosing a proper financing model.

One of the accelerators with rich offer for project at any stage of development is Investment Service Center (ISC). It associates experienced experts and investors from all over the world. Because of this, dozens of entrepreneurs from Poland and Europe have put their trust in it. Among other accelerators, ISC is distinguished with complex approach to start-ups se-

rvice – not only ensuring financing and mentoring, but also enabling an enterprise to use modern laboratories and skills of highly qualified scientific crew and expansion on international markets. ISC also possess its own Internet platform called Smart Ecosystem which performs a function of start-up management centre, as well as a medium for establishing contacts with the investors and research facilities.

We invite you to acquaint with the guide on the most important fields and issues in which ISC may provide help for start-ups.

### Most frequent errors made by entrepreneurs

Start-ups owners begin their activity with optimism and confidence. They have innovative ideas which would surely find esteem among clients and capability to enforce it in life. But they quite often are not aware of the fact that the very idea is not enough. Conducting a start-up, even though requiring fewer formalities than in case of a classic enterprise, also means the necessity of skilful project management. In this aspect, the Investment Service Center's accelerator, which would teach an entrepreneur how to effectively manage a start-up, may be helpful. Upon reckoning and defining the needs of a particular start-up, ISC appoints a coordinator responsible for defining its development and helping in terms of avoidance of aforementioned errors.

One of main reasons for start-ups failure is already mentioned lack of basic competences necessary for conducting a company. Entrepreneurs who do



not possess experience in management, finances or accountancy often forget about these aspects of conducting an economic activity. In order to develop their activity it is imperative that market analyses be conducted. If a start-up was founded thanks to financing from a certain fund, the necessity of preparing periodical reports becomes an additional obligation. Even if the entrepreneur is aware of these requirements, they do not always have time to fulfil them - and not all of micro and small enterprises may hire a specialist. ISC help start-ups with conducting a full documentation of their activity, runs accountancy and market analyses as well as prepares all the necessary periodical reports for funds. In addition, if an entrepreneur needs additional funds, the accelerator help him in finding proper financing or an investor.

The second frequently made error is inappropriate resources management. Entrepreneurs - beginners have difficulties with proper estimation of possessed intellectual capital value, size of equity contribution and the size of production. Lack of knowledge of market prices, too rapid development and inappropriate distribution of products make the start-ups develop by leaps and bounds. In such case, one improper move may cause the failure of a start-up. Using ISC services, the entrepreneur is given an opportunity of acquainting with the currently existing market conditions, settling proper prices range and size of equity contribution. It allows for learning autonomic risk management in a company, which is really important in next stages of an enterprise's activity and necessary to achieve success.

Young enterprises often cannot define target group of clients and they try to make a product "for everyone". In most cases, such an approach does not work and greater success is achieved by solutions directed towards a particular recipient. A good identification of clients' needs and properly matched marketing strategies and manner of products' distribution is also part of a start-up's success. ISC conducts full analysis in terms of target market – it helps with identifying target group and setting marketing strategy to its preferences. Investors potentially interested in technology are gathered by the accelerator through data exchange network called European Green Technology Alliance (EGTA), consisting of 21 European clusters.

Entrepreneurs- beginners often forget about how important is the client's opinion. It is the very opinion which allows for constant improvement of a product and setting the offer to the market's demands. Feed-

back is extremely important for every enterprise, for it allows to eliminate errors and imperfections. What is more, the clients notice if and how their suggestions are used in real life which builds reliability and trust for the brand and it also contributes to the increase of a product's range. ISC conducts research of clients' satisfaction and delivers the information to the entrepreneur – thanks to which they can easily improve their products. Additionally, mentors' involvement in the project from many large enterprises accelerates proper development of the solution suggested by the start-up. Constant data access is allowed by Smart Ecosystem platform, which also serves as a contact channel with mentors and advisors of ISC.

A major error which always ends with a start-up's failure is incompetently determined direction of an enterprise's development. Entrepreneurs- beginners try to follow the start-ups which already achieved success instead of searching for their own success formula. Not every start-up is the same and the solutions which proved in case of one of them may be useless or even dooming in case of another one. Heeding advices is also art, which at the beginning of





activity may be difficult to master. An entrepreneur who decides to cooperate with ISC will receive an opportunity to use the knowledge of experienced experts in terms of their field of interest and scope of activity. The accelerator organizes trainings, meetings with mentors and discussion panels in the most convenient place for a start-up as well as virtually via Smart Ecosystem platform. ISC is characterised by individual and matched to the customers' requirements approach.

### The start-up acceleration procedure in Investment Service Center

Each project supported by the Investment Service Center has to go through several stages. In the initial phase, the solution suggested by a start-up is compared with the requirements set by big companies that cooperate with the accelerator. The profitability and investment potential of each project are evaluated. Start-ups that successfully qualify to the acceleration programme are then monitored by ISC experts throughout all the development phases to the commercialisation of their solution. ISC specialists can accompany the start-up during every stage of business activity.

The discovery stage is a breakthrough moment for every start-up. During this phase ISC helps the young entrepreneur to define the unique aspects of their solution and tailor the marketing campaign to highlight these qualities. In the second stage, validation, the accelerator can assist in making numerous important decisions concerning the development of the company in the context of the current market situation. Moreover, ISC offers individual help with accountancy, finances and market analysis.

During the acceleration process the start-up has constant access to specialist support for marketing strategy design and product distribution. It is crucial during the efficiency phase and has a direct impact on the incoming scaling stage. As the company scales, start-up still can benefit from the help of mentors. ISC experts can support the entrepreneur with planning the further development of the company and adapting a suitable business model.

The primary objective of the European Green Technology Alliance is the facilitation of international partnerships between various entities. These partnerships result in a common goal - designing, testing and implementing a commercialised, innovative solution. EGTA is also a European platform for technology and specialist knowledge exchange. Activities undertaken by EGTA can be sorted into 6 categories, which can then be further divided by areas of interest in which the innovative solutions are implemented. These areas of interest range from everyday uses, such as food production, transport and medicine. to important business and economic issues. Start-ups cooperating with ISC will be able to make use of the resources offered by EGTA and find suitable financial and technological partners.

ISC offers the possibility of cooperating with the Emirates & Europe Business Development Cluster. EEBD helps the company to easily find a source of financing. EEBD is an entity focused on building partnership between European and Emirati companies. Cluster supports all activities and investments that help to improve business relations between Europe and the United Arab Emirates. It is especially important for start-ups which want to branch into foreign markets, especially the quite exotic and often inaccessible Emirati market. Companies looking for investors from all over the world can also benefit from partnership with EEBD.

The distinguishing quality of ISC is the Smart Ecosystem platform used for project management. Implementation of a digital platform improves the efficien-



cy of startup acceleration process. Smart Ecosystem is intuitive in use and compliant with all security standards. Startup can access the knowledge database as well as contact ISC mentors and experts through the platform. Moreover, Smart Ecosystem enables access to a network of specialist laboratories and highly qualified staff. Desired facilities and personnel can be freely booked though the platform.

## Investment Service Center as a support for companies

Investment Service Center is an innovative, international business structure associating high-level experts. Its main objectives are start-up financing and looking for projects of high business potential for the investors. ISC boasts a robust network of partners and an extensive expertise in conducting investments of varying scale and in different areas of interest.

ISC acts globally, with representatives in such countries as Poland, Croatia, Spain, Belgium, Ukraine, Romania, Bulgaria, The United States, The UAE, Qatar, India and China. ISC closely cooperates with several worldwide investment funds for financing new and established businesses.

ISC assists the young entrepreneur in verifying and developing their solution, creating business and marketing plans for its successful launch and financing current and future investments of the start-up. The accelerator organises trade missions, fairs and conferences, during which start-up can establish invaluable international contacts and expand its activities to foreign markets.

### **#StartInPoland - European Startup Valley**

Poland is a promising field for development of innovative projects. More and more companies decide to start investing in the markets of Eastern Europe. Thanks to its convenient location, rapid economic development speed and qualified human capital, Poland is often chosen by entrepreneurs who wish to start their companies.

Start-up initiatives are actively encouraged by the Polish government. In response to the growing interest in establishing own business the #StartInPoland programme was launched. This support scheme is addressed to micro- and small companies which offer solutions useful for bigger businesses. It is comprised of two main activities: incubating of the most interesting projects and supporting accelerator pro-



grammes. Other national Polish programmes for financing start-ups were launched by, among others, President of Poland and the Prime Minister.

As an accelerator, Investment Service Center has joined the #StartInPoland programme. To help in fulfilling the objective of the programme, ISC has founded the cooperation network for developing start-up projects and facilitating access to proper infrastructure and mentoring regardless of their physical location. The cooperation network comprises of selected technological parks, research institutes and science units operating in Poland. It is compliant with the conditions of the programme which emphasise the need of utilising existing infrastructure and the potential of young entrepreneurs to strengthen Polish economy.

#StartInPoland guarantees financial support until the creation of a functional prototype. Companies participating in this scheme may apply for other sources of funding on the latter stages of their operation. ISC can assist in selecting a suitable investment fund or finding an investor. Moreover, the cooperation network enables start-ups to access laboratories and test fields as well as closely work with qualified academic staff.

All investments realised by Investment Service Center – as part of the #StartInPoland scheme as well as those outside it – create an enormous innovation potential. The success of every project is achieved through effective management of both technological and financial risk. Cooperating with ISC enables the young entrepreneur to focus on the most important issue – developing and improving the project – at the

same time giving them a chance to learn how to manage a startup by themselves. We would like to invite you to cooperate with ISC and make your dream startup a reality!

#### LINKS:

- Investment Service Center www.investpl.eu
- European Green Technology Alliance www.egta.eu
- Emirates & Europe Business Development Cluster www.eebd.eu

#### LITERATURE:

- K. Pryor, Here Are the Startup Failure Rates by Industry, http://tech.co/startup-failure-rates-industry-2016-01, accessed on: 04.10.16
- L. Alton, 5 Competitive Advantages Startups Have Over Big Businesses, https://www.entrepreneur. com/article/247412, accessed on: 04.10.16
- M. Marmer, B.L. Herrmann, E. Dogrultan, R. Berman, Startup Genome Report, A new framework for understanding why startups succeed, startup-compass.co
- PARP, Rusza program #StartInPoland pakiet instrumentów dla innowacyjnych firm (The launch of #StartInPoland scheme – a support tool for innovative companies), http://www.parp.gov.pl/ruszaprogram-startinpoland-pakiet-instrumentow-dlainnowacyjnych-firm, accessed on: 04.10.16
- P. Graham, What startups are really like, http://www. paulgraham.com/really.html, accessed on: 04.10.16
- T. Koulopoulos, 5 of the Most Surprising Statistics About Startups, http://www.inc.com/thomas-koulopoulos/5-of-the-most-surprising-statistics-about-start-ups.html, accessed on: 04.10.16







Though there is a wide gap between having an idea and implementing the innovation it carries, the innovations are the real driving force behind economic development. An effective innovator is able to link technological mastership with openness to challenges, courage to meet what is unknown and readiness to cooperate with others.

### Innovations and competitiveness of companies

Technological innovations, understood mostly as new products, new production methods or new work management methods, can strongly influence the competitiveness of companies. Efficiency growth leads to productivity growth, affecting positively the competitiveness of companies, which is essential nowadays. Innovations enable companies to improve the quality of products and services, decrease production or provision costs, rationalise production, lower energy and material consumption, enrich product offering and put their products or services on new markets.

A company, in order to trade effectively, should constantly seek for new solutions. Innovations allow for

strengthening its position on the current market or increasing its competitiveness on the new market. Striving for profit maximising and operating costs minimising, the company naturally becomes an innovator – a subject which commercialises new technology and implements innovative idea on practical terms.

### Managing technologies in company

In the case of the knowledge-based economy, the applied technologies are decisive factors in terms of advantage and goodwill of the company (the competition between Microsoft and Apple is a good example). That is why understanding technological development path and wise technology management are the key aspects for companies' progress. Taking into account the latter aspect, what matter the most are the life cycle of technology and its competitive force. The curve of technology life cycle, also called the potential of technology, reflects the shape of "S" letter, which means that in the initial stage of "life" it requires some improvements, whereas in the final stage it reaches the maximum of its effectiveness. Being well familiarised with the life cycle of technology al-

lows entrepreneurs to replace old technology with the new one in the most suitable moment.

Competitive force means the influence of particular technology on reaching competitive advantage. Being aware of competitive effectiveness of individual technologies allows entrepreneurs for setting priorities in terms of increasing and strengthening them. It should be managed, of course, with particular focus on strategies and objectives shared by the company. Depending on competitive force, technologies can be categorised as follow:

- Base technologies they are basic and widely used technologies, which are essential for the company operating, but rather ineffective when it comes to building company advantage on the market.
- Key technologies they allow entrepreneurs to reach the competitive advantage.
- Setting-pace technologies they are progressive technologies, which are in their initial development stage, but have chances of replacing key technologies and, at the same time, increasing the company's competitiveness.
- Emerging technologies they are technologies which usefulness has not been proved yet; however, after refining them, they have chances of changing competition rules in particular business.

### **Technology Transfer**

Under conditions of fierce competition, growing consumers' needs and shorter life cycle of products and technologies, companies need to constantly seek for innovations and implement new solutions. New technologies may come from internal sources (therefore they can be produced in research and development units operating on the premises of a company), external sources (in this case companies use technologies developed by separated units) or mixed sources (both from internal and external sources).

When acquiring technology from external sources, technology transfer may reflect the vertical or horizontal form. Horizontal technology transfer takes place between companies and means, among others, sale of patents, licences and the "know-how", undertaking joint actions and industrial cooperation. Vertical technology transfer means, above all, acquiring knowledge on public R&D sector, including purchasing inventions, patents, licences and utility models as well as assigning contract research.

It is worth mentioning that technology transfer covers not only the most common forms and innova-

tion media such as publications (open knowledge media), patents and licenses (protected knowledge media), but also various courses, trainings and trade fairs (formalised channels of diffusion of innovations), mergers and acquisitions, informal contacts with clients or the purchase of innovative machines and devices.

Technology transfer is also a much more complicated process than typical commercial exchange. On one hand, technology supplier is a monopolist but, on the other hand, what is the subject of the exchange are new solutions, which effectiveness cannot be precisely predicted.

### 5 stages of technology transfer process

Technology transfer makes competitive position building easier, however, the process can be successful only when it is effectively implemented in business practice. The task is complicated and innovators have to pass it. According to the team led by Prof. Krzysztof Santarek, technology transfer process consists of 5 stages:



Generation of ideas and preselection of projects are stages which answer the question: what can this new technology bring to the market? These first two stages of technology transfer process lead to identification of commercial potential of innovation or new technology. Incubation stage involves defining the product and determining its specification as well as validating technology effectiveness in terms of market needs. Incubation should also contain demonstrating, at least in laboratory conditions, the most characteristic product features, and creating business plan with the information about business risk and the ways of limiting such risk4. The last two stages are promotion and implementation of solutions that have a defined and confirmed value with the support of innovation and business centres.

### **European Network of Technology Transfer**

In the modern world, people are witnessing the dynamically developing market economy; bigger and bigger share of it lies in advanced technologies. The issue of technology transfer becomes an incredibly important element of raising the competitive advantage of the enterprises. The above mentioned technology transfer process is differently defined.

According to the most common definition, it includes handling exact knowledge and inventions directly to economic practice. The older meaning, based on the patents trade, design patents, licenses and "know-how", was ousted by the wider definition, which defines the technology transfer as many forms of popularizing the innovations, technical education and stages of implementing it into the sphere of production activity. The boundary between the sector of science and research and the procedure of fabrication keeps blurring.

Currently, the technology transfer means also the cooperation of European clusters, which is to counteract the European and non-EU economies. The partners in cooperation are, in many different combinations, scientific and research institutions as well as big, middle-size and small enterprises. The participants of the platforms may include 325 entities, which are located in 18 countries, including 21 large international clusters. The entity that leads to unification of these activities from the entire Europe - is EGTA. European Green Technology Alliance is the European platform for technology transfer and knowledge about market and technological trends, which also contains some remarks and examples of good praxis in technology transfer. This base offers also innovational solutions in many important fields of global economy and contains the profiles of scientists and experts who directly cooperate with the initiators of the projects. As the members of EGTA, they coordinate particular operations; they are also present while discussing the conceptions and offer their help in implementing the ideas.

The activities of EGTA are divided into 6 parts in which we take actions, aiming in implementation of technologically better solutions into economical structures. They include both universal areas connected with:

- Financial products and services,
- Innovative technologies,
- IT market,
- Energy,
- · Waste management,
- Agricultural and food industry,
- Real estate industry,
- Transport,
- Tourism,
- Military technologies,
- Medicine,
- Culture and art.

#### Let's talk about future

In global economy there are innovations which guarantee the success of single companies and entire economies. Poland is a country which role rapidly evolves both on the European and global markets, being considered the supplier of cheap labour in the 1990s and the source of highly skilled human capital in business services sector in the last decade. Our country is at a threshold of enabling its potential in terms of developing technological ideas and generating innovative technologies. There is a clear evidence that Poland is becoming a crucial technological player on global markets as Polish inventions are recognised by respected international investors and conquer global markets.

Why is that? Have we become more innovative because the genius dawned on us? Well, no. Poland's accession to the European Union simply enabled international knowledge transfer processes, which granted Polish scientists, engineers and makers access to great global know-how and taught them how to benefit from cooperation and contacts and use them for commercialising their own solutions. Thanks to various forms of the knowledge transfer, we do not have to duplicate existing ideas, but focus on our inventions, which have access to capital and modern methods of commercialisation.







SmartPay system was created to simplify everyday management of multiple bank accounts and loyalty point schemes.

## It contains the following apps:

- My Accounts enables access to multiple bank accounts from one app and easy transfer of funds between them. It allows the user to choose one preferred method of authenticating their transactions and use it throughout all of their accounts;
- My Wallet ensures secure payment services through a smartphone and simplifies personal finances management. It gives the possibility of continuous monitoring of the expenses. This will allow the user to be more aware of their spending habits and make saving easier;
- Loyalty Points an app which integrates access to all the loyalty programs selected by the customer and allows the user to track the amount of points on every loyalty scheme they participate in. The app makes it easy to view how many points are on a particular loyalty accounts and check how many points remain to reach a particular reward;

Smart Help - a support parcel developed to ensure full control over the funds from social support programmes. It is designed for private users and for authorities. It can also be used as a system solution for a certain support scheme. The donor can monitor the way of spending support funds, which gives them certainty that the funds are managed in a proper manner.

The external part of the SmartPay system, the Multicard, enables consolidating all available bank cards, access cards and loyalty scheme cards into one secure card with built-in anti-forgery protection.

In order to operate, SmartPay uses the Green Cloud technology. It is a cloud service with almost unlimited possibilities of development. The Green Cloud applications work within the dispersed structure, which enables their activity in many instances on many servers.



Intelligent banking system which heads towards Personal Assistance class systems realizing Personal Finance Assistant paradigm. The very functionality of the system refers to the latest trends in Internet and mobile banking.

Out created banking applications were implemented in several banks and financial institutions and ensure the highest level of certification and security. In addition, they predict, on the one hand, easy integration with bank systems' integration and, on the other hand, an ergonomic, modern interface for customers related to widgets' solutions.

The system ensures maximum concentration on the customer and his or her needs and the convenience of its use simultaneously, minimization of time of the server's use, remaining on-line all the time and the use of involvement and cooperation with the customer.

Delivering and implementing of software is based on open-source solutions and on original products, being an exclusive possession and know-how of the company. It means an absolute control over the source code, all functions and parameters of the offered informational solutions.



## Platform's components:

- Main book Main book.
- Data bus,
- Communication interfaces.
- Card and micro-payments usage system,
- Customer Service call center.
- Mobile and Internet banking.
- Authorization center.

and payment terminals operating with the use of any available technology, including the latest, which means NFC, biometric or mobile.



Information flow is one of the most important motors of innovation. Smart EcoSystem was designed to meet the needs of modern industries.

It is a dedicated platform for data transfer aimed at businesses, research institutes and NGOs. By using the platform, entities can freely and safely exchange their knowledge, technologies and products.

## The goals of the Smart EcoSystem are:

- develop new products, technologies, knowledge:
- create opportunities for innovation;
- enable effective exchange of information.

Smart EcoSystem is reliable, intuitive and secure. Companies have full control over the amount and quality of data released onto the platform. Smart EcoSystem has advanced privacy settings which allow the company to block certain users or anonymous visitors from viewing the company profile. Intellectual property is protected by advanced security settings.

## Smart EcoSystem offers numerous advantages:

- easy exchange of innovative technologies and ideas;
- improved communication between commercial and non-commercial institutions;
- protecting intellectual property.



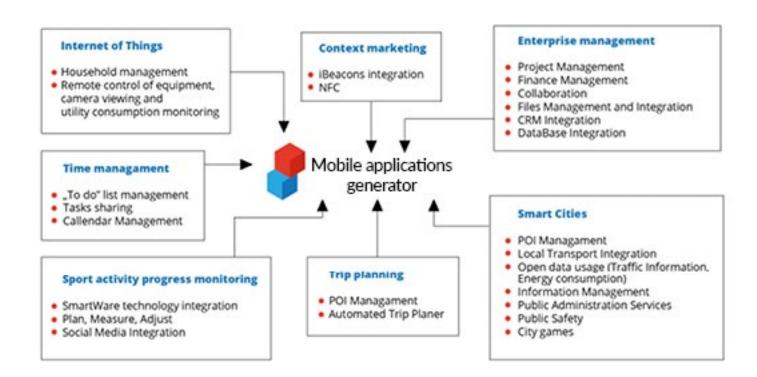


ECH. Ob

Connect all services and apps into one mobile application.

We are a cross-platform app building siute to connect and manage different app modules (API) that guarantee a smooth integration of mobility into

life. Final user, through a friendly 4-step creator, can build comprehensive app, tailored to personal preferences and news.

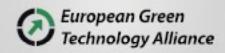


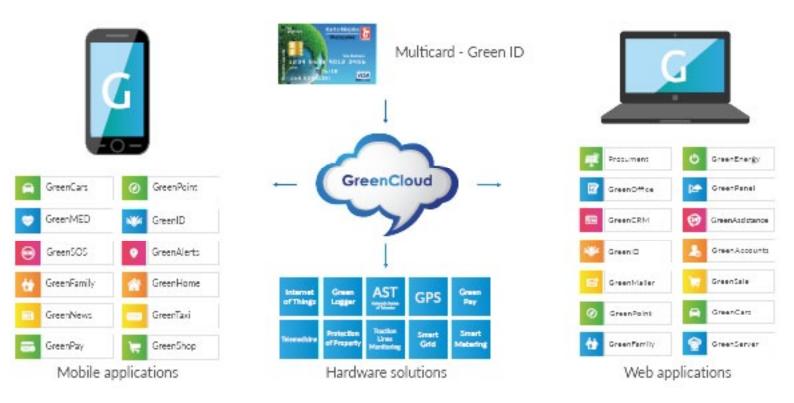


We brings full service solutions for professional multifunctional kiosks. We develop reliable and beautiful products of integrated software and hardware.

End-users are the center of our attention. Our kiosks provide support to organizations in their processes and moreover give high level of investmient (ROI/TCO). The latest trends in contemporary industrial design provide inspirations to the development team in designing dedicated solutions. Our clients value the modern and orginal look of our products and reliable, user friendly intrfaces. Thanks to our work we can bring solution combined with software and hardware.







## Green Cloud technology

GreenCloud technology has been developed by Green IT company, a member of Smart IT Cluster. It is a platform which receives data from users' devices and, in a standardised way, shares data in applications selected by the user. It also enables work of unlimited number of devices and applications.

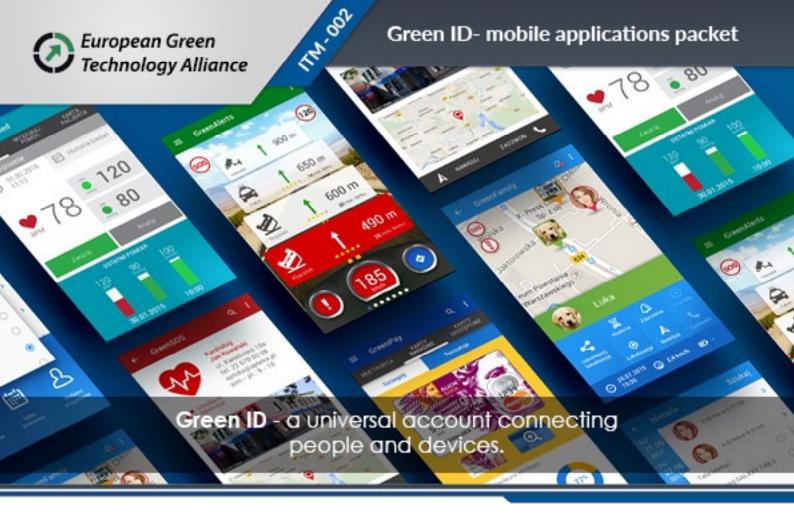
Technology of Green Cloud makes it possible to process, store and analyze data streams of "Big Data", which are generated by sensors, portable computers and RFID readers. Services and applications that work with use of this technology are as follows: Green Logger, AST, Green Med and many others.

## As far as the user and application is concerned:

- Authorisation of GreenID users through OAuth2 protocol.
- Access to data through API,
- SSL communication ciphering.
- Extended configuration of users' devices.
- Different levels of authorization.
- Access to certain data (according to time of measurement and data type),
- An open platform for creating own apps.

### As far as the device is concerned:

- Support of many different types of protocols:
  - Low-level for built-in systems.
  - High-level for apps and mobile devices.
- Support of different ways of authorization of devices ranging from the simplified according to IMEI for simple devices such as GPS to tokens,
- SSL communication ciphering.
- Collection of any data determined by the device driver.



Nowadays more and more devices can work autonomously. Green ID was developed in order to enable people to use their devices to a full extent. It allows the user to collect and remotely access data pertaining to their everyday life through various useful applications.

- Green ID operates in the Green Cloud technology;
- Every account can be linked to a number of electronic devices: phones, tablets, smart home appliances and many more.
- The data cloud integrates data received from devices and presents it in a comprehensive, easy to understand way;
- Green ID supports applications for device localisation, transport and logistics, telemedicine, electrical energy management, electronic payment and many more;
- Green ID can also support external apps developed in accordance with cloud standards.
- The external part of the system, the Multicard, can be used as a payment card, card key or any other type of microchip card.





We are behind motion platform technology that takes virtual reality to the next level. We combine our unique software and hardware to provide more exiting and real-life experience for all sets of VR googles. Our solution is based on hydraulic system allowing to augment the thrill of adventure and making an exquisite experience even more realistic and tangible. We are a complex provider of content and cutting-edge hardware for one of a kind virtual reality immersion. It can be easily applied in entertainment /amusement industry as well as aviation, automotive industry and many more.

## USP:

- Plug&play, cutting-edge hydraulic platform combined with virtual reality
- VR immersion that can engage all human senses
- Custom made software and hardware that can fit demanding clients



efective way of livingfor tenants.

Our company has been operating on the IT market since 2008. We are veryeffective in the application of modern technologies and solutions, designing and

implementing tailor-made IT systems. Our tourism and culture information systems are already operational in numerous cities and museums and our projects are award-winning for the their quality and innovativeness.

EACH OF OUR PROJECTS AND PRO-DUCTS IS DEVELOPED IN COOPERATION WITH OUR CLIENT TO MAKE SURE THAT THE PREPARED SOLUTIONS MEET THE ESTABLISHED GOALS.

We offer comprehensive, A-Z services – starting from fund raising, through design and development, up to implementation, carried out according to the Scrum/Agile methodology. We also offer post-sales services, since we take full responsibility for the end product. We have experience implementing large scale projects for the public administration bodies and for the corporate customers.

WE CAN OFFER COOPERATION ON POLISH AND EUROPEAN MARKET TO DEVELOP AND SELL INTERNATIONAL PRODUCTS AND SERVICES

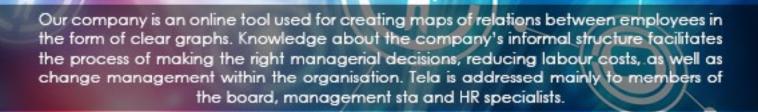
## WE ARE EXPERIENCED WORKING WITH:

- Culture Museums and Teatheres
- Tourism & Regions
- Entertainment and Retail Centers
- Scientific Units
- Business sector

### WE ARE LOOKING FOR:

- International Partner on R&D Projects
- Collaboration with Scientific Units
- Business Partner for International CooperationPartner for resale of our technology and services

OUR CUSTOMERS MEET SOLUTIONS PERFECTLY-TESTED. TELA, KNOWLEDGE AND TALENT MANAGEMENT TOOL, WHICH WE USE OURSELVES, IS A GOOD EXAMPLE. ONLY AFTER IT APPEARS TO BE SMART AND USEFUL TO US, WE DECIDED TO OFFER IT OUR BUSINESS PARTNERS AND CUSTOMERS.



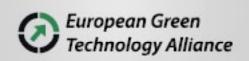
### CASE STUDY

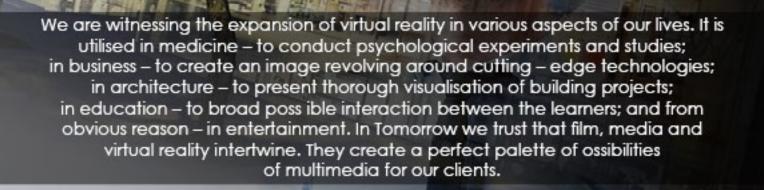
On the basis of research published in:
The Hidden Power of Social Networks: Understanding How Nork Really Gets Doze in Organizations. Andrew Porker, Rob Cross, Harvard Business Press, Buston, 2014.

#### INFORMAL STRUCTURE (how actually it looks) Zieliński FORMAL STRUCTURE (how formally it looks) SESSOR VICE-PRESIDENT Mapping relations presents Sowak informal structure - cooperation between employees. Research Kowalski Lewandowski C RESEARCH PRODUCTION Kowalczyk Kamiński SERIOR VICE-PRESIDENT THE PROCESS RESULTS Kozłowski O Nowak VISUALIZATION OF ACTUAL WORK STRUCTURE. PRODUCTION Wiśniewski Jankowski Kamiriaki Konsalczyk Wojcik Wożniak Szymański

Kamiński is placed in the centre of information network although his formal position is relatively low.

Employee who has low position in formal structure plays a key role in company's communication.





## Virtual Reality

Innovative solution enabling deep immersion into an artificially created reality. Photorealistic images simulate physical presence in virtual environments. Thanks to our realisations on different models of VR goggles our clients can take part in wonderful experiences stimulating many of our senses.



We have experience in creating Virtual Reality environments for various platforms:

- HTC Vive
- Oculus Rift
- Google Cardboard

Check out our novel visual presentation methods, as well as our innovative creative processes.

Experience the solutions based upon augmented and virtual reality.





## Characteristics of the vertical wind turbines

- Operational wind speed ranging from 1.5 m/s to as much as 55 m/s.
- Operation independent of wind direction which allows for maximum efficiency.
- Substantial reduction of noise and vibrations.
- No risk for birds and bats.
- Resistance to strong winds,
- Easy transport of modules and simple mounting system
- Continuity of operation of the turbine thanks to the energy storage system.

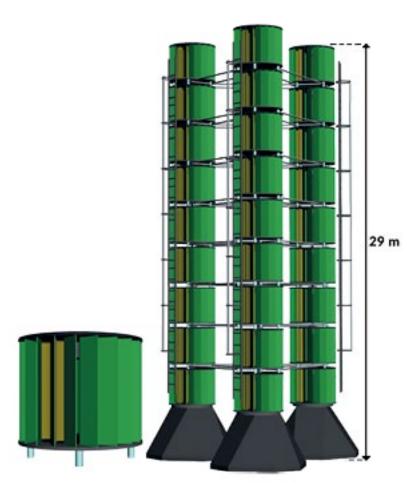
The vertical wind turbines Green Vertical Turbine Sp. z o.o. were designed in several variants.

### Technological variants:

- steel.
- aluminium.

## Design variants:

- land (steel).
- roof (aluminium),
- off-shore (aluminium).
- marine (aluminium).

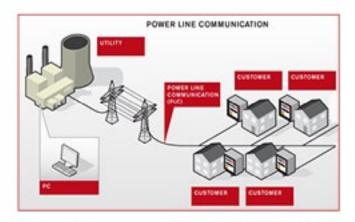




The most important part of the system are two-way mediating communication modules in information exchange between the meter and the center gathering and analyzing data concerning utilities consumption. The system is characterized with following functionalities:

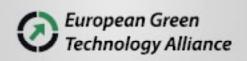
- Communication between a meter and the center via public network in real time.
- Basing on the data from the meter and unit prices, the center calculates the exact cost of consumption of a particular utility.
- Billing information are send to the user via integrated Internet platform.
- Bills may be paid from the platform's level.
- The user has access to the water, gas and energy consumption and to history of payments,
- The meters have the option of switching off and on the energy flow depending on the level of its use and may cooperate with a local domestic network.
- Implementation of intelligent meters allows for achieving a decrease of usage costs of utilities of even 10%.
- Calculation of forecast consumption of water, gas and energy via automated center is more accurate for almost 80%,

 The system is of a nationwide range, easy to implement independently from the size of a territorial unit.



The meters are equipped with Bluetooth, BLE and Wi-Fi communication segments and a radio 433-840 MHz segment. They are set for cooperation with any number of water, electricity, gas or other measurement utilities meters.

GREEN CONTROL



It measures Kwh, Wvarh, KW, Kvar, KVA, PF, Hz, dmd, V, A, etc.
Assembly on a 35 mm DIN bus,
Two-way measurement of IMP and EXP
High-class measurement accuracy >1 in accordance with previous regulations,
B - in accordance with MID,

Att. do.

Green Control 1 - energy meters are used for single-phase measurements, for domestic, utility or industrial use.

## Application:

Green Control 1 energy meters are used for single-phase measurements, for domestic, utility or industrial use. The meter may be equipped with one of three types of communication ensuring the opportunity of remote reading, monitoring and configuration of energy consumption. In addition, two-way measurement of energy causes that this meter may be used in PV links installations – it calculates the produced electricity in the installation and collected from the grid.

### General characteristics:

- Voltage: AC 230V.
- Voltage Range: 176 ~ 276V.
- Base Current (lb): 10A.
- Max. Current (Imax): 80A.
- Min. Current (Imin): 0.5A,
- Starting Current: 0.4% of lb.
- Power consumption: <2W/10VA,</li>
- Frequency: 50/60Hz (±10%),
- Display: LCD screen,
- Max. rate of reading: 99999.99 kWh.

### Accuracy:

- Voltage: ±0.5%,
- Current: ±0.5%.
- Frequency: ±0.2%,
- Power factor: ±1%.
- Active power: ±1%.
- Reactive power: ±1%,
- Apparent power: ±1%.

### Environment:

- Operating temperature: -25°C to +55°C centigrade.
- Storage and transportation temperature: -40°C to +70°C centigrade.
- Reference temperature: 23°C, ±2°C,
- Relative humidity: 0 to 95%, non-condensing,
- Altitude: up to 2500 meters.
- Warm-up time: 10 seconds,
- Mechanical environment: CAT III.
- Electromagnetic environment: E2.
- Degree of pollution: 2.

### Communication type:

- Green Control 1 autonomous meter,
- Green Control 1/A meter equipped with a GSM communication module,
- Green Control 1/B meter with a radio communication module of 430 MHz (150 meters indoor range).



A multi-functional Green Control 3 device is a three-phase DIN energy meter equipped with a multi-tariff function. The results are displayed on an LCD screen. The meter is also equipped with a non-volatile memory which guarantees that the readings will not be deleted or altered upon disconnecting.

Green Control 3 - is a three-phase DIN energy meter equipped with a multi-tariff function.

A So So

## Meter specification:

- Type of meter: Green Control 3 (LCD screen).
- Nominal voltage (Un): 230/400V AC (3~); 110/190V AC (3~),

GREEN CONTROL 3

Operational voltage: 161/279 - 300/520V AC (3-); 77/133 - 143/247V AC.

## Insulation capabilities:

- AC voltage withstand: 4KV per minute,
- Impulse voltage withstand: 6KV 1.2μS (waveform).

## Basic current (lb):

- CT type: 1.5A,
- Direct connection: 100A.

## Maximum rated current (Imax):

- CT type: 6A,
- Direct connection: 100A.

Operational current range: 0.4% lb – Imax Overcurrent withstand: 20Imax per 0.01s Operational frequency range: 50Hz ±10%

Operational frequency range: 50Hz ±10% Internal power consumption: ≤2W / 10VA per phase

## Test output flash rate:

- CT type: 3200 imp/kWh,
- Direct connection: 400 imps/kWh.

## Test output impulse rate:

- CT type: 3200 imp/kWh,
- Direct connection: 400 imp/kWh.

Consumption indicator (PULE & SO LED): flashing at load running.

Communication indicator: Flashing at communication

Protection against penetration of dust and water: IP51 Insulating encased meter of protective class: II

### Performance criteria:

- Operating humidity: ≤ 85%,
- Storage humidity: ≤ 95%,
- Operating temperature: -20°C to +50°C,
- Storage temperature: -30°C to + 70°C,
- International standard: IEC 62053-21 IEC61010.

## Accuracy class:

- Voltage, LN and LN (Phase 1,2,3): ±0.5%,
- Current (Phase 1,2,3): ±0.5%,
- Power factor (Phase 1.2.3): ±0.5%.
- Active power (Phase 1,2,3, Σ): ±0.5%,
- Reactive power (Phase 1,2,3, Σ): ±1%,
- Apparent power (Phase 1,2,3, Σ): ±1%,
- Frequency: ±0.5%,
- Active energy: ±1%,
- Reactive energy: ±1%,

## Tariff specifications:

- Number of tariffs: 4,
- Time segments: 10.
- Clock accuracy: ≤0.5s (every 24 hours).

## Communication type:

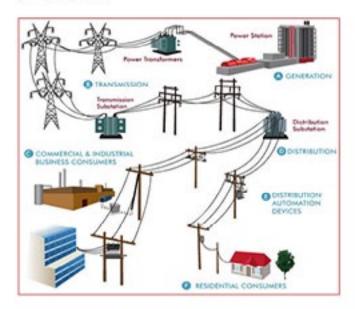
- Green Control 3 autonomous meter.
- Green Control 3/A meter equipped with a GSM communication module,
- Green Control 3/B meter with a radio communication module of 430 MHz (150 meters indoor range).





Waveform output voltage converter connected to NN grid works as a network frequency inverter for renewable sources or a power source for energy storage and reactive power compensation is a unique solution on nationwide scale.

Under this system, cooperation of multiple dispersed power sources in the form of frequency inverters of constant voltage globally managed and creation of a virtual power plant.





"Zero Interference Customer System" – output voltage waveform converter, supplying the final recipient as an additional renewable source compensates the harmonic and reactive power of the recipient which influences the following:

- Decrease of industrial loss and thus increase of the energy grid bandwidth,
- Stabilization of sourcing parameters,
- Decrease of reactive power costs and harmonic for industrial recipients,

Frequency inverters waveform systems may collectively work as an equivalent of pumped storage power plants in cooperation with energy warehouses and electric vehicles' batteries. In addition, in case of lack of power sourcing from the grid, the converter, upon disconnecting, switches to islanding as a source of reserve power sourcing.





Green energy tower system is a universal, energetically autonomous Metamast, dedicated to all wireless electronic communications and observation areas.

The product idea is based on harnessing wind energy obtained from a vertical axis wind turbine, sun energy obtained from a battery of solar cells, and finally, recycling energy obtained from waste polyolefin products. These three combined, render the structure self - sufficient and increase the use of green energy, therefore reducing the emission of harmful substances into our atmosphere.



### **Business Premises:**

- World's first comprehensive independentpower source solution.
- Wide range of use of this innovative mast.
- Diversification of income sources.
- Possibility to have devices working on as well as off the grid.
- Optimization of energy consumption.
- Possibility of applying various business models.
- Favourable investment environment
- (Renewable Energy Sources).
- Possibility to modify the product to specific uses and local conditions.

In traditional network 50% to 70% of cost is electricity.

Our mast installation in areas doesn't need access to the grid. That's why the profit can be higher or prices can be lowered.

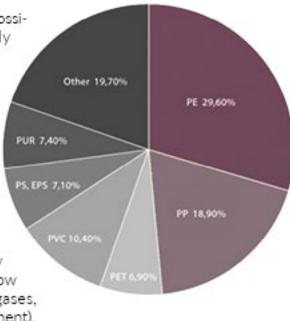


#### The basic features

- little space required for the operation of the device.
- the modular structure possibility to progressively increase plant capacity,
- low power consumption (energy self-sufficiency),
- low costs of operating and maintaining in running order,
- production process monitoring system,
- possibility to monitor the production process,
- low-emission technology (no industrial waste, low emission of dust and gases, efficient waste management).

#### Environmental benefits

- solving the problem of plastic waste and gum management.
- reduction of landfilled waste volume,
- recovery of chemical energy from the substrate,
- reducing oil consumption.
- Waste which are recycled according to Green Power I technology
- Waste which are not recycled according to Green Power I technology





Proper waste management scheme is crucial for development of urban areas. Green Bin system was designed to facilitate and simplify the process of waste collection from the bin to the final site.

There are three essential components that make Green Bin a unique solution:

- Green Bin the main part of the system; it allows the waste management company to easily track the amount and destination of collected waste, as well as create delivery reports;
- Green Cars a tool for tracking vehicles; it allows remote communication with the entire fleet, as well as monitoring the location and status of every vehicle. Among its functionalities is an automated alarm which sends a message to the control centre in case of emergency;
- Green ID a personal account for communication with local authorities and waste management companies. Through Green ID local citizens are able to check the date of a waste disposal, get feedback concerning segregation appropriateness and benefit from additional municipal services through direct communication with waste collection companies.



#### Results:

- improved efficiency of segregation;
- simple implementation of further revisions to waste management laws;
- easy tracking of waste collection units;
- easy access to data on fleet efficiency, potential stoppages and best waste collection routes;
- improved communication between local authorities, waste management companies and citizens.



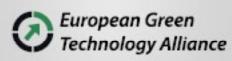
We introduce an idea of innovative bioactive feed additive for use in poultry. It influences microflora of gastrointestinal track of chickens by reducing the amount and activity of potentially pathogenic microflora and enhancing digestibility and accessibility of basic nutrients and amino acids which is provided by limitation of negative influence of certain selected bacterial populations.



# Presented feed additive improve economics of poultry production by:

- Boosting body weight gain (BWG) by 5 %,
- Reduction of feed conversion ratio (FCR)
- Potential reduction in the use of antibiotics, which will improve hygienic and health condition of herd and quality of products of breeding.







**Green Energy** is a company implementing innovative solutions in the renewable energy field in the form of turn-key investments. One of its main objectives is developing and supplying affordable, high quality materials and components for building passive and plus-energy houses.

#### We can supply the following materials and equipment:

- foam glass bricks for thermal insulation and hydroisolation;
- composite rebars without thermal bridges;
- expanded clay concrete slabs for improved insulation:
- recuperators for recapturing heat from ventilation;
- energy-efficient door and window frames;
- small-scale PV systems and wind turbines for energy generation.

Green Energy is also a supplier of ready-touse passive building segments. It is a great alternative for conventional energy-efficient construction processes. Premade segments can be easily transported to a construction site and stacked on top of each other to create an apartment block or an office building. We offer a wide selection of solutions for both business and private entities.



All materials and components, as well as premade segments are produced in accordance with high quality standards for passive and plus-energy buildings. Our solutions are durable, resistant to adverse environmental conditions and safe for people suffering from allergies, asthma and skin diseases.

Green Energy tailors offered solutions to the individual needs of every investment. Our products are versatile and will satisfy the needs of even the most demanding customer.



#### Green Property:

Green Property was founded in response to the needs of the logistics market. Our primary objective is providing innovative solutions for renewable energy market, especially logistics centres. We specialise in design and construction of passive and plus-energy buildings. Our investments are ready to use from the moment of finalising the project.

- We use only the highest quality materials and components compatible with all safety standards for passive buildings.
- We offer full support for our clients during every step of investment realisation, including its financing.

Our main project is building fully furnished, energy efficient, modern logistics centres. Green Property logistics centres are located near highways and expressways. Every investment can be equipped with a small-scale renewable energy installation, such as a vertical wind turbine or a micro PV farm. We cooperate with numerous entities from all around the world.







## Phosphogypsum – innovative construction material

Construction materials made of phosphogypsum have perfect thermal properties and allow for holding temperature indoors. They are environment-friendly, for they allow post-production waste management. Their production is almost 50% cheaper than standard construction materials. Because of lack of organic substances, they are resistant to stretching and pressing and resistant to unfavorable weather factors and microorganisms activity. The phosphogypsum materials are characterized with multiple appliances depending on additions, including: semi-conductors, which allow for changing colors and materials' properties.

#### Smart Home

Smart Home is an application for passive and plus-energy houses management. It is used for remote or local combining with intelligent energy management systems and electronic equipment. Smart Home enables control of household appliances and audio/video devices, alert system, video monitoring, lighting, anti-theft security and other domestic systems.

#### Reinforcing bars

Made of composite materials, reinforcing bars allow for avoidance of so-called cold bridges in the construction's walls. They are made of ununiformed blends of various construction components. Reinforcing bars do not conduct heat, thus not causing thermal loss, which occurs in conventional constructing. Our reinforcing bars are resistant to stretching and corrosion.

#### Foamed glass

Foamed glass is an insulation material of high efficiency. It is an environment-friendly material made from dissolved cullet and frothier and ash additions. As a inorganic substance, foamed glass is resistant to mould. Because of its high waterproof features it may be also used for hydro-insulation of walls and floors.

#### Recuperators

Recuperators are devices responsible for heat recovery from the air flowing out of a building on the basis of counterflows. The heart of the recuperator is the heat exchanger, in which the flown cold air diverges with the warm ventilation air with no risk of mixing. The initially heated air gets into the building. Our recuperators are characterized with a very high efficiency of even 95%.

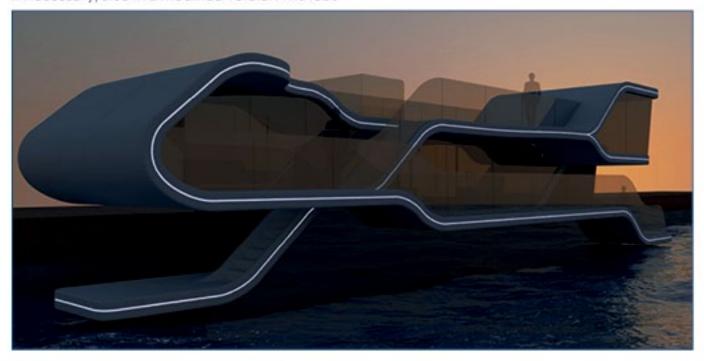
#### RES micro-installations

In case of plus-energy buildings it is necessary to equip them with highly-efficient micro-installations for energy production from renewable sources. We have photovoltaic installations in our offer and unique on worldwide scale modular construction vertical wind turbines. Both PV panels and the turbines may be used as a domestic solution, for they are aesthetic and safe.



Project Float comes out with a fresh view according to changeable trends of spending time at the water. It presents the vision together with its practical realisation. The aim of this offer is to be attractive also for people who have not spent time at the water before. Floatboat will function as a mobile houseboat, and, if necessary, also in a modified version without

motor as an apartment on the water. It shall be used on closed water areas: canals, rivers, lakes in cities and outside. A developed version of Float-boat will be a bigger stacionary object -Float-home. Those objects will be technically innovative in the fields of construction, independence, steering and intelligent systems.





#### Application:



The application of Green Logger is the chance for improving transport quality.

#### Technical parameters:

- Communication: ANT, BLE 4.0, radio, NFC,
- Power supply: lithium battery (lifetime - 1.5 year),
- Memory: 4MB,
- Supply battery voltage measurement,
- Chip antenna, gain +3dBm,
- Digital RSSI (possibility to determine the distance from a given Green ASR logger),
- Environmental sensors.
- Measurements (thickness: 5-7 mm, diagonal 50-80 mm depending on design version).



from -20°C to 70°C



0% to 100%



Og to +/-16g



ision of 1 degree







+/-2g to +/-16g from 50 to 110 kPs distance from the base station and change of output power of the



analysis of light



#### Measuring System consists of:

- System of spatial orientation,
- Navigation system,
- System of measuring g-force,

#### Extension System

Way of communication: OBD2, an alarm, pager, barcode reader, display with the touch panel and a device compatible with Bluetooth 4.0 and ANT/ANT+.

#### Basic functionality

- "Black box"
- Record of detailed driving parameters with 100[Hz] frequency,
- Record of basic driving parameters, asynchronous
- Record of accidents exceeding acceptable g-force - two levels of configuration:
   low g-force threshold - low priority,
   high threshold - high priority;

#### Communication with GreenCloud:

- Transfer of archived, basic driving parameters;
- Transfer of archived accidents with the possibility to download detailed driving parameters covering the time of an accident, e.g. 30 seconds before the accident and 10 second after the accident;
- Configuring the work of "black box" and devices of Extension System;

#### Communication System

Modules such as: GSM, WIFI, USB, radio working at 2.4[GHz]band, radio working at 315[MHz], 433[MHz], 868[MHz], 915[MHz] bands. The systems communicate with Green Cloud – a system of quick informing about road accidents (E-Call).

#### Archiving system

Data carriers such as: NOR Flash, NAND Flash, FRAM and microSD.

#### Extended functionality

- "Black box"
- Archiving measurement and accidents of the extension system

#### Communication with GreenCloud:

Configuring the work of devices from Extension System;

#### Peripheral devices:

- Remote reading of the diagnosis parameters, on board diagnostics level 2 (OBDII);
- Alarm system protecting the cars from being stolen, remotely informs about the occurrence;
- Graphical interface allowing to configure the work of ASR Integration of ASR with IoT devices;



#### Green Convert supports the development of electric vehicles and renewables markets in Poland by undertaking the following actions:

- Conversion of combustion engine vehicles to electric ones,
- Sales of electric vehicles: both converted and new ones,
- Forming a national network of vehicle conversion.
- Development and deployment of new EV technologies.



#### So far, prototypes of the following vehicles have undergone conversion:

- improved efficiency of segregation;
- simple implementation of further revisions to waste management laws;
- easy tracking of waste collection units;
- easy access to data on fleet efficiency, potential stoppages and best waste collection routes;
- improved communication between local authorities, waste management companies and citizens.



Green Convert is looking to expand its offer to further vehicle types.







We offer reliable, innovative components for converting combustion-engine vehicles into electric ones.

#### BLDC motor

Motors based on the BLDC technology are reliable and efficient. At the same time, they are quiet and allow the user to precisely control their operational speed. We offer novelty BLDC motors with the available power equal to 10, 20, 80 and 140 kW respectively. Their operational costs are very low. They are made from high quality components which guarantee their infallibility. The motors are designed to power single-track vehicles, passenger cars, commercial vehicles and buses.

#### Charging terminals

We provide our original, innovative system of charging terminals. It includes both stationary and mobile solutions. As a complete solution it is further equipped with a charging point monitoring system and an integrated client-oriented app designed to simplify the booking of charging sockets.

#### Inverter

Our offer includes a smart inverter for managing power output of the subsystems in the vehicle. This device operates on both single- and three-phase power supply. The inverter facilitates using two modes of charging – express (full charging takes around 20 minutes) and standard (full charging within an hour).

#### On-board computer

We offer an on-board diagnostic computer for electric vehicles. Its main communication interface is a colour LCD screen which displays the status of the vehicle, including battery charge level and engine status. The on-board computer is fully integrated with other components in our offer, as well as with diagnostic modules of vehicles with combustion engines. Data display is customisable and can be easily modified to suit the needs of an individual user.

#### Battery Management System (BMS)

The BMS is a car battery management system. It enables user to monitor the battery use and optimise its use. BMS collects data on the state of battery system and acts as an alarm system if the safety threshold for any value was exceeded. We offer a 3rd generation BMS – a device which is characterised by its high efficiency and precision.





Electric transport is the most efficient way for improving the air quality in cities. There many solutions for modern, efficient city transport in our offer. As the creators of this technology, we have authorial technologies of conversion and construction of bikes, cars, vans and buses equipped with electric drive.

#### Electric vehicle prototype:

We are the inventors of an ELV001 electric car project and the creators of its prototype unit. ELV001 are cars equipped with the possibility of remote diagnostics via public network (GPRS/Internet). The main advantage of ELV001 is the automated system of battery charging ensuring the charge of a battery to 100% in less than one hour. The car received the 1st prize in the "Innovative Project 2010" competition organized by the Polish Agency for Enterprise Development.

#### Electric bus prototype:

We are the authors of a prototype electric bus model. The vehicle is equipped with electric drive of a total power capacity of 140 kWh and a battery capable of travelling a minimum distance of 150 kilometers. Low exploitation costs allow for setting a cost-attractive travel tariff. The bus meets all the city communication requirements and may be adapted for intercity and international transport purposes.

#### 2.5 tons prototype van

We possess a van prototype with an electric drive of 80 kW and a battery capable of travelling a distance of 120 kilometers. The vehicle may be equipped with additional batteries, which additionally increases its range. The electric vehicle's exploitation is cheaper for about 75% than in case of a similar size combustion-engine van, which allows for lowering the travel costs and acquiring new customers.

#### Car conversion:

We also deal with combustion-engine cars conversion in our offer. It was used by such companies as f. in. Grupa ENERGA S.A., which ordered conversion of their nine of Fiat Panda cars. Those cars can be easily charged via ordinary electric socket (230V, 16 A). The car needs 6 hours for full "tanking", which is enough to travel a distance of even 200 kilometers. The full charging of the car requires approx. 25 kWh, which is calculated into the cost of "full tanking" for about EURO 1.

#### Solutions for taxis:

- We offer full electric solutions for taxi stocks. We are a producer of cars and minibuses with electric or hybrid drives.
- Costs of transportation using electric drives may be even up to nine times lower comparing to combustion-engine transport.
- Electric drives remain fully functional even up to 12 years of intensive exploitation.
- We also deliver charging infrastructure, monitoring system and fleet management and service support for electric cars.



# We believe good design is a key feature in a product's life.

Our company originated in Turin, the design capital of Italy. We have expanded worldwide with the main headquarters based in the center of Europe, Poland.

Blending and linking designers around the world (Poland, Italy, Russia, Mexico, Iran, India, China, Taiwan, Israel, Colombia, UK, etc...) Designers with different areas of expertise and different cultural backgrounds, combining skills and talents for a better understanding and creation of design solutions for local and global markets.

Our strength comes from our diversity, cultural differences, unity and experienced gained in places such as (Pininfarina, Suzuki, Daihatsu/Toyota, FF Design, Xin Da Yang (Geely Motors). It is our passion to look for innovative, user friendly and beautiful design solutions in the fields of: Transportation and Product design, where we can realize the complete design process or just particular stages of the process required.

#### Transportation and Product Design:

I CARS I BUSES I TRAINS I MOTORCYCLES I BICYCLES I I YACHTS I DRONES I OTHER VEHICLES & PRODUCTS I

As human beings our first reaction to the things we interact with is an emotional reaction, and then we rationalize the experience. Design must fulfill and intertwine the emotional and rational needs of people, in a perfect symbiosis between form and function. Design not only enhances the experience of the users but also their surroundings.

#### Serwices:

Sketches & Renderings, Showcars and Prototypes, Style research, Storyboard definition, Virtual modeling, Color & Trim, Scale Models, Clay modeling, etc.





from telemedical sensors.

GreenMed application is based on the authorial cloud system called GreenCloud and allows for gathering, storing and sending data on patient's state of health. Medical data are sent to a server in specified time intervals, thanks to which a patient's doctor or family may have access to it.





Temperature



Weight















Sleep monitor





**Fertility** Vitamin D Cold

#### Four main areas of GreenMed are:

- Medical Monitoring modern diagnostics in a real time.
- Help Search interactive map with the nearest hospitals, medical centres and pharmacies.
- Patient's Card a view on general and specialised examination results, referrals and prescriptions, No risk for birds and bats,
- On-line Diagnostics medical consultation with a chosen specialist.





Innovative medical technologies consist of a variety of solutions, starting with connections between measurement devices, data-keeping servers and applications for the user, to tele-consultancy and remote care conferences. It is especially important in the case of diagnosing and treating affluence diseases which become more and more prevalent. The International Medical Diagnostics Centre is a project aimed at delivering the most accurate and rapid diagnostics for patients suffering from affluence diseases.

The very foundation of the International Medical Diagnostics Centre action is an automated system of gathering data and diagnostics. This tool allows easy collecting, cataloguing and information analysing concerning any patient. One of the essential components of the Centre is an internet platform which facilitates data transfer between medical specialists and research facilities. The platform can be accessed remotely from every device. It is compliant with security standards and protects data from being viewed by a third party.

The Centre will facilitate communication between specialists in a form of consultancy, remote case conferences, or secure and fast data transfer of the patient, which accelerates the process of diagnosing and undertaking the decision on treatment means. It will also contain an education database containing information on the prevention of affluent diseases.



One of the main projects realised along the International Medical Diagnostics Centre is the International Centre for Prevention and Treatment of Neoplastic Diseases. Its main purpose is to accelerate the process of oncological diagnostics and to build the social awareness in terms of cancer prevention.



Dr.Barbara is a medical APP that cares for health & proper nutrition of its user via website, smartphones & tablets.

Application controls user's health by examining current medical tests in order to set up a diet plan and prevent diseases.

The application uses the subscription system that enables its users to choose between 3, 6, 12, 24, and 36 months period.



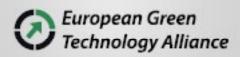


#### Main finctionalities:

- Proving a nutriton plan based on the result of medicaL examination and user's taste perferences.
- Uder is taken care of by a team of professional doctors who whatch over his diet plan.
- APP prompts user about the comming meals, produces shopping lists and shows weight loss changes.

#### Business model structure:











#### Green Art - bringing art galleries to all available spaces

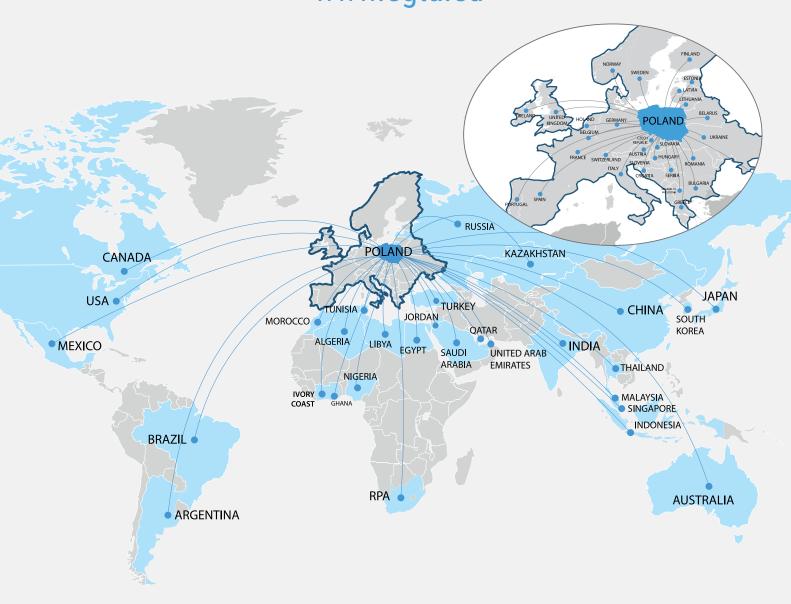
- Green Art is a unique project which aims at showcasing works of promising Polish and global artists to the greatest number of recipients;
- Any user can visit a digital version of a selected museum or an art gallery through the Green Art internet portal;
- The portal contains pictures, photographies and other forms of art freely available for any interested entity:
- The tridimentional visualizations and the opportunity of seeing the works in augmented reality empower aesthetic sensations and zest the reception of the pieces of art;





- A virtual museum can be a valuable educational aid and can be beneficial for disabled people who cannot leave their houses;
- Green Art project also cooperates with art galleries and individual recipients in terms of designing and establishing augmented reality exhibitions and openings in all kinds of facilities:
- Any indoor space can be mapped and transformed into a private art gallery through the use of virtual reality headsets.

# European Green Technology Alliance www.egta.eu



European Countries : 18 | European Clusters : 21 | European Companies : 325 | World Cooperation : 58

EGTA is an international platform for cooperation among European clusters in order to set up the technology transfer between entities, oriented to the needs of a modern, sustainable and intelligent economy.

The members of European Green Technology Alliance are European technology clusters, whose aim is to support further development of technological solutions and their global commercialisation.

We kindly invite you to cooperate with us.

www.egta.eu

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# CONTINUOUS INFRASTRUCTURE DEVELOPMENT

- Convenient & strategic location eastern border of the EU (gateway to Eastern Europe and Asia),
- National road S-17 (Warsaw Hrebenne Lviv), S-12 (Warsaw-Lublin-Chełm-Dorohusk-Kiev), S-19 (Białystok-Rzeszów) access to border crossing with Belarus,
- Well-developed border crossing infrastructure with Ukraine and Belarus (7 crossing points),
- Małaszewicze free customs zone.

# INVESTMENT SITES LUBELSKIE – WHERE SCIENCE UNDERSTANDS BUSINESS

- Lublin is the largest academic centre of Eastern Poland,
- 5 universities located in Lublin and 18 higher educational institutions in the region. The institutions of higher education teach over 77,000 students each year,
- Science and Technology Parks, as well as specialised research institutions.

#### **LUBELSKIE - A PERFECT PLACE TO LIVE**

In Lubelskie Voivodeship you may not only develop your business, but also relax in the unique natural environment and take advantage of a wide range of cultural events.

#### **BUSINESS LUBELSKIE - OUR SUPPORT**

Marshall's Office of Lubelskie Voivodeship in Lublin supports the development of the region by participating actively in the creation of an investment-friendly atmosphere.

#### Information on:

- investment areas.
- exemptions,
- incentives,
- EU funds,
- human resources,
- salaries,
- organizing trade missions and study visits.

#### Marshall's Office of Lubelskie Voivodeship

Department of Economy and International Cooperation Trade and Investment Promotion Section

Grottgera 4; 20-029 Lublin



**Contact details** 



### We are the first certified technology park in Eastern Poland

The certificate awarded by the Polish Business and Innovation Centers Association (PBICA) confirms the park's compliance with the environmental quality standards of operations set for innovation centres in the phase of development.

We support development of innovative enterprises, we help to find investors, we shape entrepreneurial attitudes among students, graduates, researchers, and above all else, among the citizens of the city and the region. Through access to knowledge, global networking and modern infrastructure we are continually striving to perfect our offer. We connect the entrepreneurs with academic society. Our infrastructure comprises the buildings of Technology Incubator and the Technology Centre.

#### Our laboratories:

- Molecular Imaging Laboratory
- Laboratory of Electromagnetic Compatibility Research
- Biomedical Laboratory
- Innovative Metallurgical Laboratory
- 3D Prototyping Space
- Computer Graphics And Interactive Art Laboratory
- Physicochemical Laboratory





The National Centre for Research and Development (NCRD) is the implementing agency of the Minister of Science and Higher Education. It was established to carry out tasks within the state policies on science, innovation as well as science and technology. The chief aim of the NCRD is to support the creation of innovative solutions and technologies that increase the competitiveness and innovation of the Polish economy. The NCRD is to strengthen the collaboration between business and academia, leading both to a greater engagement of entrepreneurs in research funding, as well as to a more effective commercialisation of this research. While carrying out those tasks, the NCRD ensures that public money spent on R&D activities delivers best possible benefits to the Polish economy.

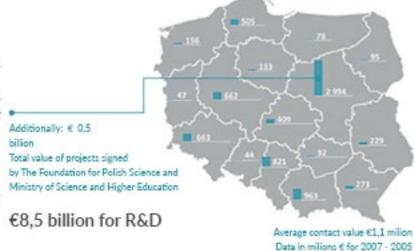
Thanks to its extensive programme offer, the NCRD is able to provide financial support for a project on every level of technological readiness. The aim of the programmes carried out is not only to increase the potential of Polish scientific and industrial entities, but also to strive for technological independence through the creation of Polish know-how in terms of defence, security and technology. The budget devoted to R&D has systematically been on the rise and in 2016 amounts to PLN 4.3 bn.

#### NCRD - a modern institution

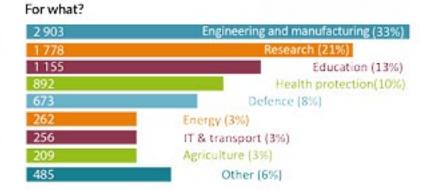
- Encourages industry to commercialise research by co-funding R&D projects
- Effectively supports building a lasting technological advantage of the Polish economy

#### How do we act?

- Connecting science with business
- Providing entrepreneurs with "risk insurance policy"
- From idea to industry



# For whom? 42 % Consortia 26 % Enterprises 20 % Universities 8 % Research institutes 3 % Polish Academy of Sciences





#### **Emirates & Europe Business Development Cluster**



In recent years, the United Arab Emirates have been showing growing interest in European market mostly because of superior quality products and services and highly developed innovative technologies. In turn, European entrepreneurs are willing to broaden their markets.

#### **Emirates & Europe Business Development Cluster**

was formed in response to the expectations on both sides, in order to integrate the Emirati and European business environment and to provide enhanced methods of communication.

**EEBD.eu** is an international cooperation organisation for European and Emirati environments. Its activity is based on associating and supporting member institutions: enterprises, governmental units, researchers and

scientists interested in investment cooperation in the following fields:

- Financial products and services
- Innovative technologies
- IT market
- Energy
- Waste management
- Agricultural and food industry
- Real estate industry
- Transport
- Tourism
- Military technologies
- Medicine
- Culture and art



TECHNOLOGY TRANSFER



INVESTMENT PROJECTS



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