

GUIDELINES FOR CREATING AND
MANAGING THE RES SCIENTIFIC,
TECHNOLOGICAL AND BUSINESS
PARKS: OVERCOMING BARRIERS.

OVERCOMING BARRIERS IN SETTING UP STBP

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1. INTRODUCTION

The establishment of a Business Park or a Science and Technology Parks is considered as a powerful instrument to strengthen regional development in a territory. Renewable Energy Source (RES) potential in a deprived region may act as a starting point to develop green growth based on emerging technologies and developing innovation ecosystems becoming service providers in the global market.

Innovation and Technology transfer is needed in the region to be developed in the new global market: There is little doubt that Science and Technology Parks (STP) have been a highly innovative tool in regional development policies. However it is a goal difficult to achieve in these regions, as they lack technology based infrastructure, but at the same time, it seems to make regional development easier. In fact STBP have been proved all over the world, to be one of the most successful tools to foster the regional innovation and development. Thus, this will be the model we will study in this report.

Science and Technology Business Parks are models of regional development towards innovation fully recognized and enhanced all over Europe. They strengthen the role of regions as engines in innovation eco-systems (both regional and global) and also strengthen their strategic competences for excellence, as they have become service providers in the global market. They are complex ecosystems that will be analysed as major goals, in between there are Business Parks, company incubators, innovation centres, technology parks and research parks depending on the degree of innovation development or local /regional conditions. The major goal and how to overcome the barriers in setting up science & technology parks will be the object of this work that may apply to other models as well.

From the participating partners, the Spanish and Italian Partners are models of successful STBP, whereas partners from Bulgaria, Portugal and Czech Republic (Kilkis, from Greece left the project at the early stages and is no longer a partner in the project) aim to learn from the procedure that this partners have followed to successfully develop their own Business Park or Science and Technology Park. The potential of these regions is the presence of RES and any kind of business development based on green technology could also be considered. That is the reason why Business Parks will also be included in this document.

This Guide aims to provide information about how to overcome the barriers when it comes to creating a new Science and Technology Park in regions with a high potential in Renewable Energies but not enough business development.

Saying that, the guidelines presented in this document are mainly based on the analysis about how regions with high potential in RES can make the most to overcome the barriers detected and analysed to foster a regional development through the creation of new companies based on RES exploitation in its value chain around Business Parks or even Science and Technology Parks with public-private partnership.

2. BUSINESS, SCIENCE AND TECHNOLOGY PARKS as Models of Regional development

2.1. Innovation and Technology transfer

Policies of support for technology transfer and innovation have evolved in parallel with the evolution of the economic/technological framework and the conception of the process of innovation. The first finding is the greater degree of regionalisation of policies. This is closely related to the need for policies that take into account the views of SMEs and pay maximum attention to the needs of the regional and/or local industrial fabric. A second aspect related to the first involves increasing efforts to support small and medium-size enterprises so that they can incorporate new technologies and be competitive.

Based on a set of institutions and organisations within the national innovation system, a technology transfer system should, in our view, act on three levels in the framework of a regional policy.

The first level includes actions intended to coordinate the technological network and to reinforce the image of the region. There must be coordination and coherence between the organisations involved and the actions initiated. A demonstration centre, for example, cannot be installed without developing the necessary complementary activities such as technical assistance, training and finance. The second level includes the specific instruments of support for technology transfer: creation and improvement of the service infrastructure (for information, technical support, partner searches, finance etc.); specific mechanisms and actions (co-operation between universities and project evaluation and selection companies; promotion etc.). Finally, the third level includes very specific actions of support aimed at industrial clusters and specific sectors.

Level 1: To coordinate the technological network and to reinforce the image of the REGION

Level 2: Supporting technology transfer at the FIRM level

Level 3: Improving technology transfer in specific CLUSTERS/ sectors

This context occurs in “parks” of different types. Initial consideration of the term reveals the great number of cases that it covers. For example, companies can belong to sectors that produce or use new technologies; universities and research centres can be located on the site of the park itself or in adjoining zones; companies can be large or small; the park may or may not have a company incubator, etc.

For some regions parks are simply real estate operations. For others they are the result of actions by public and private actors with a vision of the future. These actions are aimed at controlling and guiding a series of fundamental transformations affecting society and the economy. Already they are beginning to redefine the conditions and processes of local and regional development. The problems of borders and demarcations also affect the objectives of parks. Objectives can be classified in very different ways, e.g. according to:

- The region in which the park is located (to promote economic development, to consolidate or diversify sectors...)
- The relationships the park sets out to maintain or change (to transform the inter-industrial relationships of the zone...)
- Attitudes (to promote the innovative spirit of entrepreneurs; to help modify attitudes concerning the downstream impact of R&D...)
- Work and employment (to contribute to reducing local unemployment; to create conditions for the improvement of productivity and the working environment...)

The classification of parks according to the SPRINT programme of the European Union gives the following six categories:

Business Parks, provide a high-quality environment suitable for a wide range of entrepreneurial activities: production; assembly; sales etc. They do not require the proximity of academic institutions. Some parks that have failed in their attempts to attract clients specialising in new technologies have converted to this category.

Company Incubators are sites in which recently created companies are concentrated in a limited space. The objective is to improve the probability of survival. The companies are located in modular buildings with common services (telefax, computer services...) and support in management. Emphasis is placed on local development and job creation. The 'technological' side is sometimes collateral.

Innovation Centres (Business Innovation Centres - BICs). An innovation centre provides services and support to new companies that develop (or wish to develop) and sell new products or technological processes whose markets involve a high degree of risk. The objective of the centre is the creation and development of businesses in high technology sectors. The centre can provide services and support in a wide variety of areas: finance; marketing; technology; administration. Sometimes the innovation centres form an integral part of a larger project of the science park type.

Technology Parks: These are initiatives that include companies devoted to commercial applications of high technology. Their activities can include R&D, production, sales and services. What distinguishes them from science parks is the emphasis on production. The presence of academic institutions is not essential. Emphasis is placed on the proximity of high technology companies working in similar or complementary areas. There may be conditions for admission of companies (type of R&D or type of products and so on...).

Research Parks: A research park is normally located very near to one or more universities or similar academic, and research institutions. The emphasis is placed on research rather than development, and the key is the link between academic and applied research.

Science Park : A Science Park is a real estate initiative in one or more sites that is geographically near to one or more institutions of higher education or advanced R&D centres and maintains operative links with these institutions; Is designed to promote and encourage the setting up and growth of 'knowledge based' companies and facilitates, through active intervention, exploitation of research carried out in the area and technology transfer from academic institutions to companies and organisations installed in the park (or the surrounding area). The main objectives of science parks are research, development and design, conceiving new products and developing them to the marketing stage. The activities conducted by the companies in the science parks often end at the stage of prototype design, while production is located elsewhere.

In any case, it has to be considered that a STP development is a mid to long term action, a well-developed business area could turn into a Science and Technology Park. This evolution includes a fundamental transformation of the region, which will affect both society and economy. That is the reason why it is of paramount importance to define the model of STBP to create before starting the process.

2.2. Science & Technology Park's models

Science and Technology Parks' (STP) models are as diverse as individual initiatives carried out. The success of this concept accounts for the ever increasing number of STPs all over the world.

Science parks are an evolution of industrial concentrations started in Britain in the wake of industrial revolution. An example of such concentrations is Trafford Park Industrial Estate in Manchester, connected with the sea through a canal during years. This area was the largest industrial area of the world in the early 20th century and its activity reached its peak during World War II. Its relevance only declined during the industrial crisis of the 1970s, although it seems to come to new life now.

On the other side of the Atlantic, the concept of industrial concentration was quickly taken over. The first industrial park or district in the United States was the Central Manufacturing District in Chicago, created in 1905. The idea of concentrating companies in one single area became increasingly important there in the mid-20th century, during World War II. Shortly after, American companies, aware that science had made a vital contribution to victory (atomic energy, radar, aeronautical developments etc.), approached universities. This is how the first science parks came about around Stanford University in California – Menlo Park and Stanford Science Park, both created towards 1950. New proposals soon came up all over the United States.

In Europe this phenomenon took long to grip –to be precise, almost twenty years. In the late 1960s, some universities in the United Kingdom, such as Cranfield and Cambridge, took action along these lines. In the first years, the growth and impact of parks was weak.

Since the late 1980s Science and Technology Parks have spread over Europe and been consolidated as a relevant instrument of regional development policy. The International Association of Science Parks (IASP) is active since 1984 and it holds 370 members in 66 countries with more than 125,000 companies, and the growth in the last decade has been really noticeable.

A Science Park (according to the IASP- International Association of Science and Technology Parks- official definition) can be defined as an *“organisation managed by specialised professionals, whose main aim is to increase the wealth of its community by promoting the culture of innovation and the competitiveness of its associated businesses and knowledge-based institutions.”*

To enable these goals to be met, a Science Park stimulates and manages the flow of knowledge and technology amongst universities, R&D institutions, companies and markets; it facilitates the creation and growth of innovation-based companies through incubation and spin-off processes; and provides other value-added services together with high quality space and facilities.

It is clear, that during the approximately four decades since they have been in existence, **Science Parks have had to adapt to the various different levels of economic development** in different regions and cities, as well as to very different cultures, social and political institutions, and wealth in terms of social capital.

This variety of contexts and milieus has inevitably produced different Science Park models, and none of them can really claim to be more successful than the other, since successes and failures can be found within them all. **There is not a unique pattern for the development of a STBP;** but it is necessary to develop each stage to reach the target successfully. In fact, it could be stated that each STP has followed a different pattern for its development.

The Silicon Valley experience, located in a thriving high-tech region in the southern San Francisco Bay Area, is considered as the first Science and Technology Park of the world. But as it has been said, there is no clue for developing a successful STP. So the key is to understand what has made the Silicon Valley so successful and what factors have contributed to its long term-sustainability as a world-class high-tech economy.

2.3. Main common facts & results in the development of the STBP

Although it has been stated that there is not a unique pattern for the development of a Business Park or a Science and Technology Park, according to a study developed by the IASP, there are some common factors in the development of a Park, which can be summarized as follows: in most cases, this is a urban phenomenon (66% within a city and 27% close to one); and located outside University Campuses.

According to the size and partnership, the 40% has less than 200.000m²; whereas the 29% has more than 600.000m². About the number of tenants, figures also diverge, varying from the 50% of the STBP, which has less than 100 tenants; to the 20% that has more than 200 tenants.

Regarding to the Partnership of the already existing Parks, it has to be mentioned that the 40% of STBP's stakeholders are public bodies; the 22% mixed; and 12% private bodies. So there is a tendency for the STP to be public bodies.

In connection to the incubation activities, it is noticeable that the majority of the Business and Science and Technology Parks is located near business clusters, that and business incubation is one of its main activities. Besides, the 78% has incubation facilities.

The creation and development of a Science and Technology Park, or a Business Park, should lead to a regional development. In fact, it can be said that a STBP has two main objectives. The first one is to act as a catalyst for regional development, while the second one relates to facilitating the creation and development of new technology based companies and knowledge transfer from universities or similar actors to companies.

There is growing awareness in Europe (DG Enterprise and Industry, Industrial Innovation Support Unit) on the weight of services in GDP, especially the so-called KIS- (Knowledge Intensive Services) and an industrial innovation market demand: emerging industries (pervasive software, biogenetics, renewable energy technology, nano-materials, alongside with KIS) and the so-called smart growth, green growth .

Those seem to be a great opportunity for the municipalities represented in the project (Sliven, Healthy cities of the Czech Republic and Moura in Portugal) to develop a Business or a Science Park.

Today we are witnessing an amazing acceleration of historical processes and of social and cultural changes, very much based on the breath-taking Information Technologies revolution, and therefore, it is pertinent to ask ourselves about the new scenario, which,

- is global and crowded with anti-globalisation movements
- raises doubts and questions about the role and legitimacy of states and governments,
- is increasingly dependent on science and technology, and consequently on knowledge,
- demands, more than ever before, a very high level of training and education, and very solid skills from the individuals so that they are able to perform efficiently,
- is dramatically changing the type of work, and worker and company profiles,
- has promoted networks and networkers to a pivotal position,
- has given birth to a new species “the globapolitans”, who are like modern centaurs, half physical, half virtual, speaking languages and living in airports and in websites, inhabitants of the “space and flows” (Castells, 1998).

In other words, a whole new set of rules and situations is resulting in an interwoven world and society of astonishing contrasts, which should be taken into account if a new region wants to develop a STBP, as it may find this development threatening and risky but at the same time, could be really helpful for the regional development.

If the STBP is finally created, and once these objectives and scopes are achieved, in the medium-long term, the creation and development of the STBP should foster in this regions:

- Generation of new companies, and research centres
- Networking between agents of the Science and Technology Company system.
- Diversification of the industrial fabric
- Development of infrastructure generating added value for the region.
- Collaboration with University
- Promotion abroad and in organisations located out of the Park.

- Collaborations with other Technology parks, at national and international level.
- Completion of R+D projects
- Dissemination of Technology and Knowledge
- Bring new technologies closer to society. Encouragement of a culture of quality and technological innovation.
- Magnet effect generation on scientific and technical vocations in the place they are located. Increase availability of ideas and trained staff, originated in universities or established companies.
- Examples of good practice
- Leadership from leading scientists and from already successful entrepreneurs.
- Quality of life, attracting new workers, and keeping old ones.

Besides, when the Science and Technology Park is dedicated specifically to the environment, or the renewable energies, the Park itself has an added value derived from the use of renewable energy, which is:

- Transversal: involves different industrial sectors
- Clean: reduces the transport and pollution costs of traditional fossil fuels.
- Holistic: benefits from local economy with added value for the region.

3. Main conclusions of the case studies & Main common barriers to overcome: The case of Partners located in Portugal, Bulgaria, and Czech Republic

To provide some clues to the main barriers to overcome during the creation of a STBP, it has been developed an analysis of the barriers encountered in some deprived european regions, considering among others, their intention to create a STBP and the characteristics of the territory in which they are located.

All in all, and as it has been stated before, there is no pattern in the creation and development of a STBP but there are some common barriers detected which need to be overcome; that is why the information given in the template has gone through a transversal process during the development of the Project from the Study Tours (WP2) to the Stakeholders meetings and Executive meetings (WP3).

In the course of this process, the stakeholders and policy makers of several regions have had the chance to deepen and learn about the processes carried out by other partners, which could be helpful in the process of developing area dedicated to business and new technologies, leading to a STBP area.

The information compiled during the creation and development of this Business Area in the depressed regions analysed, the following ones can be considered as the most important ones and also the ones that seems to replicate in every new region willing to develop a STBP:

- *Financial barriers*
 - Lack of Capital (or access to investors)
 - Lack of Public financial incentives.
 - Lack of analysis of the possibilities for RES application.

- *Political Barriers*
 - Lack of interest in STBP development of politicians, decision makers, and local national partners.
 - Inexperience of political decision makers
 - Weak legislation or weak planning instruments (regional/local level).

- Structural barriers
 - Lack of critical size of domestic markets.
 - Low investment in R+D
 - Lack of industrial or RES facilities in the area
 - Tertiary and added value services underdeveloped.
 - Lack of communication infrastructures or if available, far from the main city.
 - Lack of skilled human resources
 - Lack of enterprising culture.

In most cases, the spur to the development of a Business Area is considered thanks to a large infrastructure available, and a high potential in renewable energies in the area. However, the common problem seems to be the lack of funding to develop such a big project, and the insufficient infrastructure supporting this development. Besides, and in most cases, the lack of “tradition” in the development of these projects, seem to be another key factor to overcome.

From now on, this document will focus on some recommendations to overcome the barriers detected, to help the actors involved in the creation and development of a STBP to improve the results of this process.

4. How to overcome the barriers to create a STBP

In the previous sections, it has been explained how regions with high potential have detected a series of barriers, that common or not, if they are shown, every developing region has to overcome.

In any case, it has to be considered that the creation of a Business or Science and Technology Park is a long term project, so, the development of the region that it may include, has to be considered from a medium to a long term, during which, some of these barriers could be overcome to reach the target.

This developing process should help to set off the Business park development plan, funding, fostering both actual entrepreneurship and also assuring future skills of the human resources by training them at schools, and bet on this skilled people to deal with a new Business or Science and Technology Park. This process should also include finding of stakeholders or investors, which could be either private or public. Apart from that, when defining the kind of STBP to created, it should also be taken into account, the differences between the types of Science Parks already explained.

Given that a Science a Technology Park, is a medium long term achievement, one possibility that could be considered, is the creation of a real Business area first, which in the medium term could turn into a Science and Technology Park, once the business area has been consolidated, and the initial objectives have changed.

According to what we have seen before, and the analysis of the deprived regions, we could suggest the following ones, as possible contributions to foster the development of the region:

<u>Predictable and Unpredictable Barriers detected</u>	<u>Solutions suggested to overcome barriers</u>
<ul style="list-style-type: none"> • Lack of developing Plans • No context and tradition to create a STP 	<ul style="list-style-type: none"> • Creation of context • Regional developing plan
<ul style="list-style-type: none"> • Lack of critical size of the market 	<ul style="list-style-type: none"> • Foster clusterization to overcome critical size of the market
<ul style="list-style-type: none"> • Lack of skilled human resources & enterprising culture 	<ul style="list-style-type: none"> • Foster entrepreneurial education & skilled human resources
<ul style="list-style-type: none"> • Lack of industrial/RES facilities in the area 	<ul style="list-style-type: none"> • Create an entrepreneurial/Business friendly environment , socially responsible • Foster clean & safe growth for the region
<ul style="list-style-type: none"> • Lack of financial support 	<ul style="list-style-type: none"> • attract investors/financial support • Create a management society

A. Define the context and a Developing Plan for the STBP

As it has been analysed above, there is no rule for developing a new STBP, as in fact, is the context of the region which determines each model. Thus, it is important to define the context in which the future STBP will be created.

According to this, the first steps in the creation of a STBP should be directed to organize the strategic formulation of the project, which should include representatives from regional or national authorities, Commission officials, representatives from local universities and research institutes, local industry representatives, and obviously, the main proponents and promoters of the park, including the potential STBP management team.

It is very important to point out the relevance of a management team, as this could be a key factor for a successful future development of a Park. In fact, all the STBP, have considered the creation of a managing society, which acts as a facilitator of the businesses and enterprises located in them, letting the information and communication flow more easily between the agents.

So once all the actors involved in the creation and the development of a business area have been determined, the management team of the project should provide them relevant information about:

- The analysis of the economic and geographical contexts of the future park
- The social problems detected in the region
- The main characteristics of the economic structure of the region likely to determine the success of the park (e.g. skill base, extent of existing innovation networks...)
- The expectations of how a Park might address these problems
- Discussion of whether a park is the most appropriate mechanism
- A clear understanding of all the practical problems involved with the establishing a park
- An appreciation and proposal of the mix of firms which could best fulfil the aims of the park.

This is not an easy job, but in fact it is very important to consider every previous steps, and include all the actors that could be involved in the development of a business area in a near future before starting the project, (aims and expectations of the firms, universities, research institutes or other bodies actually planning to become involved in the park) just to avoid taking unnecessary risk or unsuccessful projects. In fact, this decision should lead to a differentiation of the STBP, determining its personality and strategy.

If this evaluation of this Developing plan is successful, then we could move on to the next steps.

B. Create a “management” team or society for the STBP

We have seen the importance that a management team could have in the development of the area. But also, when the creation of a STBP is being detailed, there must be a managing society which could deal with all the requirements that a STBP may have during this process.

So, in a way, the management team should foster the organization of the STBP during the first steps or the project. Later, this management team should lead into a management society or headquarters of the STBP, which should administer the economy of the future STBP and also include future business support, services both originating in a public policy initiative.

In a future, and once the STBP is running, it will also aim to assist enterprises or entrepreneurs to develop their business activity successfully and to respond effectively to the challenges of their business, social and physical environment.

The importance of this managing society is which, that there is no STBP which does not have one, and without it, it will be very difficult to administer the finances of the future STBP. It can be public or private, but should assure the smooth running of the STB.

C. Overcome the critical size of the market. Think and act global.-

The main common problem of the developing regions is that every step taken comes up against the development of a real business area because of the critical size of the internal market.

It is important to remember that a STBP should stimulate the flow of knowledge and technology amongst universities, R&D institutions, companies and markets, facilitating the creation and growth of new businesses. Saying that, the success of an initiative of this kind would be hardly applicable if the economic structure of the region, the internal future organisation of the park and future relations with local organisations, including local, regional and national government, universities, and other institutions are not taken into consideration.

To overcome this barrier it is essential to find the key to competitiveness, and the way could be just considering all the actors involved not only in the development of the STBP, but also, considering the rest of the actors that in a future will be included.

Besides, it has to be considered that a new STBP should boost their brand to position it adequately on the market, and make all the potential users or clients become aware of the opportunities parks offer for their business. This brand would refer not only to the STBP but also to the enterprises located in the parks.

Apart from that, STBP should take into account thinking and acting across borders, as well as considering other similar experiences that have been successful. This proposal has been supported by the latest European Competitiveness Report, which examines the factors that help or hinder firm's economic growth.

The development of a STBP should be considered in a future, a way to foster internationalisation of the Park, taking advantages of the synergies created between the actors located in the Park, or in other areas nearby.

Amongst the key messages of this report is that companies which trade across borders are more productive than those which do all their business in their home country. So, to foster the development of business, efforts should be focused to improve the overall competitiveness of European firms.

Saying that, it is important to mention, that SME are the primary creator of jobs in industry, and fast-growing SMEs are recognised as making a major contribution to improving European competitiveness. Besides, it is stated that such high-growth firms are found in every member state and in all sectors of the economy.

The common factor is the entrepreneurial eye to spot and take on opportunities in the marketplace. In any case, it has been stated that both the creation of new firms and the closure of inefficient ones increase productivity, considering their location in a STBP as Positive, as a STBP could be considered one of the best tools to improve the regional development of the region and actors working on it.

Like companies, STBP all over the world should face globalisation phenomena, no matter where they are located. The globalisation is leading business to growth to a global or worldwide scale, due to the interconnected world, it is being developed due to the place information and communication technologies have taken in our daily life, which leads to think and to act globally.

In a way, the clue to overcome the critical size of the market can be “acting global”, even if the message is considered for the medium term.

D. Rely on clusterization, to act as an engine driving economy

Clusters are geographic concentrations of interconnected companies, specialized suppliers, service providers, and associated institutions in a particular field that are present in a region. In the last decades, they have globally arisen because they increase the productivity with which companies can compete.

According to the Michael Porter’s cluster analysis, there is evidence that new industries emerge where there is a strong cluster environment. In this sense, the presence of strong clusters in a region should enhance growth opportunities in other industries and clusters, thanks to the synergies created. Overall, these findings highlight the important role clusters play in regional economic development.

Pragmatically, Porter explains how can clusters affect competition in three broad ways: first, by increasing the productivity of companies based in the area; second, by driving the direction and pace of innovation; and third, by stimulating the formation of new businesses within the cluster.

As it has been said before, it comes out again that the location should no longer be a source of competitive advantage, as open global markets, rapid transportation, and high-speed communications should allow any company to source anything from any place at any time. Clustering together can help to interconnect businesses, suppliers, and associated institutions in a particular field has helped companies, to increase their innovativeness, efficiency, and productivity.

Clusters add dynamism to create synergy within the business environment. That is why, they have become so important in the region they are located, becoming one of the engines which drive the economic development and innovation nowadays and should be pushed in a region which wants to develop a new STBP.

It is true, that to compete internationally greater emphasis must be placed on excellence and quality; that is why a lot of initiatives seek to achieve this objective by strengthening the line between research and industry which could lead to a development of a STBP. This is the reason why cooperation between agents is needed.

Clusters are catalysts of change, since they operate most often at the intersection of traditional sectors, develop and integrate cutting-edge technologies, and help companies to internationalise. The European Commission has said that *“increased global competition has raised the interest in strong clusters as hubs for boosting industrial innovation and growth. The objective of the Europe 2020 Strategy is to promote smart, sustainable and inclusive growth in Europe, and clusters are an important element of this strategy”*.

So, this is an important point to take into account for a developing region, at the medium term, as once the enterprises are being created and developed, the development could be easier, both for the region and the business located in it, if they work together.

In the end, all this, should lead to a cluster development in the developing regions which want to create a STBP, as this clusters could help the regions to boost a business area in the region they are located, fostering the creation of new start-ups, boosting the already existing enterprises, making synergies among actors easier.

E. Foster entrepreneurship to count on skilled human resources.

Entrepreneurship is considered also a key factor for regional development, but at the same time, and as it has been mentioned before; Clusters play a very important role in the regional development. This is the reason why the relevance of Clusters appears again when moving to foster entrepreneurship. If we mix these two components, entrepreneurialism and cluster development, the impact results could be multiplied.

As it has been analysed, clusters influence the convergence and agglomeration in the growth in the number of start-up firms as well as in employment in these new firms in the region they are located.

There is significant evidence of the positive impact of clusters on entrepreneurship, as industries located in regions with strong clusters, experience higher growth in new business formation and start-up employment. Strong clusters influence the creation and establishment of the already existing firms, as well as their relocation (it could be possible to bring about movements in the location of the enterprises, due to a cluster development, or the development of a STBP itself).

That is the reason why entrepreneurship could help cluster development in the developing regions, and the other way round. However, in a developing region, the promotion of cluster and entrepreneurship should be considered also in the mid-long term.

This premise can also be transferred to a new developing region or a region which is starting a process to develop a STBP, as on the one hand, it is important to rely on the current actors to boost the STBP nowadays; but on the other, the regions willing to foster a future entrepreneurial society, should start boosting now an entrepreneurial education, which should seek to develop general competencies, such as self-confidence, adaptability, creativity, and the ability to assess risk, among others, for the entrepreneurs of tomorrow.

To put it into a nutshell, this entrepreneurial education would be teaching the entrepreneurs of tomorrow with the skills and knowledge they will need to contribute to economic prosperity, including core competencies throughout the national curriculum, or effective dissemination of good practice, among others.

By way of illustration and from the practical point of view, we have analysed the result of a pilot action launched by the European Commission that brought together policy – makers and a range of stakeholders from 26 countries to discuss entrepreneurship education, sets out a number of key actions that countries must take if they are to improve the delivery of entrepreneurship education.

If we adapt this results to the developing regions analysed, it could be concluded that if a region wants to develop a new STBP, should put into practise some of the actions proposed to improve the dissemination of this enterprising education. The actions suggested are the following ones:

- Develop a national policy framework, which embraces input from ministries responsible for education, enterprise, economy and trade. Engagement with stakeholders and social partners is also critical.
- Support teaching, as more training, development of resources, tools and methodologies could help.
- Join efforts to engage with businesses and their associations. The world of work is where students are best able to learn about entrepreneurship in action, so visits and placements are a must.

- Developing an active role for local and regional authorities. These bodies can help to develop support measures for students and teachers, and can also take the lead in developing school clusters and help forge links between business and education.

Finally, it has to be said, that efforts must be made to build up, what could be called as the local and regional entrepreneurship education ecosystem, in which all the actors concerned should be engaged in an entrepreneurial education.

F. Build an entrepreneurial and business-friendly environment, socially responsible

When developing a Business or Science and Technology Parks, it is of paramount importance to build an entrepreneurial and business friendly environment, not only for the actors of today, but also to create a future context in which the newly skilled human resources will be acting.

Once all those actors have come to the market, they should put into practice some actions to boost a business-friendly environment. It is not an easy job, but it will help the new businesses to develop and get the needed help to enter in the market.

When a new developing region is planning the creation of a STBP, which includes the businesses located in, they should consider taking benefit from some initiatives that are being carried out at regional, national, and international level, which will be different, depending in which region the STBP is going to be developed.

All in all, at every level there will probably be some actions, or access to finance, that could help starting business to overcome market failures, and which could range from the setting up a new company, investment in machines or hiring additional worker, contributing to intellectual property right costs for the adaptation adapting to the new environmental standards.

And talking precisely about standards, it is also important to mention the role of the corporate social responsibility (CSR), in a new regional development.

This Corporate social responsibility, also called corporate conscience, citizenship, social performance, or sustainable responsible business, is a way of corporate self-regulation integrated into a business model. Its policy functions as a built-in and self-regulating mechanism whereby business monitors and ensures its active compliance with the spirit of the law, ethical standards, and international norms.

The goal of CSR is to embrace responsibility for the company's actions and encourage a positive impact through its activities on the environment, consumers, employees, communities, stakeholders and all other members of the public sphere. And it will be easier for a region, to start taking these principles into account from the early stages.

When it comes to create a new STBP, the majority of the already existing business that will take part in this new area, should try to focus, step by step, to this CSR practices that far from being only a positive approach to what a future business area should be, protect environment and create value for the region and the actors located in. This is the reason why, more and more and more firms see CSR as an essential part of developing their position relative to competition, fostering this business-friendly environment.

G. Foster a clean and safe growth of the region

Up to now it has been stated the main factors taking part in the regional development, but once again, it is important to refer again to the environment, considered as the surrounding area of the business park, to promote a clean and safe growth of the region where the STBP will be located.

It is true that the development of a new business area should go hand in hand with the green technology and eco-innovation. This naming of Eco-innovation is all about creative ideas, which show that environmental protection and competitive growth can

go hand in hand. Entrepreneurial talent can, in fact, be used to stimulate innovation that is not only good for the economy but also for the ecological footprint.

No matter where the new STBP is going to be located, it is important to have reliable and comparable territorial-planning information for safe, sustainable and prosperous development. With this scope, a new tool, which can test if the growth of a region is sustainable and safe, is already available.

The developing of a new region should include a planning for the coming years, which could help to understand the land-use perspective and help new regions to take the decisions more consciously.

In short, it can be said that it seems to be necessary to marry industry (considering both existing and new enterprises) and environment. This matching should foster a smart, green and inclusive economy, which could help to make the regional development and consequently the development of a STBP easier.

H. Attract investors/financial support

Last but not least, it is important to mention the need of financial support, and finding investors or stakeholders which could help in the developing process.

It can't be denied that one of the main barriers when a new STBP is going to be developed, is the lack of capital or investors. However, it will be easier to find investors when the planning of the new STBP is already implemented and all the actors involved are already aware of what the objectives, timing, budget, and future actions are.

Besides, as it has been explained before, it is easier to develop such a big project, if it is supported by a managing group. The existence of this managing group, will make things easier and so would do the development and creation of a managing society, which apart from organizing the development at a technical level, should also foster the financial aspects of this development.

It is true that the financial risks have to be taken into account when the process of development of a new STBP starts, but apart from this economic risk, it should also be considered any kind of risk derived from this process (marketing, developing and managing processes). Yet, the different kinds of synergies (resource, client, principal, etc.), which are of paramount importance during this process, are needed.

Building this kind of new environment requires a great amount of flexibility in this planning and construction, and which could be foreseen as a long term investment. During a period of 15 years, the tenants are likely to change several times, which will lead to an easy adaptation to changes.

In any case, it has to be mentioned that creating a STBP is a long term investment and project, that is why, the first steps should be analysed in detail, involving all the future actors participating in the process in the mid or long term.

5. Conclusions

The establishment of a Business Park or a Science and Technology Parks is considered as a powerful instrument to strengthen regional development in a territory. Renewable Energy Source (RES) potential in a deprived region may act as a starting point to develop green growth based on emerging technologies and developing innovation ecosystems becoming service providers in the global market; but in this new global market, innovation and Technology transfer are also needed in a developing region.

Policies of support for technology transfer and innovation have evolved in parallel with the evolution of the economic/regional framework, and the process of innovation. Thus, the technology transfer system should act on three levels in the framework of a regional policy: first, coordinating the technological network and reinforcing the image of the region; then, supporting technology transfer and firm level; and finally, improving technology transfer in the specific clusters/sectors.

This process has given rise to different Park models. To classify them, six different types have been considered, and if the Business Park is considered the starting point of this process, Science and Technology Parks are considered to have achieved the highest level of development.

But there is no rule for developing a new STBP. In fact, it is the context of the region which determines each model. In any case, there are some barriers, which should be overcome, throughout the development of a STBP, which are:

- Define the context and a Developing plan for the STBP, involving all the market actors.
- Create a management team or society, to deal with all the requirements during the process.
- Overcome the critical size of the market.
- Focus on clusters, to act as an engine driving economy
- Foster entrepreneurship, to count on skilled human resources
- Build an entrepreneurial and business-friendly environment, socially responsible
- Foster a clean and safe growth of the region

- Attract investors and financial support.

However, once these barriers are overcome, and the scopes are achieved, in the medium-long term, the development of the STBP in these regions, could favour:

- Generation of new companies, and research centres
- Networking between agents of the Science and Technology Company system.
- Diversification of the industrial fabric
- Development of infrastructure generating added value for the region.
- Collaboration with University
- Promotion abroad and in organisations located out of the Park.
- Collaborations with other Technology parks, at national and international level.
- Completion of R+D projects
- Dissemination of Technology and Knowledge
- Bring new technologies closer to society. Encouragement of a culture of quality and technological innovation.
- Magnet effect generation on scientific and technical vocations in the place they are located. Increase availability of ideas and trained staff, originated in universities or established companies.
- Examples of good practice
- Leadership from leading scientists and from already successful entrepreneurs.
- Quality of life, attracting new workers, and keeping old ones.

In any case, the creation of a STBP has to be considered as a mid to long-term project, which will involve throughout the whole process countless market actors, but at the same time will foster regional development.

6. Bibliography and useful links

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- IASP-International association of Technology Parks, www.iasp.ws
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