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Drivers and challenges for green enterprises

Results of the survey analysis in the GRESS project regions

Kristiansand kommune

West Pomerania

CITTÀ METROPOLITANA DI BOLOGNA

CLEANTECH BULGARIA

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Introduction

Funded by the Interreg Europe policy learning programme, the goal of the GRESS project is to analyse the green economy framework in Europe, pointing out critical aspects and opportunities for SMEs and start-ups in the five territories covered by the initiative. In particular, the project fosters international policy-learning activities in order to strengthen policies' effectiveness in supporting the development and competitiveness of startups and SMEs in the green economy. The five public authorities participating in the project will explore good practices of supporting tools and strategies for green and blue companies in the partner countries (Norway, Greece, Poland, Italy and Bulgaria), with the ambition to try to replicate them in their regional contexts. As final outcome, the partners will improve five local policy instruments through new measures and services that will lead to more incentives and access to support by green businesses, higher attractivity of the green economy sector – especially to young startuppers – and increased participation of green products and services in public procurement.

The aim of the present document is to synthetize the main findings and results of the survey carried out in the five project regions during spring 2020. The survey was targeted at green and not-green businesses, i.e., SMEs and start-ups, and wanted to investigate the main drivers and obstacles for their development in the market. It tried to verify the positive effects of the green economy for businesses, not only in environmental terms, but also in terms of competitiveness, and aimed to identify the stimuli, the obstacles and the public policies that are able to speed up green economy development and startup processes. In particular, the survey focused on green investments, access to public and private funding, green jobs, and enabling external factors.

The survey methodology was developed by the team of the Metropolitan City of Bologna with the technical expertise of Nomisma S.p.A., which developed a common English template (see Annex) consisting in 32 multiple-choice questions, including concept definitions. The template was further refined within the GRESS partnership and translated into local languages, when appropriate. Each partner submitted the online survey to local and regional enterprises and analyzed the collected answers in a survey report, which was then synthetized for the purpose of this publication.

It is important to underline that the timeframe of the field phase coincided with the first highest pick of the Covid-19 emergency in Europe (March – June 2020) and government-imposed lockdown restrictions for enterprises in most partner regions. It should be considered that some influence on the total number of respondents (135) and on the quality of responses may have occurred. Given the limited size of the sample and number of responses, the results of the survey are not intended to be statistically significant, but they can provide the partners with interesting insights on issues experienced by local companies in the partner regions.

Marino Cavallo

1. Business survey - Kristiansand, Norway*

The Agder-region with Kristiansand as the regional capital, is the southernmost region in Norway with a total population of 305.000. Important industrial sectors in the Agder region are process manufacturing industries, maritime industries, equipment and engineering, software and computer/ ICT sector, travel industry, retail trade and services, building and construction industry. Entrepreneurship has for several decades been strong compared to many other regions.

The online survey tool for GRESS was sent by email to 60 businesses on April 6th, both startups and SMEs. As many as 38 respondents started to fill out the survey, but only half, 19, completed all the questions (32%) within deadline 22nd April. Accordingly, the number of answers to each question will be different. More startups than SMEs completed the survey. 17% of the businesses were less than a year old. 33% between 1 and 3 years old and 50% between 4 and 9 years old. 70% of the responding businesses had between 1 and 9 employees. 73% of the companies in the survey had a turnover less than €2 million, 10% more than €10 million.

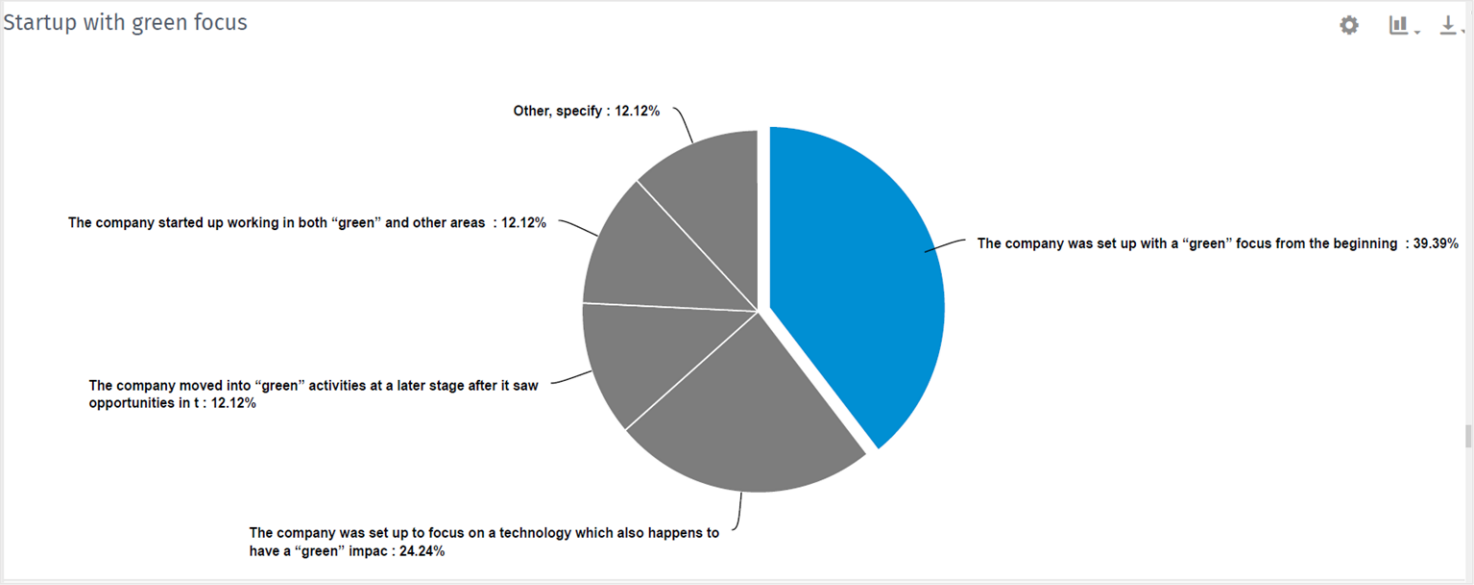

Figure 1. Startup with green focus

* By Øyvind Lyngen Laderud, Alena Bohackova, Stein Otto Daatland (*Kristiansand kommune*) and Karsten Aust (*Sørlandets Europakontor AS*)

National or regional grants

86% of 28 companies had considered to apply for public grants during the last 3 years. 11% applied but was not granted support. 68% applied of the 28 companies and was also granted support. 7% did not apply after all. The most popular support tools incentives or programs are Skattefunn /R&D Tax incentive, Innovation Norway (different programs), the Research Council (different programs) and Enova program (energy and climate projects).

57% of the successful businesses was granted support from Skattefunn. 53% from Innovation Norway, often widely used for startup-grants! 32% was also approved for grants from the Research Council, often R&D projects with longer time to markets. Innoventus Sør is the regional Incubator for startups and entrepreneurs. The incubator accepts candidate startups into their program following strict assessments. 18% is currently or was earlier a member of the incubator. Startups will receive advice and help to commercialize and raise capital or equity. Only a very few of the businesses had received funding from regional or municipal support.

Challenging aspects of local/regional grants

The respondents divided among all alternatives. There is a clear connection between the amount of the funding, often too small (16%) combined with the need for own co-funding to become eligible (16%). The issue and challenge around private capital is mentioned other places and is obviously very difficult for many startups and small businesses. Application procedures (11%) and project administrations and reporting (14%) are also challenging. Thematic scope and eligibility criteria were challenging for 9% while timing and frequency of calls was mentioned by 7%. Another aspect mentioned by one company was difficulty concerning how to explain the business or project idea in the application form. The topic or idea often comes second and awards professional proposal writers.

Private capital

Several of the companies in the survey did also get support from private entities. For most startups, it`s not unusual to self-finance the project. Individual investors, 23% and bank loan, 16%. The need for more accessible private capital is clear.

EU Grants and challenges

9 companies (35%) of a total of 26 companies in the survey had not yet considered to apply for EU grants or support. 31% did not apply after assessing the possibilities. 27% applied and was granted funding. 8% applied but was not granted EU funding. The most challenging aspects of EU grants seems to be the application procedures and costs (29%), project administration and reporting (18%), the challenge with a low success rate (11%) and the own co-funding and thematic scope (both 8%). It was also mentioned that it`s hard to get experienced advice and guidance in internationalization and in connecting with a relevant network from the same industry.

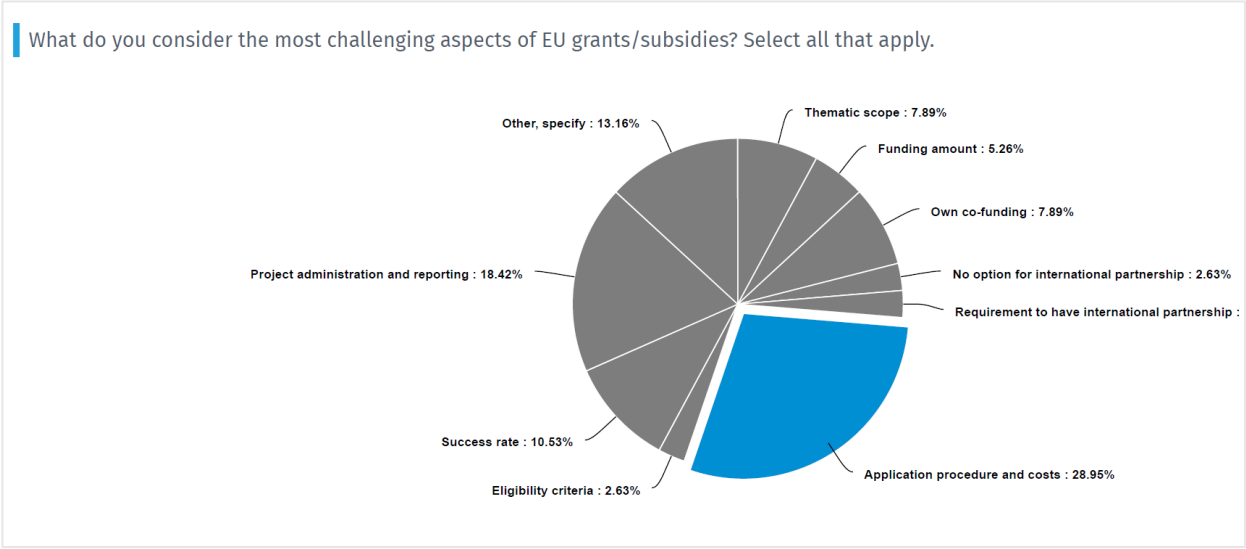

Figure 2. Challenging aspects of EU grants

Relevant external support for innovation and business development

Accessing finance in general (19%), business angels (7%) and support with proposals for grants (18%) are the single factors most in demand from the respondents. Other factors are help and support regarding international operations, like partnership search and match- making (12%), international expansion (12%), followed by support to access test, lab and piloting (11%). A few mentioned the need for follow-up with consultants throughout the whole project execution.

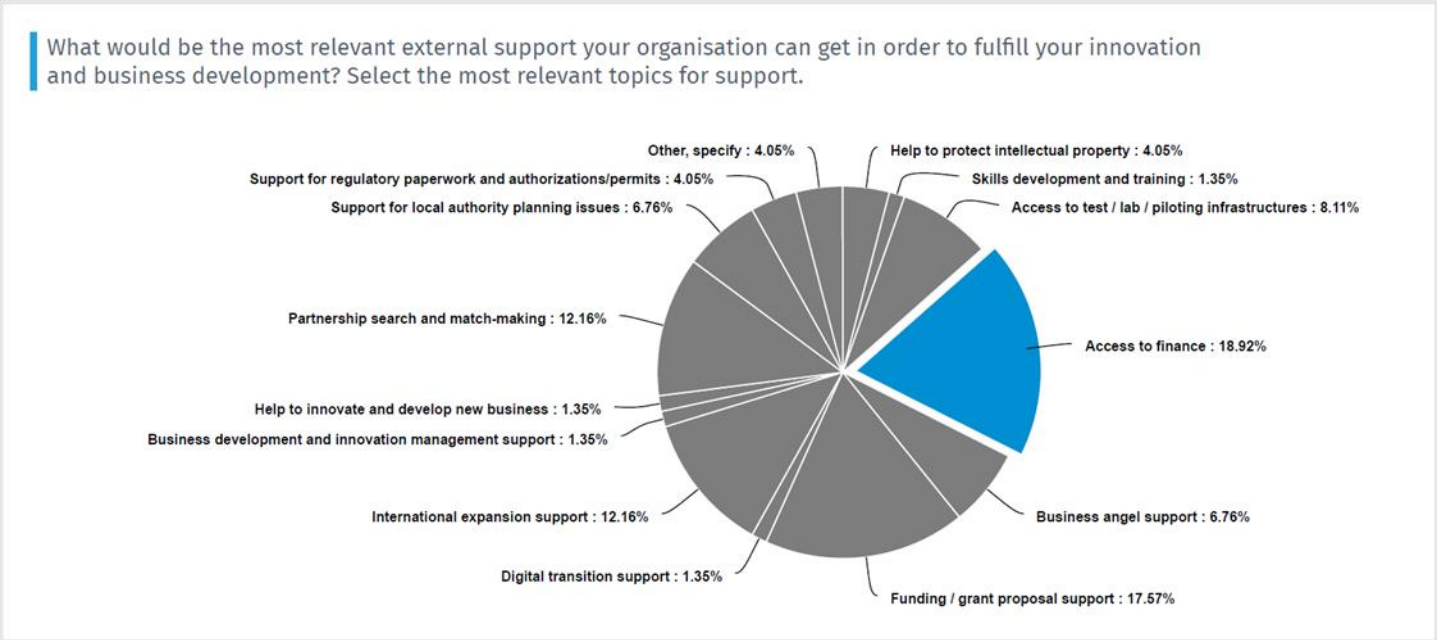

Figure 3. Relevant external support for business and innovation

Green sales and green jobs of total turnover and employment

The preliminary analysis of the data shows an equal divided picture among respondents. While in one group (42 %) the share of green sales accounts for more than 75% of total turnover, in the second group (42%) it is less than 10%. The smaller third group (14%) estimates its share to be between 10 and 25%.

In the last 3 years, has the number of green jobs compared to the total staff gone up?

As above, there is evidently a clear split among the companies. One half can trace the increase of jobs back to green activities, while the other half cannot. We have not yet analysed the different market segments, or type of company within which they operate. The vast majority of respondents (83%) assume that the number of green jobs will **increase** in the near future. This corresponds well with comments below regarding planned future green investments. However, for a small group (17%) this is not a future scenario.

Has your company undertaken any environmental investments in the last 3 years?

A majority of 66% of the respondents have made investments related to the environment during the last three years. Mostly investments in research and development (33%), technology and software (22%) and machineries (22%) are pending for most of the investments. Only 11% invested in training.

What level of difficulty do you face in finding competent and skilled workforce?

Access to qualified workers is generally cited as one of the significant challenges for the future. None of those interviewed respondents foresees any major hurdles. A large proportion (83%) describes the challenges as moderate, while a small group (17%) has no issue at all with it.

Factors that can stimulate investments in the green economy?

The survey allowed respondents to tick several alternatives. Nevertheless, all respondents underlined the role and responsibility of public sector on all levels. The public sector should speed up the transition using targeted incentives (21%) and through green public procurement policies (23%). How targeted incentives could be designed or implemented were not explained in further details. Other important factors were aimed at public bodies, institutions working to support the business community. Increased focus and resources should be aimed at increasing awareness in the market or business in which the businesses operate (19%) and at legislative and regulatory changes (16%). These findings also correspond well with the national report on `The pace of Green transition in Norway` from November 2019[1] that «the environmental requirements across industries are often very general and are seldom specifically connected to greenhouse gas emissions or low emission technologies. Only 25% experienced demand for green products and services»

Obstacles to investments in the green economy?

The most important obstacle for further investments in the green economy was insufficient market demand (53%) or difficulty to assess the market demand (50%). Diffusion of environmental practices was imperative. However, many of the businesses in the survey that currently there is low profitability following

[1] https://www.regjeringen.no/contentassets/84a01b96cf88453ea542886250cb64fe/tempo-pa-gronn-omstilling-i-norsk-naringliv-ey-2019.pdf

such investments (57%). Cost of investments are considered a strong obstacle for nearly 38% of the businesses. Excessive costs of adapting processes are also considered a strong or medium obstacle by 62% of the respondents. 19% of the respondents perceived the lack of scientific and technological skills as a strong obstacle. 13% mentioned lack of qualified personnel as a strong obstacle.

Costs regarding finding capital is clearly an obstacle for green investments or finding green equity. Almost all respondents admitted that this was a strong or medium obstacle. Although many large corporations are concerned with its own sustainability goals, in practice it seems difficult for smaller suppliers to invest in green or more sustainable processes or technologies if the customer do not explicitly demand this from their suppliers. This is a paradox as around 90% of companies impact on the environment come from supply chains, according to McKinsey[2]. This is also in line with the comments on the questions above.

Has the company planned investments in the green economy?

The main findings here confirm the main impression from other studies that more and more companies acknowledge the importance of sustainability in their business operations. 84% of the respondents in the GRESS survey confirmed that they had already planned such investments. Just a handful of companies (15%) did not plan any green investments mostly, because of high costs (38%) or not being a priority for the business (15%) or cannot see the benefits (10%).

Additional comments from the businesses in the survey

Some of the businesses have added that there is more talk than action from government agencies. In Norway the market for electric cars have benefited from tax exemptions and other subsidies. This should be applied also in other markets for electric transportation means like vessels. The sum of incentives must be large enough to make people change consumer patterns.

Some municipalities or public bodies are more forward leaning than others when working with startups, especially regarding green procurement criteria. Public bodies have to accept a higher risk for their investments to stimulate more innovative procurement. A different payment model that will partly be upfront, halfway and at delivery, instead of payment at delivery which often is not possible for small businesses or startups.

[2] https://www.mckinsey.com/business-functions/sustainability/our-insights/starting-at-the-source-sustainability-in-supply-chains

One respondent complained that governments or public represent the biggest challenges for more green and sustainable products. Postponing new eco-friendly regulations partly due to pressure from existing markets suppliers or lack of willingness from authorities or public bodies hampers both innovation and green investments.

Governments must implement regulations that will open up for eco- friendly solutions. Initially this will often mean higher investment costs for customers, but life span cost is lower and in line with the intentions of EU and circular economy. The focus and implementation on green solutions in public procurement should be installed rapidly. Public sector or institutions must also ensure necessary support for both matchmaking process and high degree of funding (70-80%) in explorative and innovative projects between customer and tech supplier.

Conclusions

The current Business development in City of Kristiansand has pointed out the need to improve access to risk capital as an important element. The challenge has not yet been solved and the work to trigger more capital from both outside and inside the region itself must be further strengthened. Access to green risk capital has been even more difficult and should be a priority going forward.

The focus and implementation on green solutions in public procurement should be installed rapidly. It can help stimulate a critical mass of demand for more sustainable goods and services which otherwise would be difficult to get onto the market.

Apparently, there is insufficient demand in the markets for eco-friendly solutions. Diffusion of environmental practices in the sector is imperative! More focus and resources should be aimed at increasing awareness in the markets in which the businesses operate and at legislative and regulatory changes.

There are several ambitious regional and local plans to support green growth and innovation in Norway and the Agder region. However, it seems that the main challenges are transforming and implementing policies and plans into actions. There is currently lack of, or insufficient human and financial resources.

2. Business survey - Piraeus, Greece*

Small and medium-sized enterprises and startups (SMEs) are a form of organizational activity particularly important for the operation of the economic cycle. Small and medium-sized enterprises are distinguished from other forms of organization, through the use of specific sizes. These sizes are the number of employees, the turnover and the total annual balance sheet. These three categories attempt to identify the most important features of the business initiative, and to understand the level of its activity.

Small and medium-sized enterprises and startups are developing serious economic activity, which can have significant effects not only on the effective operation of the economic cycle but also on the social balance. This is because small and medium-sized enterprises are a source of knowledge and entrepreneurship at a small scale. The entrepreneurship that develops in small businesses can be based on highly innovative ideas, which can contribute to the differentiation of economic ions from their competitors.

The purpose of this research is to study the ecosystem of start-ups and small and medium-sized enterprises in Greece. Then there is an effort to gather the most important structures for their development in the Greek environment. The reason for investigating this issue is the large extent they have received in recent years as well as the increase in unemployment and the reduction of youth employment in the midst of the crisis.

Structural elements of the Greek material ecosystem of start-ups

Unfortunately, in Greece, the mechanisms of business incentives have developed in recent years and are significant in number but compared to European countries they are somewhat limited.

According to the incubator support programs in Greece, "Incubator" means the legal entity that provides consulting services for the commercialization of the business idea as well as networked services and access to the business community, it has a seed capital for the creation of innovative technology companies, spaces and infrastructure for hosting businesses and supporting them in the development and exploitation of technological innovations.

It is noteworthy that most business incentive mechanisms are concentrated in Athens and a smaller number in Thessaloniki. This is not just about the difference in population distribution. The distance from the urban centers does not make things easy both in communication and in the wider development of opportunities, thus creating another factor of failure of the newly established companies in Greece.

* By Marina Vlachogiorgou (*Municipality of Piraeus*)

Funding sources

Due to the extensive economic crisis that Greece has been facing in recent years, there is political instability, economic uncertainty, inability to invest. Therefore, availability and accessibility to funding sources are minimal. As a result, a major issue facing start-ups in Greece is the search for funding.

The growth model followed by Greece is not a viable solution as the global economic crisis has resulted in austerity measures, a sharp decline in investment and GDP and in general the rise in unemployment, making it necessary to change the development models and implement new ones. In this regard, start-ups are an interesting proposal and solution.

For this reason, in the context of the research, an empirical approach of business start-ups is carried out through a questionnaire. The questionnaire is designed to identify the factors of success and failure of such business models in the Greek ecosystem.

Through this process, the main statistical results of the research will be presented in order to produce conclusions and suggestions for dealing with problems faced by start-ups and small and medium enterprises, improving support structures and promoting their development.

Methodology

The research was carried out online with the method of completing a questionnaire through the Google Forms platform, which simplified the process as it was easier to send the questionnaire and collect the answers. Specifically, the questionnaire was sent using a link to businesses.

The survey was conducted from April 3, 2020 to July 3, sent to 211 companies and gathered only a total of 9 entries. It is important to underline that the timing of the survey coincided with the government-mandated lockdown of almost all economic activities in Greece due to the spread of the COVID-19 epidemic.

Survey results

The survey respondents are mainly small – medium enterprises. 88.9% of the respondents consider their business to be small and medium and 33.3% to be a startup. Only 16.7% of the companies received start-up financial support from private sources, as opposed to 88.3% which were self-financed. Regarding the company's performance, last year compared to the previous year, 77.7% reported an increase in turnover

and 55.5% in staff, in contrast to a decrease of 88.8% regarding the increase in turnover from abroad. The estimated share of revenue from green / blue sales of total turnover was less than 10% for 42.9% of businesses.

Of the surveyed companies, 33,3% identified themselves as start-ups, provided answers as to whether they had been founded with a green focus. Of these respondents, 16,7% indicated that they were set up with a green focus, and also 16,7% moved on to green activities after they saw opportunities in the area, 33,3% were set up to work on both green and other areas and 33,3% was set up to focus on a technology which also happens to have a “green” impact.

Conclusions and suggestions for improving the Greek ecosystem

The purpose of this research is to record the Greek ecosystem during the economic crisis and its contribution to the Greek economy. In addition, a significant effort was made to record the success and failure factors of Greek start-ups within this ecosystem, in order to produce important conclusions and future proposals to strengthen the existing ecosystem for the benefit of young entrepreneurs and the Greek economy.

First of all, I would like to emphasize that the start-up model is characterized by innovation and rapid growth. Therefore, in order to be able to grow, consolidate and grow in new markets, all the processes of establishment, development, finding financing must be characterized by simplified processes that offer the possibility of vigilance. Therefore, based on the results and conclusions of the research, I quote the following suggestions.

1. Greek state (economic - political environment)

- The Greek state is not very friendly to youth entrepreneurship
- Reduction of Bureaucracy
- Creation of a stable economic-political environment
- Facilitation of start-up procedures (simplified procedures)
- Reduction of taxation and insurance contributions, especially in the first years of its operation
- Incentives for the recruitment of staff especially (and even specialized) in the first years of operation
- Adverse economic environment - economic crisis
- Existence of substantial structures to support youth entrepreneurship

2. Funding

- Improving ecosystem information on sources of funding to facilitate funding and access to resources
- Strengthening the financing of start-up enterprises by both state and private bodies
- It is necessary, however, to make more systematic efforts and to extend the use of smart financial tools to sectors where the country has a competitive advantage and opportunities for business activity. Successful entrepreneurs need to be exemplified to serve as role models and to actively support companies that are eligible for growth and job creation.

3. Universities

- More connection of the universities with the start-up companies and in general with the youth entrepreneurship

I would also suggest the creation of a single ecosystem to enhance mutual support and exchange information and knowledge between them, e.g. gathering information for the target market. Specifically, to create in Greece a strong business ecosystem that will help the exchange of know-how, information, support and reduction of time delays through the creation of a space where all start-ups will be concentrated.

3. Business survey - Westpomeranian region, Poland*

West Pomerania is a good starting point for developing blue and green business in the Baltic Sea region and the macro-region of Western Poland. Specific natural conditions determine the development of certain areas of the economy, especially those based on the blue economy, covering all activities related to maritime economy (manufacturing activities and related transport branches) and the green economy, oriented towards improving the quality of human life while reducing threats to the natural environment, including tourism, agriculture and forestry, production of energy from renewable sources. What is needed is a green targeted regional support growth policy for start-ups encouraging entrepreneurship and/or innovation investments. This is due to the fact that the regional ecosystem appears still underdeveloped, fragmented and not properly backed by a supportive policy framework. At the policy level, there is a good set of strategic documents which provides strategic intents and indications to foster innovation at the local level. However, many of the set priorities have not been turned into support schemes to boost entrepreneurship and encourage new business in green and blue economy.

The region has a strategic geographical location in Europe, but peripheral position with respect to the main Polish start-up hubs. Many companies abandon West Pomerania and delocalise in other closer EU cities (e.g. Berlin and Scandinavian urban centres), which offer valuable opportunities in terms of finance, competencies and more mature start-up ecosystems.

Thanks to the advantages related to the production of energy from renewable sources, West Pomerania has the potential to develop a green economy. Therefore, the Region wants to be a leader of blue and green development in Poland and as well as in the Baltic Sea Region. For this to happen, the Region must undertake a number of activities to support the green economy, including counteracting unfavourable changes in law.

Provided that the region's brand and the quality of the goods created in its area are skilfully managed, then systematic raising of eco-logical standards and consumers' expectations may be a factor positively stimulating the economic profile of the region. In each case, the category of the green economy must be gradually transferred from the level of aspiration and activity categorization into the practice of creating and functioning of products and services, using mature, environmentally friendly technologies. A natural consequence of taking into account the „green" profile of the West Pomeranian economy is radicalism in treating a wide range of consequences, challenges and opportunities related to it. After implementing a number of actions the Region it will be able to re-discount its geographic rent and the associated growth

* By Marta Ciesielska and Aleksandra Filipczak (*Westpomeranian region*)

potential of the blue and green economy. Thanks to intensification of technology transfers, absorption of scientific research results and entrepreneurship of the region's community, innovation and market competitiveness of the small and medium enterprises sector will be improved. The level of technological advancement of the regional economy will increase, while concentrating on the areas of the most dynamic development.

During the GRESS project implementation, a survey was conducted, through a questionnaire submitted to start-ups and SMEs. 32 questionnaires have been collected. Here below a brief overview is provided on the major survey outcomes.

 Non-green economy companies	Number of interviews: 12
 Green economy companies	Number of interviews: 11
 Live start-ups	Number of interviews: 10

Start-ups

Among the stat-ups respondents 60% of them where environmentally-oriented. Most of the environmentally-oriented start-ups (83,3%) were established without any external support. Every third start-up that managed to obtain support on the establishment obtained this aid from a public source or program. Private support was available to 83.3% of these companies.

- The estimated share of revenues from green sales in the total turnover represented 75% in every second start-up (50.0%).

- Production, service provision and management areas have personnel with tasks, profiles or competences involving environmental protection (50.0%).

- One half of the green and non-green companies (50.0%) expect a growth in the number of green jobs in the forthcoming future.

- Three per four green and non-green companies (75.0%) invested in environmental protection in the recent 3 years. These projects consisted of adopting practices and/or systems for more effective use of energy and other resources and for training. Most of these projects were considered profitable (66.7%).

According to environmentally-oriented and non-environmentally-oriented start-ups, business-supporting structures (accelerators, incubators, technology networks or "match-makers") (50.0%), as well as public awareness-building policies (40.0%), can encourage investments in the green economy.

The cost of investing and problems with finding qualified personnel were considered the major barriers to implementing environmental projects. 40.0% of the start-ups that were a responders of the survey plan for investing in the green economy.

Green companies

Companies with environmentally certified processes represented 45.5% of the respondents. More than every third company (36.4%) provided environmental protection services or implemented an innovative process for reduction of resource or energy consumption, emissions or waste production implemented in the 3 recent years. The estimate share of the revenues from green sales in the total turnover was 75% in almost every second start-up (45.0%). Technical (45.0%) and sales and customer service (45.0%) areas are staffed by personnel with tasks, profiles or competences involving environmental protection.

The percent share of green jobs in the total number of employees was higher than 75% in more than every third company (36.4%). Respondents expecting a growth in the number of green jobs in the forthcoming future represented 63.6% of the population.

More than one half (54.5%) declared that the company invested in environmental protection in the recent 3 years. This typically involved the purchase of machines. Most of the investments (83.3%) were recognized as profitable.

Almost one half of the respondents believe that business-supporting structures (accelerators, incubators, technology networks or "match-makers") (45.0%), as well as public awareness-building policies (45.0%), can encourage investments in the green economy. The cost of investing and insufficient market demand were

the major barrier to investing in the green economy. 63.6% of the respondents plan for investing in the green economy.

Non-green companies

Among the non-green companies respondents every fourth company produces environment-friendlier goods (or goods containing such parts or components). Every third company (33.3%) declared that their revenues from green sales grew by 10-25 % over the recent 3 years. Technical (50.0%) and service provision and management (50.0%) areas are staffed by personnel with tasks, profiles or competences involving environmental protection.

Three per four green and non-green companies (66.7%) invested in environmental protection in the recent 3 years. The investments were made to adopt practices and/or systems for more effective use of energy and other resources and to acquire technologies or software. Most of these projects were considered profitable (75.0%).

Conclusions

According to environmentally-oriented and non-environmentally-oriented start-ups, business-supporting structures (accelerators, incubators, technology networks or “match-makers”) (58.3%), as well as public awareness-building policies (50.0%), can encourage investments in the green economy. The cost of investing, low profitability and technical problems were the major barriers to implementing environmental projects. Every fourth company plans for investing in the green economy (25.0%).

Fostering an ecosystem implies to prioritize development suggestions of the stakeholders and trace a development path of most successful start-ups and companies, that is why participants were asked to present their suggestions on how to improve public support for the green economy. Based on them, recommendations were prepared:

1. Promoting green entrepreneurship among youngsters should be a major focus both at the policy level and while defining a support service model in the region (more targeted educational paths at schools, more training and coaching schemes, entrepreneurial attitude in academic contexts and spreading of success stories).

2. Environmental awareness should be achieved through trainings for the companies about the importance of sustainability and “green thinking “.

3. Full coverage of the territory of the Region with support services for start-ups in training and education for green entrepreneurship should be achieved.

4. The role of the best performing business support organizations should be reinforced and the whole support offer for green start-ups should be rationalized.

5. Incentives and grants should be included in the regional strategic financial planning to increase green growth and create new opportunities.

6. New initiatives should be taken to create stronger linkages between the West Pomeranian innovation ecosystem and other start-up hubs (national and international). The Region should encourage stakeholders to cross exchange and synergies, through participation to national and international initiatives.

4. Business survey - Metropolitan city of Bologna, Italy*

The GRESS company survey was sent to **78 companies** in the Emilia-Romagna Region and ran from 26 March 2020 through 28 April 2020, receiving a total of **25 responses** (32%). The results are not intended to be statistically significant, but important insights can be gained on the local start-up community and green economy, company performance and activities, green jobs, investments and suggestions for improvements.

Most of the companies surveyed are involved in "traditional" green activities associated with *energy and environmental services and products*, whereas others are spread across different sectors such as *agri-food and biobased products*, and *information technologies* among others.

The survey respondents are mainly micro-companies that have been operating for less than 10 years and generated revenues of less than 500,000 euros in the past year. While close to 60% were either **spun-off from university or research institute activities** or a **start-up incubator**, the rest were self-started and largely self-funded. Indeed, **self-financing *was indicated as the most important private source of start-up financing***, followed by bank loans. The few companies receiving public funding mentioned local or municipal funding, the Climate KIC and EU programmes. An overall picture emerges of very small companies, many having been spun off or receiving some support from a structure, but with ***very few having benefitted from public incentives or funding for environmental investments***.

A ***mixed picture of company performance emerges***, with around half of the respondents reporting increases in revenues (56%) and in staff (48%). **Revenues from abroad** increased for 24% of the respondents, through 48% indicated that this is not applicable to their business. For 12 of 21 respondents, more than 50% of company revenues came from green sales. This mixed picture is also seen with respect to the *dynamics in green jobs* in the recent past (with 43% reporting no increase in green jobs), but more respondents (57%) expect green job increases in the future and only 10% do not expect an increase. Yet this expected increase in jobs could be frustrated by ***medium-to-high difficulties in finding green staff***. The most frequently mentioned business areas for green jobs are in ***planning/research & development*** and ***production of goods/provision of services***. Two-thirds of the respondents identified ***multiple business areas in which there are "green jobs"***.

The mixed picture persists with regard to environmental investments, which are spread across different and often concurrent types of investments in their business operations, including training. The ***most***

* By Kristina Culver and Concetta Rau (*Nomisma S.p.A.*)

common type of investment mentioned was in R&D for new products/services, followed by ***acquisition of machinery*** and ***technologies/software***. Among the most important factors in making a company undertake investments with environmental benefits is first of all that this is ***requested by the market and thus expected to increase revenues***, followed by ***improvement of the company's reputation***, and ***diffusion of environmental practices in the sector***. While only a limited number of respondents indicated that environmental investments were profitable, a somewhat larger share believes that ***they will be profitable in the future***.

Only 3 companies indicated having financed environmental investments through public incentives: regional incentives, European Funds or other (**Climate KIC Accelerator**). Indeed, some frustration was perceived in the responses, indicating that ***public incentives were not suitable for the company*** or that ***the application was not successful***. Others indicated that ***procedures were too complicated*** (Figure 4).

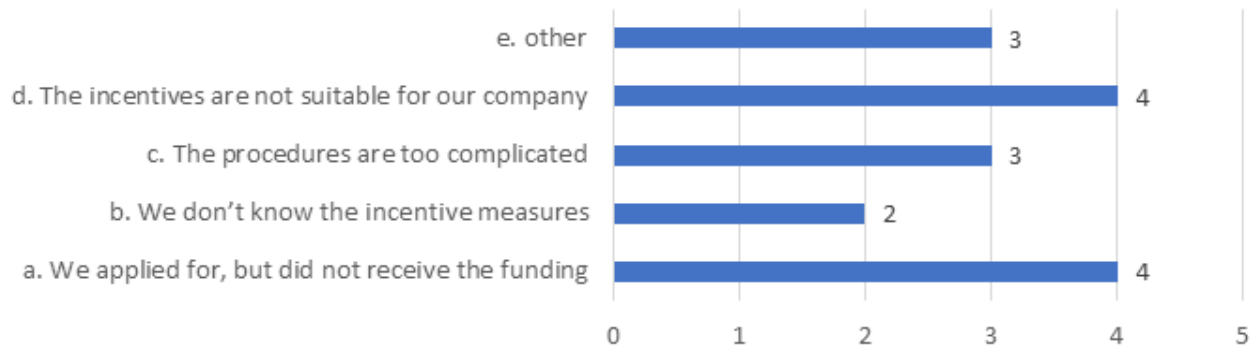

Figure 4. Reasons for not benefitting from public incentives for environmental investments

Difficulty in finding investment capital was identified by the largest number of respondents as a strong obstacle to environmental investments. This was followed by ***investment costs***. On the other hand, there were many medium-level obstacles indicated, beginning with *insufficient market demand* and *excessive costs of adapting processes* followed by *investment costs, difficulty to assess market demand, technical difficulties and low profitability*.

The most important factor external to the company that was seen to be able to stimulate investments in the green economy is ***public policies aimed at increasing awareness in the market.*** This is followed by ***incentives, legislative or regulatory changes*** and ***green public procurement*** (Figure 5).

In your opinion, which of these factors external to your company might be able to stimulate investments in the green economy?

Figure 5. Factors stimulating investments in the green economy

Most respondents indicated that they ***planned to make green investments in the future***. The companies that had not yet engaged in green economy investments indicated that they were not able to assess the benefits of such investments or they were not considered to be a company priority.

Recommendations and potential for improvement

Based on responses and comments made by survey participants the following conclusions can be drawn:

- A stronger role could be played by universities, which are heavily involved in spin-off activities, in ***strengthening the linkages between academia/research and business***, not only in ***providing trained graduates to work in companies***, but also in ***strengthening research and innovation cooperation in technical-scientific areas of companies that were not part of the spin-off community***.

- The public role could be strengthened by ***public policies aimed at increasing awareness in the market***, as well as ***incentives, legislative or regulatory changes*** and ***green public procurement*** in the territory. The public sector can play a leading role in ***leading by example*** and making ***investments allowing more sustainable consumption and mobility***, building ***green infrastructure***, engaging in ***green procurement*** from local companies and promoting ***public awareness of products and services that reduce environmental impact***. In order for incentives to have a concrete impact, they must be widely used and aimed at benefitting local businesses.

- *Business support structures* can also play a key role particularly in providing information, training and support in the application process for public funding/incentives.

5. Business survey - Sofia, Bulgaria*

Foundation Cleantech Bulgaria disseminated the survey on green business through the communication channel of Bulgarian Small and Medium-Sized Enterprises Promotion Agency and its own network of startups. The dissemination activities were performed between April 9th and 27th 2020 to more than 100 companies resulting in **31 responses** from both SMEs and startups. The respondents represent diverse sectors of economic activity from production to service, green and non-green technologies and traditional and innovative business niches. A bit more than half of the respondents represents micro enterprises (1-9 employees) with annual turnover below €500,000, 20% are small companies in terms of staff and turnover and around 10% are from medium-sized companies. Around 52% state increase in revenue and 29% state increase in staff.

In terms of support to the start-ups, **75% declare that the companies were set up without any support**, but 1/3 of these companies received support at a later stage. **Public sources of funding have insignificant role in supporting startups** with low rate of support received from incubators and accelerators. None of the respondents pointed to other EU opportunities for support such as EU programmes, Operational programmes and financial instruments. **Self-financing is the main instrument for starting up a business** (66.7%).

Turnover from green sales stays constant with variation of 2% for nearly 1/3 of the responses. The dynamics of green jobs is low as well as 54.5% state that **the number of green workers hasn't increased in the past 3 years**. On the contrary, 68.2% state that they **expect increase in the near future**. In addition, a total of 91% rate the level of **difficulty of finding green workers** as high or medium. The most frequently mentioned business areas for green workers are **Production operations, Technical areas, administration and Planning/R&D.**

In terms of green investments, **more than half of the respondents state that they have undertaken environmental investments** in the past 3 years related to acquisition of machinery (58.3%), adoption of practices and/or systems for more efficient consumption of energy and other resources (50%) and R&D for new products and services (66.7%). Trainings and acquisition of software are the least preferred in terms of investments.

When assessing the factors for undertaking investments with environmental benefits, the highest importance is put on requests from the market (in the perspective of Bulgarian companies, this is request

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from international markets mainly), high costs of energy, water and/or materials and diffusion of environmental practices in the respective sector. Improvement of the reputation of the company, available funding for environmental innovation and expectations of future environmental regulation and taxation show medium level of importance among the companies.

In terms of profitability of investments, the respondents have **high rate of satisfaction with their recent environmental investments** and express further positivity about the future profitability of such investments.

In terms of funding, 58.3% have used public sources and the operational programmes are with highest attribution among these. In exploring the barriers towards funding for environmental investments from public sources, 53.3% state that the **incentives are not suitable for the company**, 33.3% define the **procedures as too complicated** and 26.7% are impeded by high co-funding rate.

The companies identified investment costs and difficulties to find investment capital as the greatest obstacles to investments in the green economy. The difficulty to find qualified personnel in the market as well as difficulties of technological nature, low profitability and excessive costs of adapting processes are identified as obstacles of medium level.

When asked to assess the external factors that would stimulate the investments in the green economy, the most recognized are business supporting structures such as accelerators, incubators etc., legislative and regulatory changes, availability of initiatives and green public procurement and policies aimed at increasing awareness in the market.

More than half of the respondents stated that their companies have planned investments in the green economy

Conclusions and potential for improvement

Based on the qualitative analysis of the responses the following conclusions can be drawn-up:

- **More comprehensive working mechanisms for supporting the start-up and innovation ecosystem are needed** to enable more ideas with green focus to enter the market and to contribute to the shift to green economy.

- **Introduction of more instruments for start-up support** is needed in general to overcome the current set-up of starting up companies without any support. The role of EU instruments on

national level for supporting start-ups is currently negligible and so is the role of private sources of finance. Therefore, **EU instruments can be utilized in a more supportive way to target the start-up support specifically.**

- A shift towards more massive sales of green products and services (and threrefore shoft towards greening the business) can be achieved through the application of **instruments for increasing the demand for these goods on the market** which would result in companies redirecting themselves to this segment.

- The principles of green economy and how the business apply and contribute to it are still unclear for the companies. The rate of turnover from green products and services is still relatively low and the trend of selling more of these is changing slowly. Green jobs occupy traditional divisions of the company and are generally missing in divisions like Purchasing that can influence the value chain in a wider scale. Therefore, there is a need to distribute “green workers” more evenly in the company structure and within the value chain in order to miximise the impact on the whole system.

- Number of green jobs within a company is highly dependent on the start-up status as start-ups tend to have higher numbers of green jobs in their structures. The **establishment of a more diverse start-up ecosystem** is needed to improve the presence of green jobs in the labor market. Another possible approach could be to **switch traditional operations to more environmental-conscious ones** which would result in a demand for such professionals.

- Investments focus on traditional areas of intervention that can show immediate effect. Most probably this is related to the available funding for green innovation through diverse EU and international programmes. Potential for improvement is the **allocation of funding for capacity building** within the staff which is currently underestimated by the companies but can have positive effect on the formation of critical mass of employees with environmental competences and will therefore respond to the future need for such professionals and the potential for green innovation of companies.

- The Bulgarian companies are reactive rather than proactive to the undertaking of investments with environmental benefits responding to external factors and demands.

- **The enforcement of particular policies and taxation for environmental performance is crucial** for motivating companies to environmental investments. The **introduction of Green Public**

Procurement is another lever that is underused at the current stage and can lead to shift to more green innovations.

- The profitability and success of investments is evident to companies in the long-term and this is a promising factor for changing the mind-set of the business towards the outcome of these investments. Operational programmes seem to be the most recognized by the business when undertaking investments for green innovation and the remaining instrument are underestimated. Companies state that the currently available incentives are not suitable for the them and this implies that most probably the incentives need to be fine-tuned on national level to promote engagement of more companies.

- The challenge will be to **design easily-accessible instruments** for support and popularize other activities that can make **more companies apply and benefit** for them and maximize the impact of the variety of available funding.

- In general, there is vision among the companies about the potential in environmental investments and shift to green economy for their business operations, but they also identify external circumstances that need to be overcome in order to promote that shift. A complex **mixed approach of boosting the innovation ecosystem through business creation services, targeted initiatives suitable to the companies and regulatory changes including green public procurement are all necessary** for stimulating the investments of companies in the green economy.

6. Conclusions

The results of the survey implemented in the five partner regions of the GRESS project show that their green economy business ecosystems present several similarities, although some quite diverse peculiarities also occur. The need for the establishment of a more integrated, supportive and holistic ecosystem for green business development is particularly emphasized in the case of Piraeus (Greece) and in Bulgaria. Wider support in internationalization processes, network and further declination of strategies into policies is required in the West Pomeranian region (Poland) and in the Agder region (Norway), whereas a greater leadership of the public sector in fostering the green economy is needed in the Emilia-Romagna region (Italy). Also the role of private and public funding differs quite significantly among the regions. Whereas in West Pomeranian and Bulgaria most respondents mainly went through a full self-financing process for their business, in the Agder region and in Emilia-Romagna access to public and private financing played an important role in several cases. In the latter regions, several respondents also had access to external support services – incubators, acceleration programs or counselling – whereas only few respondents in the other regions reported this type of support experienced. This is also the case of the investment profitability in the green sectors expected by the respondents, which is considered quite low in all regions, except for the respondents in Bulgaria, which have a higher level of satisfaction with their investments and are more positive towards an increased profitability in the future.

Even if the survey in the five regions was not statistically representative, important insights may be grasped from this analysis that will help the partners design the next steps for improvement and support the green sector in their regions. In particular, it is interesting to notice that although each region has specific peculiarities, a number of common challenges, obstacles and drivers were identified by respondents throughout all partner regions. First of all, most respondents underlined that **private and public funding** is too few to support the development of new green start-ups and SMEs, which usually have to **self-finance** their business ideas. Access to public funding at all levels - regional, national and European – is considered very complicated, time-consuming and it requires high investment costs in terms of human resources, time and energy. **Complicated application and administration procedures** discourage applicants in all regions from submitting project ideas and high competition and selection criteria also prevented several respondents from getting funded. In this sense, the survey shows the need of the green enterprises for more support services in the application phase or in designing more competitive business project ideas. **Process simplification** and **institutions providing support to green business** are considered a driver in all regions, indeed.

As regards the green jobs, they are expected to increase in the future by respondents in all regions. However, **recruitment of green qualified and highly-skilled employees** is considered a huge challenge for green businesses at the present moment. In this framework, universities are seen as important actors which can provide not only specific courses, trainings and scientific skills, rather they can have a role in

strengthening research and innovation cooperation in technical-scientific areas of companies that were not part of the spin-off community and building a community of entrepreneurs with an innovative mindset.

Another key element mentioned by respondents as key driver is the development of **public policies aiming at increasing awareness** in the market and in the whole sector. The **diffusion of good practices** in the whole sector is considered by green enterprises to encourage enterprises to invest in the green economy. Moreover, significant obstacles are encountered by green enterprises in all regions in affording green **investment and adaptation costs**, as well in **assessing the market** (especially in Agder and Emilia-Romagna regions). This becomes even more crucial when taking into account that green enterprises consider **insufficient market demand** as a huge obstacle in encouraging enterprises in investing in the green economy. Finally, respondents confirmed that the public sector must play an important role in this sense and take the lead through improving **green public procedures**, increasing awareness of the consumers and of the whole value-chain, as well as applying **legislative, regulatory changes** and providing more specific **incentives** for green businesses and the recruitment of highly-skilled green workers.

Annex

Annex 1. Survey template (English)

A. THE COMPANY CONTEXT

1. **Company name** _____
2. **Sector(s) of business activity:**
   _____
3. **Person filling out the questionnaire**
   - **Position** _____
4. **Year of establishment** _____
5. **Do you consider your company to be a startup?**[3] Yes □ No □
6. **Do you consider your company to be an SME?**[4] Yes □ No □
7. **Number of employees in the company**
   - 1-9
   - 10-49
   - 50-249
   - 250+
8. **Turnover last year (in euros)**
   - < €500,000
   - €500,000 - €2 million
   - €2 – 10 million
   - €10 – 50 million
   - >€50 million
   - Not applicable
9. **Performance of the company last year compared to the previous year**

a.	Increase in Turnover	Yes □	No □	Not applicable □
b.	Increase in Turnover from abroad	Yes □	No □	Not applicable □
c.	Increase in the number of persons employed	Yes □	No □	Not applicable □

B. QUESTIONS FOR BUSINESSES IDENTIFIED AS STARTUPS

[3] Companies that have been newly set up and operating for a limited number of years, usually less than 5 years. The term startup is often associated with dynamic technology companies, but a startup can be any type of business and does not necessarily have to have outside investors. According to Startups.co (UK online platform for startup advice), one of the key differences between a startup and a small business is that a startup has an idea that can be applied and marketed globally (https://startups.co.uk/what-is-a-startup/). In contrast, a small business is tied to a particular location or market.

[4] According to the EU definition, small and medium-sized enterprises (SMEs) are businesses with fewer than 250 employees and a turnover of less than €50 million or a balance sheet total of up to €43 million.

[answer questions 10-12 if you have responded "yes" to question 5, otherwise go to question 13]

10. **Startup with Green[5] focus**
    a. The company was set up with a "green" focus from the beginning □
    b. The company was set up to focus on a technology which also happens to have a "green" impact □
    c. The company moved into "green" activities at a later stage after it saw opportunities in this area □
    d. The company started with a "green" focus, but now is working in other areas □
    e. The company started up working in both "green" and other areas □

11. **Startup support**
    a. The company was a spin-off[6] from university/research institute activities □
    b. The company was supported by a startup incubator □
    c. The company was started up without any support structure □
    d. The company was started up by an existing firm to address new business areas □

12. **Startup funding [***multiple responses possible]*
    a. The company received startup funding support from public sources or programmes:
        ○ European programmes: COSME, Horizon 2020 (including SME instrument), LIFE □
        ○ Climate-KIC Accelerator □
        ○ Regional funding (ERDF or EARDF) □
        ○ Local or Metropolitan area funding □
        ○ University startup programme □
        ○ Other □
    b. The company received startup financial support from private sources:
        ○ Bank loan □
        ○ Venture capital □
        ○ Crowd funding □
        ○ Individual investors □
        ○ Self-financed □

C. CHARACTERISTICS OF THE COMPANY: GREEN OR NON-GREEN

13. **Is it part of the Green economy[7]? [***multiple responses possible]*
    a. It belongs to a sector that provides an environmental service □
    b. It produces energy from renewable sources □
    c. It has an environmental process certificate □

[5] A green startup is a startup that works within the green economy, defined as "one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. It is low carbon, resource efficient, and socially inclusive" (UNEP, 2011).
[6] A company set up to pursue business activities based on research or a project developed by a university/research institute.
[7] The green economy is defined as "one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. It is low carbon, resource efficient, and socially inclusive" (UNEP, 2011).

d. In the last three years, it has implemented innovative processes that allow for a reduction of resource and energy consumption within the company or a reduction of emissions and wastes □
e. It has implemented or uses a logistics system that allows reducing environmental impacts linked to transport □
f. It produces goods/provides services that allow the user to reduce consumption, decrease emissions and/or wastes or other environmental impacts □
g. It produces goods that contain parts/components with a lower environmental impact (or produces such parts/components) □
h. Its activity involves the conservation of natural resources, e.g. organic agriculture, land management, soil management, wildlife conservation, etc. □
i. It produces products/provides services that have an environmental certification □
j. It engages in other activities that lead you to think that your company is part of the green economy (specify) □_____

[*if none of the above, go to question 28]*

14. **What is the estimated share of revenues due to green sales out of total turnover?** obligatory
    - Less than 10%
    - Between 10% and 25%
    - Between 26% and 50%
    - Between 51% and 75%
    - More than 75%
    - Don't know

15. **How much did revenues due to green sales change in the last three years?**
    - Stayed more or less the same (less than 2% variation either way)
    - Increased between 2% and 10% □
    - Increased between 10% and 25% □
    - Increased more than 25% □
    - Decreased □
    - Don't know □

16. **In which of the following business areas do staff with environmental tasks, characteristics or competences work ("green jobs"[8])** (multiple responses possible)
    - Logistics
    - Production of goods/provision of services
    - Purchasing office
    - Sales and customer assistance
    - Administration
    - Headquarters and general services
    - Marketing and communication
    - Technical area
    - Planning/research and development
    - Other (specify: _____)

[8] According UNEP (2008), green jobs are defined as work in agricultural, manufacturing, research and development (R&D), administrative, and service activities that contribute substantially to preserving or restoring environmental quality. Specifically, but not exclusively, this includes jobs that help to protect ecosystems and biodiversity; reduce energy, materials, and water consumption through high efficiency strategies; decarbonise the economy; and minimise or altogether avoid generation of all forms of waste and pollution.

- Don't know

17. **Indicate the % share of "green jobs" [6] out of total staff:** obligatory
    - Less than 10%
    - Between 10% and 25%
    - Between 26% and 50%
    - Between 51% and 75%
    - More than 75%
    - Don't know

18. **In the last 3 years, has the number of "green jobs" [6] compared to total staff gone up?**
    - Yes
    - No
    - Don't know

19. **Do you expect an increase in the number of "green jobs" [6] in the near future?**
    - Yes
    - No

20. **What level of difficulty do you face in finding the green[6] workers that are needed by your company?**
    - High
    - Medium
    - Low

21. **Has your company undertaken any environmental investments[9] in the last three years?**
    - Yes
    - No

    (if no, go to question 28)

22. **What types of investments were made?** *[indicate one or more responses]*
    a. Acquisition of machinery
    b. Acquisition of technologies and/or software
    c. Adoption of practices and/or systems for more efficient consumption of energy and/or other resources (water, materials, etc.)
    d. R&D for new products/services
    e. Training
    f. Other (Specify_____)

23. **How relevant were the following factors in making your company undertake investments with environmental benefits?**

	High level of importance	Medium level of importance	Low level of importance	No importance
a. *Improvement of the reputation of the company*				

[9] In the context of this survey, environmental investments are investments aimed at climate change mitigation and/or adaptation, pollution prevention and control, water purification and conservation, ecologically sound waste disposal, energy efficiency (including in buildings and processes), renewable energy, resource efficiency, reuse and recycling of materials, biodiversity preservation, soil remediation, and less polluting forms of transport and logistics.

b. *Current environmental legislation*				
c. *High costs of energy, water and/or materials*				
d. *Requested by the market and thus expected to increase revenues*				
e. *Diffusion of environmental practices in the sector*				
f. *Financing for environmental innovations*				
g. *Expectations of future environmental regulations or taxation*				
h. *Existing environmental taxes or fees*				
i. *Need to comply with public procurement requirements*				
j. *Other (Specify_____)*				

24. Have the environmental investments made been profitable?

a. Yes
b. No, but in the future, it is probable that they will be
c. No, but in the future, it is certain that they will be
d. No
e. Don't know

25. Were the environmental investments also financed through public incentives?

○ Yes
○ No

(if no, go to question 27

26. What type? *[indicate one or more responses]*

a. Regional incentives
b. National incentives
c. European Funds (Horizon 2020, LIFE, COSME, Interreg Central Europe, etc.) (Specify_____)
d. Subsidised EIB loans with a guarantee from the European Fund for Strategic Investments (EFSI)
e. Other (Specify _____)

27. If your company has not benefited from public incentives for green investments, what are the reasons for this? *[indicate one or more responses]*

a. We applied for, but did not receive the funding
b. We don't know the incentive measures
c. The procedures are too complicated
d. The incentives are not suitable for our company
e. Requirement for co-funding
f. Other (Specify_____)

28. In your opinion, which of these factors external to your company might be able to stimulate investments in the green economy? *[indicate one or more responses]*

a. Incentives (Specify_____)
b. Public policies aimed at increasing awareness in the market
c. Business support structures (accelerators, incubators, technological networks, also to stimulate "match-making")
d. *Green public procurement* in the territory
e. Legislative or regulatory changes (Specify_____)
f. Other (Specify _____)

29. **In your opinion, which of the following factors act as obstacles to investments in the green economy?**

	Strong obstacle	Medium level obstacle	Low level obstacle	Not an obstacle
a. *Investment costs*				
b. *Difficulty to find qualified personnel in the market*				
c. *Lack of qualified personnel within the company*				
d. *Lack of technical-scientific knowledge within the company*				
e. *Insufficient market demand*				
f. *Difficulty to assess market demand*				
g. *Excessive costs of adapting processes*				
h. *Difficulty to find investment capital*				
i. *Low profitability*				
j. *Difficulty of a technological nature*				
k. *Other (Specify_____)*				

30. **Has the company planned investments in the green economy?**
- Yes
- No
- Don't know

31. **ONLY FOR NON-GREEN BUSINESSES For which of the following reasons has the company not made investments in the green economy?**
a. High costs
b. Insufficient competences
c. We are not able to assess the benefits
d. They are not considered to be a company priority
e. Other (Specify _____)

32. **FOR ALL BUSINESSES Would you like to provide any suggestions for improving public support to promote the green economy?**

_____
_____
_____
_____