

NATIONAL SWOT ANALYSIS ON ECO- INNOVATION – GERMANY



WP3	Strategy for eco-knowledge
ACTIVITY 3.2	Analysing the environment for ecoinnovation in partner countries
DELIVERABLE 3.2.4	National SWOT analysis on Eco-innovation

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Author	ERDF PP4 bwcon GmbH
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1. SWOT analysis: National (governmental) perspective

Internal factors	
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<p>STRENGTHS</p> <ul style="list-style-type: none"> • What are your countries strengths? • What do you do better than others? • What unique capabilities and resources do you possess? • What do others perceive as your national strengths? <p>According to the European Innovation Scoreboard, Germany belongs to the Innovation Leaders. Innovation leaders have an attractive research system, qualified human resources and a good presence of innovators. The country is highly export-oriented with a strong manufacturing industry and well established eco-innovation areas and markets. The GDP per capita is high and so is the number of innovative enterprises.</p> <p>The Country Report Germany of the Global Entrepreneurship Monitor (GEM) states that Germany performs extremely well in the following framework conditions for start-ups:</p> <ul style="list-style-type: none"> • physical infrastructure • appreciation of new products / services from the consumer's point of view • public funding programs • protection of intellectual property (e.g. patents) • consultants and suppliers for companies <p>The KfW Bankengruppe, the nationally operating development bank of the Federal Republic of Germany, makes available a number of different financing tools such as promotional loan programs, mezzanine financing, and private equity to all privately owned commercial enterprises. The Government offers also risk capital for young, promising technology companies in all sectors managed by the Hightech Gründerfonds, Germany's biggest seed investors. Additional there are incentive as tax refund, public guarantees and labour related incentives which all in all create a positive environment for the development of companies.</p>	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • What are your countries weaknesses? • What do innovation leaders do better than you? • What can you improve given the current situation? • What do others perceive as your countries weaknesses? <p>Even if there are already several support structure in place to promote energy efficiency and the adoption of renewable energies, the requirements and potentials of the environmental sustainability are still not much integrated in the German startups support system.</p> <p>The main weaknesses in the ecoinnovation field are the improvement of school and extracurricular start-up training, the commitment of politicians and a reduction in regulation and taxes.</p> <p>Also, as shown by a survey commissioned by digital association Bitkom, a majority of start-up founders still has bureaucratic hurdles while starting a business, and experience difficulties in finding financing and staff.</p>

<p>Another field where the German Federal Government provides support are R&D grants. Annually 5 billion Euro are dedicated to R&D project in the form of non-repayable project grants.</p> <p>In 2015, Germany scored above the EU-28 average in regards to the four of the five components of the Eco-innovation composite index (ecoinnovation activities, eco-innovation inputs, eco-innovation outputs and resource efficiency outcomes). It is particularly remarkable for the indicator on government investments in environmental and energy R&D, total R&D personnel and green early stage investments.</p> <p>Nowadays the Green Economy is considered in Germany a very promising future market that will double in the next ten years. For this reason, there are already several support structure in place to promote energy efficiency and the adoption of renewable energies.</p> <p>This trend has been driven by legal measures, such as the Renewable Energy Sources Act (EEG) which requires producers of electricity to give priority to renewable energy sources when buying and distributing electricity.</p> <p>Energy efficiency is the twin pillar of the energy transition and constitute a major component of the investment strategy for Germany. The National Action Plan on Energy Efficiency (NAPE) contains a set of instruments designed to motivate companies and consumers to raise energy efficiency: from consultancy, to communication and information about lucrative efficiency measures, up to funding facilities and standards for new installation</p> <p>To ensure the successful implementation of energy efficiency measures, advisory services are complemented with financial incentives, in order to enable the end consumer to adopt the suggested measures. Also in this case, Germany has already set up several programs in various field of applications (as the building and transport sector).</p>	
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External factors	
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OPPORTUNITIES	THREATS

- What trends or conditions may positively impact your country?
- What opportunities are available to your country?

According to the German Federal Ministry for Economic Affairs and Energy, the country is continuing to integrate renewable energy into the electricity market, creating the electricity market 2.0 – a market fit for integrating a growing share of renewables.

The share of renewable energy consumption in the final energy consumption in Germany has been constantly growing from 2008 to 2015.

The use of renewable energy has many potential benefits, including a reduction in greenhouse gas emissions and a reduced dependency on fossil fuel markets (in particular, oil and gas) which still is a problem Germany is facing.

The Federal Government is campaigning for the reduction of subsidies for fossil fuels in order to create a fair competitive environment for all energy sources.

The good recycling rate and the development of technology for the waste management surely constitutes a positive signal for Germany. Nonetheless, to achieve even better results Germany should still invest more in product responsibility, the practice according to which waste is best prevented by holding the generator of waste responsible, so to reduce the waste that is generated with the production and distribution of products.

- What trends or conditions may negatively impact your country?
- What are your competitors doing that may impact your country?
- Does your country have solid financial support?

Despite all the efforts Germany is investing in the energy transition, greenhouses emission per capita remain high constituting a threat for public health. Many cities in Germany still register high level of air pollution. A report published by the German Environment Ministry in 2013 showed that levels for air pollutants are being exceeded in many parts of the country.

Another environmental threat that the country is facing is the one related to the use of areas for settlement and transport purposes.

Additionally, to be able to be a resource-efficient economy, Germany will need to secure even more a supply of sustainably produced regenerative resources that does not compete with food production.

Although pollution of watercourses has decreased, more needs to be done with regard to some persistent pollutants, heavy metals, pesticides and medicinal products.

Roughly half of the phosphorous entering flowing water in Germany today comes from agriculture, and the other half originates from cities (municipal water treatment plants and rainwater run-offs). In addition to nitrate pollution, it is one of the causes of an oversupply of nutrients (eutrophication) in rivers, lakes and seas.

Even if the overall waste management is performing very well, the recycle of e-waste in Germany is still too low compared to the always increasing use and diffusion of electronic devices. Adequate measure should therefore be adopted in time to prevent electronic waste to be generated and consequently dispersed in the environment. There is a need to increase the repair and re-used of older devices and to raise consumers' awareness on ethical and environmental sustainable shopping attitude.

Finally, an additional threat for Germany's economy is coming from the declining population trend, which in the future might slow down considerably the country's production potential.

2. SWOT analysis: National business perspective

Internal factors	
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<p>STRENGTHS</p> <ul style="list-style-type: none"> • What are your identified strengths of companies operating on the national level? • What do you do better than others? • What unique capabilities and resources do you possess? • What do others perceive as your companies strengths? <p>In Germany, more and more incubators or similar programs are operated or supported by large corporations. They are very much interested in making startup a success in their favor - in order to create products or services for their own customers or to create a lucrative takeover candidate. Another much diffused form of open innovation for companies are Hackathons.</p> <p>Germany belongs to the top performer for indicators on company participation in eco-innovation for both material and energy efficiency activities. In a European comparison, start-up activities in Germany are leaders in the area of energy transition and climate protection and close overall to leading European cleantech countries such as Sweden.</p> <p>The country is also one of the world leaders when it comes to climate protection and expanding the use of renewable energy. Furthermore, Germany has made of waste management an important technology sector and it has the highest waste recovery quotas worldwide.</p>	<p>WEAKNESSES</p> <ul style="list-style-type: none"> • What are the weaknesses of companies operating on the national level? • What do innovation leaders do better than? • What can be improved given the current situation? • What do others perceive as your companies weaknesses? <p>Till 2014 there were not specific funding programmes for startups in the Green Economy and only a few startups competitions targeting specifically green startups. Also the number of incubators specifically dedicated to green startups are still a niche considering the great amount of incubators and accelerators program which has seen a great raise in the last years in Germany.</p> <p>Considering the particular case of green startups, the amount invested so far in the Green Economy in Germany is still rather small. The money invested according to environmental and social sustainability criteria still only makes up around 10% of risk investments and direct investments.</p> <p>In general, climate protection and sustainability requirements are still very marginally integrated in the German startups support system. In this respect, it is possible to notice a discrepancy between the sustainability strategy of the German Federal Government and the actions concretely undertaken to support the foundation of sustainable and ecoinnovative startups.</p> <p>While the government financial support is already quite developed in Germany, there is instead a lack of venture and risk capital, especially for startups in later stages of growth. This is partly due to the small number of domestic investors.</p>

External factors	
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<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> • What trends or conditions may positively impact your national companies? • What opportunities are available to your national companies? <p>Despite not received a large amount of dedicated funding as other sectors, the number of companies' foundation in the green sector has kept on growing in Germany in the last years, a factor which is even more encouraging considering that the overall number of companies' foundation in all sectors has instead decreased constantly.</p> <p>In regards to EcoInnovation, there are anyway several funding programmes provided at European level.</p> <p>The share of start-ups with financing difficulties has fallen by a quarter to 15%. In 2015, only 4% of founders were denied bank credit.</p> <p>Germany has a very strong vocational education and training system, also known as the dual training system. This system consists of a combination of theory and training embedded in a real-life work environment and at its core there is the cooperation between mainly SMEs and publicly funded vocational school which is regulated by law.</p> <p>The dual training system in Germany has contributed to low youth unemployment rate and to the delivery of market relevant skills and will definitely represents an opportunity for the country also in the future.</p> <p>The supporting system for entrepreneurs is very well developed. Startups have the opportunity to receive funding and visibility thanks to 163 startups competition (in 2016), 70 of which dedicated to the development of new ideas.</p> <p>Many corporate as Mercedes, BWM and Bosch have created their own accelerator programs to support the creation of startups in their field. Corporate use them as a way to acquire and integrate innovation from the outside.</p> <p>Opportunities for Germany companies in the ecoinnovation field comes also from the policy framework. All measures defined in NAPE stress the fact that raising energy efficiency can also imply market and profit opportunities for companies: these in fact can reduce their production costs by saving energy costs, thus increasing their competitiveness.</p>	<p>THREATS</p> <ul style="list-style-type: none"> • What trends or conditions may negatively impact your national companies? • What are your competitors doing that may impact your national companies? • Do you have solid financial support? <p>Despite the ongoing shift toward renewable energies, Germany is still highly dependent on imports of fossil fuels (oil, coal and gas) for its energy needs. The large industrial sector – combined with EU' largest population – contribute to Germany's higher than EU and Danube region averages energy requirements. While the Energy Transition plan is actively contributing in reshaping the country's energy trade balance, Germany is still heavily dependent on third-parties countries (namely Russia) for its energy needs. The advance industry sector with its many high-techs products requires also a reliable availability of raw materials. This make the country extremely dependents on imports of metals and many key industrial minerals.</p> <p>In introducing an environmentally compatible, extensive and climate neutral energy supply also the commerce and industry have a significant role to play. The data available shows that the energy transition will only succeed in Germany if the industry and other big players will significantly expand their investments in energy efficiency and renewable in the future, along with private households.</p> <p>Another threat comes from the lower investment in innovation expenditure and the decreasing innovation intensity in the German SMEs in the last years. In 2016 Germany was performing less well than other innovation leaders on the human resources dimension as well for what concern the research system and innovation-friendly environment.</p>

