A stakeholder's view on the creation of a sustainable energy-flagship region within the LEADER-region Nationalpark Hohe Tauern

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Submitted to Dr. Sabine Sedlacek

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AFFIDAVIT

I hereby affirm that this Master's Thesis represents my own written work and that I have used no sources and aids other than those indicated. All passages quoted from publications or paraphrased from these sources are properly cited and attributed.

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ABSTRACT

Lately, the Alps increasingly face challenges due to different economic, social and environmental developments, and have to find new ways to stay competitive and counteract the consequences of climate change. The Federal Ministry of Transport, Innovation and Technology and the Klima- und Energiefonds recognised the importance of sustainable development and created the funding programme "Energie Vorzeigeregion" – energy-flagship region – with the goal to introduce new and innovative energy technologies in Austria and to test them in a geographically restricted area. Considering the characteristics of the Alps, an energy-flagship region would be a great fit, especially as winter tourism is responsible for a major energy consumption. Making Alpine regions more sustainable will contribute to environmental protection and preservation, a compatible economic development as well as increase the quality of life for the region's residents and tourists.

In light of that, the Austrian Institute of Technology works in cooperation with Modul University Vienna and Energy Changes on the project "Vorzeigeregion Tourismus – Energietechnologien & Innovationen Leben!" to target these challenges and to create an energy-flagship region in the tourism sector and an applied laboratory for innovations in the LEADER-region Nationalpark Hohe Tauern.

So far, there has been no information available about the acceptance and commitment of the stakeholders to create a sustainable energy-flagship region in the LEADER-region Nationalpark Hohe Tauern. Hence, the guiding research question was formulated as "How do potential stakeholders imagine a sustainable energy-flagship region and what are they willing to do to achieve it?".

The interview participants agreed that the energy-flagship region needs to include the three components environmentally friendly mobility, awareness raising and education as well as destination marketing and image. When multiple stakeholders are involved in a process, it is likely to encounter a conflict of interest due to different organizational interests, motivations and internal agendas; therefore, the other potential elements have shown a broad variance in terms of importance. However, even though the general attitude towards an energy-flagship region is positive, the commitment of the stakeholders is low. The stakeholders attribute a higher priority to the implementation at the regional level, which shows that the responsibilities are pushed away. In addition to that, the areas of contribution that are mentioned by the stakeholders highly overlap with their jobs and functions.

A stakeholder graph that depicts the attributes power, urgency and legitimacy has been developed to illustrate the view of the participants in regards to the regional stakeholders that are involved or affected by the development of an energy-flagship region.

After discussing the results of the analysis and the implications, recommendations are developed to overcome the challenges and enhance the regional stakeholders' commitment.

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LIST OF ABBREVIATIONS

BMLFUW	Bundesministerium für Land- und Forstwirtschaft, Umwelt- und Wasserwirtschaft
°C	Celsius
CSR	Corporate Social Responsibility
eg	exempli gratia (lat.: for example)
etc.	et cetera
EU	European Union
GmbH	Gesellschaft mit beschränkter Haftung
NP HT	Nationalpark Hohe Tauern
PTS	Public transportation system
SME	Small and medium sized enterprise
SWOT	Strength, Weakness, Opportunities and Threats
UNEP	United Nations Environmet Programme
UNWTO	United Nations World Tourism Organization
USP	Unique selling proposition
WCED	United Nations World Commission on Environment and Development

1 INTRODUCTION

The Alps are a mountain system that is located in central Europe and stretches from the Mediterranean Sea of France and Italy to Austria (CIPRA Österreich, 2016; European Environment Agency, 2016a; as can be seen in Figure 1). CIPRA Österreich (2016) reports that Austria is considered as one of the big Alpine countries since about 65% of its land is covered by the Alps. Especially, provinces in the west are characterized by this particular mountain system (CIPRA Österreich, 2016).

FIGURE 1: THE EUROPEAN ALPS (SOURCE: EUROPEAN ENVIRONMENT AGENCY, 2016A)

This fact makes it apparent that the Alps have a major influence on ecological, social, economic and cultural aspects in Austria (Permanent Secretariat of the Alpine Convention, 2015). However, lately, the Alps are facing challenges through "demographic change, international economic competition, climate change, energy supply, difficult access, limited welfare and social infrastructure" (Permanent Secretariat of the Alpine Convention, 2011, p. 24). According to the Permanent Secretariat of the Alpine Convention (2011), the Alps are especially sensitive to climate change. The Alps are an ecologically highly sensitive ecosystem and provide Austria's residents with water, high quality food, timber and energy. Not only the biodiversity and environment suffer from climate change, but also the economic development (Permanent Secretariat of the Alpine Convention, 2011, 2013). Most Alpine regions depend on flourishing

tourism, since it is the major income source (Permanent Secretariat of the Alpine Convention, 2013; BMLFUW, 2016). But especially, winter tourism has suffered from the consequences of climate change due to decreasing precipitation, declining snow covers and retreating glaciers (Permanent Secretariat of the Alpine Convention, 2013). As can be seen in Figure 2, currently, there are 426 ski resorts in Austria that reach up to an altitude of 3440 m (Skiresort Service International GmbH, 2016). The 10 highest ski resorts are marked in Figure 2 as well. The Skiresort Service International GmbH (2016) calculated a total of 7259,4 km of slopes, with the largest ski resort having 305 km of slopes. Moreover, the total number of ski lifts in Austria, according to the Skiresort Service International GmbH (2016), is 2578.
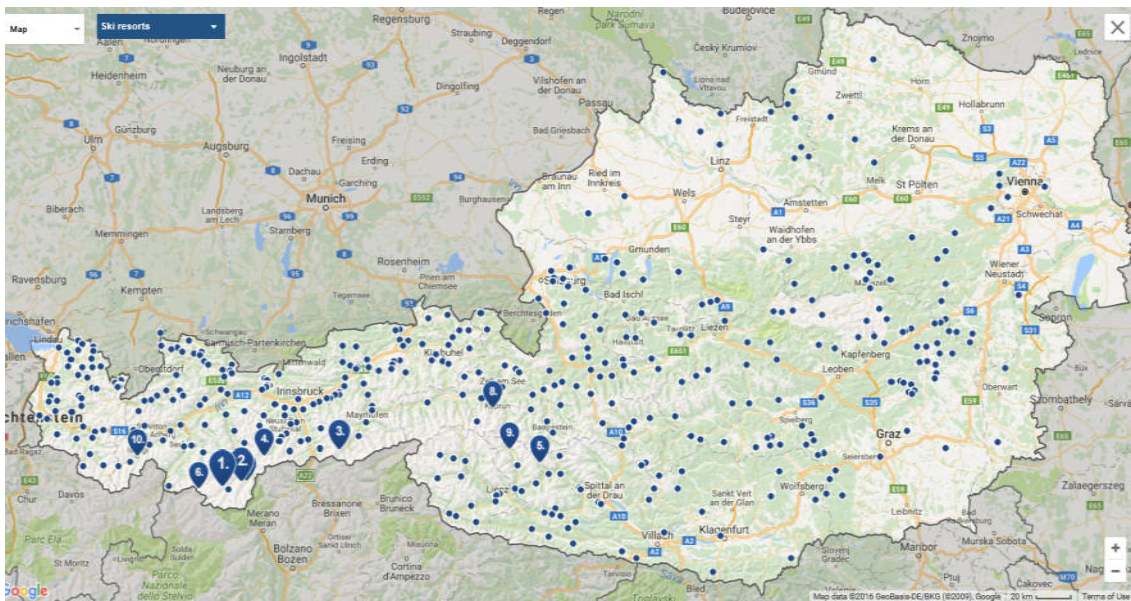
FIGURE 2: SKI RESORTS IN AUSTRIA (HTTP://WWW.SKIRESORT.INFO/SKI-RESORTS/AUSTRIA/)

These facts emphasize that tourism is, in most Alpine areas, the driving force of the economy, and in some even the only one that creates jobs and assists in local development (Permanent Secretariat of the Alpine Convention, 2013). If so, tourism is the anchor that keeps residents from moving into cities (Permanent Secretariat of the Alpine Convention, 2013). Therefore, the Permanent Secretariat of the Alpine Convention (2013) underlines the importance of making these tourism regions more resilient through sustainable development and innovation to adapt to new circumstances.

Considering the need for action and innovation, the Alpine regions could be pioneers in creating a smart, sustainable and inclusive economy according to the EU 2020 goals (Permanent Secretariat of the Alpine Convention, 2011). Potentials primarily exist in the fields of education and awareness raising, low-carbon measures, green technologies, smart electricity grids and environmental protection (Permanent Secretariat of the Alpine Convention, 2011).

Against the background of the Alps' characteristics and the abovementioned development fields, it would be suitable and beneficial to pursue rural development strategies in the field of energy efficiency and self-sufficiency.

In light of that, the Austrian Institute of Technology works in cooperation with Modul University Vienna and Mitplan GesmbH on the project "Vorzeigeregion Tourismus – Energietechnologien & Innovationen Leben!" to target these challenges and to create an energy-flagship region in the tourism sector and an applied laboratory for innovations in the LEADER-region Nationalpark Hohe Tauern.

The project "Vorzeigeregion Tourismus – Energietechnologien & Innovationen Leben!" – short, energy-flagship region in English – is a federal funding programme that aims for developing and demonstrating intelligent, safe, well-developed and affordable energy and mobility concepts within a geographically restricted area in Austria (Klima- und Energiefonds, 2015).

The LEADER-region Nationalpark Hohe Tauern, consisting of 21 municipalities, is a popular tourism destination and attracts a massive number of tourists every year (LEADER-Region Nationalpark Hohe Tauern, 2016). This region depends mainly on winter (skiing) tourism. Lately, it has been facing challenges like decreased snowfall due to climate change, increased energy costs and use to create and maintain suitable snow conditions on the slopes and improvement of touristic offers to stay competitive (LEADER-Region Nationalpark Hohe Tauern, 2016; Permanent Secretariat of the Alpine Convention, 2013).

Yet, unfortunately, there is no information available about the acceptance and commitment of the stakeholders to create a sustainable energy-flagship region in the LEADER-region Nationalpark Hohe Tauern. Hence, the aim of this thesis is to explore in-depth the acceptance and commitment of potential stakeholders, to create and develop recommendations for creating an energy-flagship region according to the stakeholder perspectives. The guiding research question was, therefore, formulated as "How do potential stakeholders imagine a sustainable energy-flagship region and what are they willing to do to achieve it?".

Being a flagship region would provide the LEADER-region Nationalpark Hohe Tauern with a competitive advantage, potential international attention and another income source apart from winter tourism. Using more sustainable and environmentally friendly practices would also result in an ecological relief.

The first part of the thesis will assess information about the LEADER-region Nationalpark Hohe Tauern to provide insights into demographics, population density, migration levels, and main economic sectors. After that and based on literature, a SWOT (Strength, Weakness, Opportunities and Threats) analysis will be developed.

The second section, the "Literature Review", will explore literature about the Alps and elaborate on the challenges that Alpine regions are facing. As an approach to counteract these challenges and to strive for innovation, different concepts of energy-flagship region within German-speaking countries are then introduced. Afterwards, the Austrian concept of an energy-flagship region and what it stands for will be explained and presented. Last but not least, sustainable tourism principles will be discussed since the LEADER-region Nationalpark Hohe Tauern mainly depends on tourism and is generally a touristic area.

The third part will describe the methodology of the research process. Creating an energy-flagship region is only possible if all stakeholders are committed to the project. Commitment, in this case, refers to a positive motivation to create an energy-flagship region and the willingness to contribute to the development and, later, the implementation process. So, as this assumption and the research question already imply, the research design is based on the stakeholder theory. As a first step, the hypothesis development will be described. A conceptual framework will be developed on the basis of observations of two stakeholder workshops within the study region, as well as literature, to aid in the development of the hypothesis. The hypothesis will be briefly described before explaining the stakeholder theory thoroughly. Finally, this chapter will conclude by outlining the process of conducting a stakeholder analysis, including the sampling process and the data collection through in-depth interviews to examine the acceptance and commitment to developing an energy-flagship region.

The fourth part will present the results of the empirical research to answer the research question and provide details on what components have to be included in an energy-flagship region and what the stakeholders are willing to do within its development and management processes of an energy-flagship region, such that recommendations can be developed and described in the last section of this thesis.

2 THE STUDY REGION LEADER-REGION NATIONALPARK HOHE TAUERN

The LEADER-region Nationalpark Hohe Tauern is composed of 21 municipalities from the districts Pinzgau, Pongau and Lungau and is one of the remotest inner Alpine regions in the mountains of Salzburg, as can be seen in Figure 3 (LEADER-Region Nationalpark Hohe Tauern, 2015, 2016).
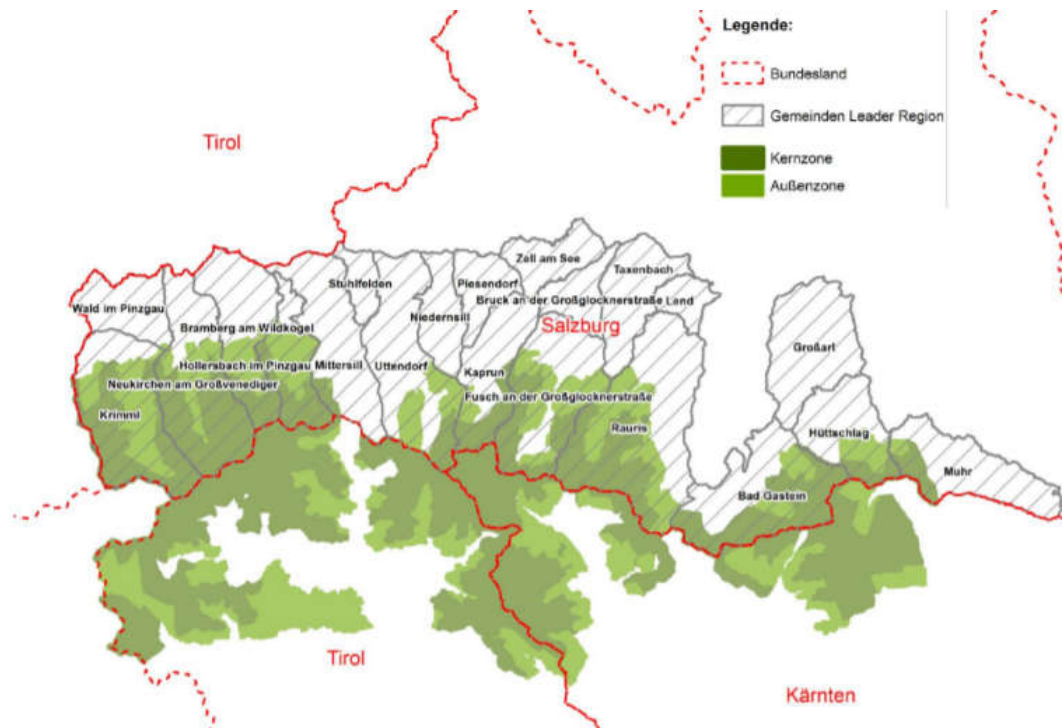
FIGURE 3: LEADER-REGION NATIONALPARK HOHE TAUERN (LEADER-REGION NATIONALPARK HOHE TAUERN, 2015)

The 21 municipalities are (LEADER-Region Nationalpark Hohe Tauern, 2015, 2016):

- Wald im Pinzgau
- Krimml
- Neukirchen am Großvenediger
- Bramberg am Wildkogel
- Hollersbach im Pinzgau
- Mittersill
- Stuhlfelden
- Uttendorf
- Niedernsill
- Piesendorf
- Kaprun

- Zell am See
- Bruck an der Großglocknerstraße
- Fusch an der Großglocknerstraße
- Taxenbach
- Rauris
- Lend
- Bad Gastein
- Grossarl
- Hüttschlag
- Muhr

This area is described as rural and is characterized by a unilateral employment structure, strong deficits in job offers, brain drain, large number of commuters and limited accessibility through public transportation services (LEADER-Region Nationalpark Hohe Tauern, 2015). Nevertheless, the LEADER-Region Nationalpark Hohe Tauern is highly touristic and, especially, the winter tourism is booming (LEADER-Region Nationalpark Hohe Tauern, 2015).

2.1 Demographics

When evaluating a region, it is not only essential to evaluate its economy, the environment and the state of development, but information about people living in this area has to be gathered too (Hayes, 2015). This specifically refers to implications of the male vs female ratio, educational attainment, issues related to the age distribution (such as aging population and declining birth rate), and the composition of the workforce in terms of nationality (Hayes, 2015).

The data presented in chapter 2.1.2 onwards is based on the latest data release from Statistik Austria from the year 2014.

2.1.1 Residents of the LEADER-region Nationalpark Hohe Tauern

Data from Statistik Austria (2016) shows that about 60,000 residents lived in the LEADER-region Nationalpark Hohe Tauern in 2016, which means about 26 residents per km². This number is significantly lower than the national average of 104 residents per km² of the same year (Wirtschaftskammer Österreich, 2017).

However, as Table 1 illustrates, the number of residents has decreased overall in 2016 since the year 2001. The main reasons for this development are a high rate of migration and a decreasing birth rate compared to previous years (Statistik Austria, 2016). The LEADER-Region Nationalpark Hohe Tauern (2015) has already recognized the tendency of brain drain and migration in inner Alpine regions due to the geographic remoteness to cities and main traffic routes, and

insufficient job offers and professional diversity. Tourism is the main economic sector in this region that provides residents with jobs and an income source, and is the primary driver for development (Permanent Secretariat of the Alpine Convention, 2013, LEADER-Region Nationalpark Hohe Tauern, 2015). Furthermore, tourism can be seen as an anchor that keeps the migration low (Permanent Secretariat of the Alpine Convention, 2013). Nevertheless, some municipalities were able to increase the population due to immigration caused by the development of the tourism sector, increased amenity of the municipality and diverse job opportunities (Statistik Austria, 2016).

Municipalities	Residents 2001 (absolute)	Residents 2016 (absolute)	Difference absolute	Difference %
Wald im Pinzgau	1,176	1,151	-25	-2.13
Krimml	886	833	-53	-5.98
Neukirchen am Großvenediger	2,616	2,501	-115	-4.40
Bramberg am Wildkogel	3,895	3,936	41	1.05
Hollersbach im Pinzgau	1,159	1,159	0	0.00
Mittersill	5,584	5,421	-163	-2.92
Stuhlfelden	1,539	1,565	26	1.69
Uttendorf	2,813	2,912	99	3.52
Niedernsill	2,413	2,628	215	8.91
Piesendorf	3,481	3,776	295	8.47
Kaprun	2,903	3,153	250	8.61
Zell am See	9,638	9,762	124	1.29
Bruck an der Großglocknerstraße	4,430	4,611	181	4.09
Fusch an der Großglocknerstraße	754	701	-53	-7.03
Taxenbach	2,918	2,755	-163	-5.59
Rauris	3,107	3,063	-44	-1.42
Lend	1,604	1,355	-249	-15.52
Bad Gastein	5,838	4,148	-1,690	-28.95
Grossarl	3,634	3,802	168	4.62
Huettschlag	974	899	-75	-7.70
Muhr	631	526	-105	-16.64
TOTAL	61,993.00	60,657.00	-1,336	-2.16

TABLE 1: NUMBER OF RESIDENTS ACCORDING TO MUNICIPALITIES (DATA SOURCE: STATISTIK AUSTRIA)

2.1.2 Male vs. Female Ratio
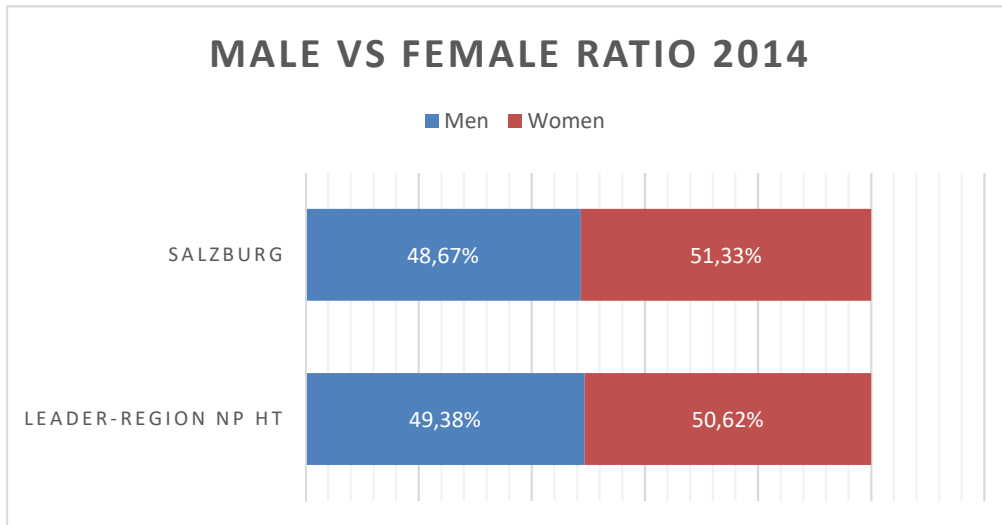
FIGURE 4: MALE VS. FEMALE RATIO FROM 2014 (DATA SOURCE: STATISTIK AUSTRIA)

Figure 4 shows the distribution of men and women for the LEADER-region Nationalpark Hohe Tauern in comparison to the benchmark of the province Salzburg. In the LEADER-region Nationalpark Hohe Tauern, the share of women is slightly lower than in Salzburg. However, it also shows that the number of women in Salzburg and the study region is mildly higher compared to men. The LEADER-Region Nationalpark Hohe Tauern (2015) has recognized this fact and has argued for the adaptation of working conditions for women towards more flexibility and an improved work-life balance. On the other side though, one weakness of the region is a lack in childcare services, especially for children below 3 years (Nationalpark Hohe Tauern, 2015). Additional offers in terms of childcare for infants, kindergarten and school children have to be created especially for weekends, holidays and bank holidays (Nationalpark Hohe Tauern, 2015). One pioneer in the field of social commitment in the region is the company Fahnen-Gärtner GmbH that produces banners, flags and advertisement materials, and is located in Mittersill. Fahnen-Gärtner GmbH has an own kindergarten, offers flexible working hours to working mothers, organizes family excursions for its employees and provides self-made lunch (Fahnen-Gärtner GmbH, 2017). For these efforts, Fahnen-Gärtner GmbH has been awarded with the Family Business Award and a certificate for being the best family organization in Salzburg (Fahnen-Gärtner GmbH, 2017).

2.1.3 Age Distribution
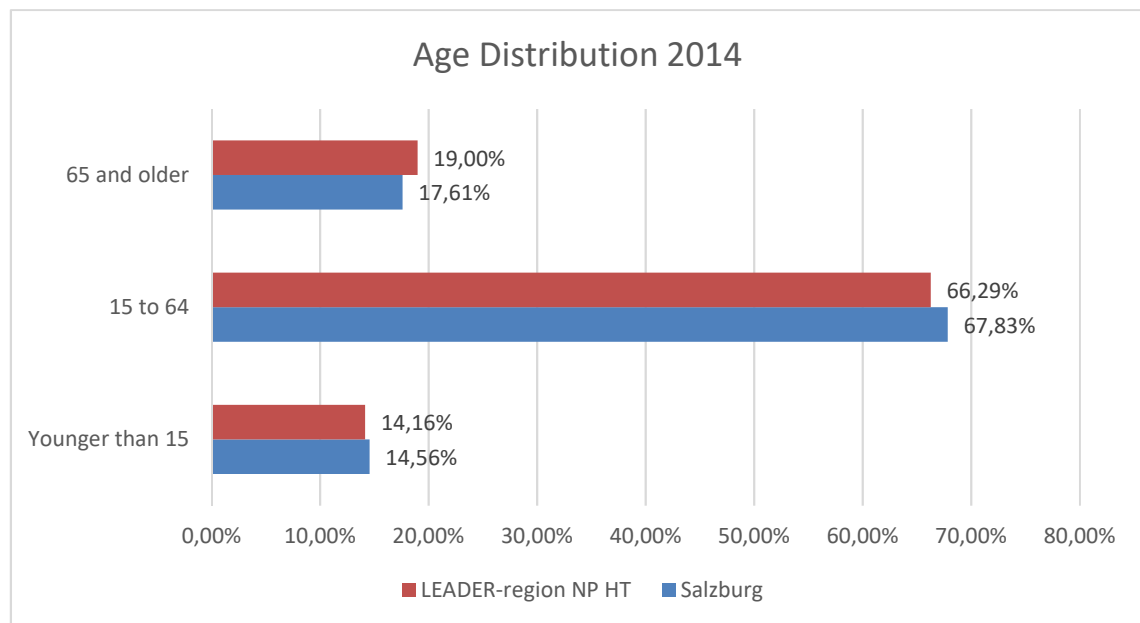
FIGURE 5: AGE DISTRIBUTION FROM 2014 (DATA SOURCE: STATISTIK AUSTRIA)

According to Hayes (2015), another important factor that defines a region is the age of its residents. Compared to the reference area Salzburg, the LEADER-region Nationalpark Hohe Tauern has slightly less people in the age group "15 to 64", which represents the current workforce (Figure 5). The LEADER-Region Nationalpark Hohe Tauern (2015) observed an increasing migration trend within the age group 20 to 39 years.

A closer look at the subdivisions of the age group "15 to 65" reveals that the share of people that are between 50 and 65 years old is larger than the one that represents people from the age group 15 to 49 years (Statistik Austria, 2014). In addition, it can also be seen in Figure 5, that the LEADER-region Nationalpark Hohe Tauern has a higher share of people in the group "65 and older". This proves that the LEADER-region Nationalpark Hohe Tauern is facing an aging population. Moreover, current forecasts expect increase in life expectancy over the next couple of decades (LEADER-Region Nationalpark Hohe Tauern, 2015). An aging population paired with a low birth rate, will pose challenges for the economy (Hayes, 2015). To maintain the productivity of the businesses, new paths and approaches should be considered. This could refer to the situation of working mothers, flexible working hours, home office options and similar. However, Hayes (2015) is certain that companies will increasingly rely on technologies to level out insufficiencies in the labour force.

Overall, Figure 5 shows only minor and not significant variations between the LEADER-region Nationalpark Hohe Tauern and Salzburg.

2.1.4 Educational attainment
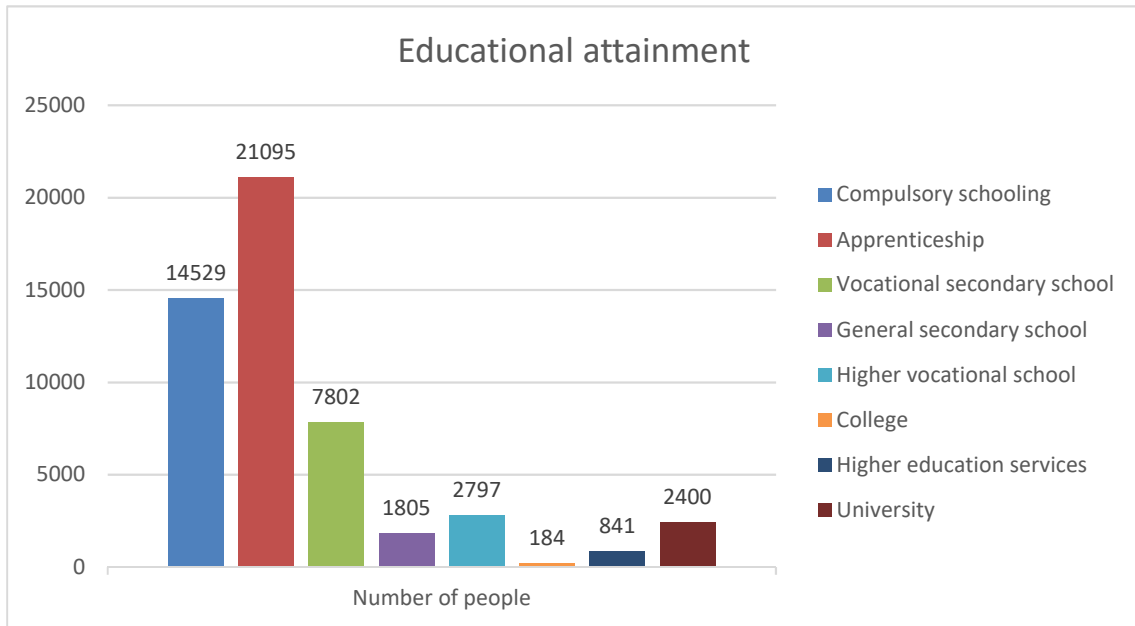
FIGURE 6: EDUCATIONAL ATTAINMENT AND ONGOING EDUCATION (STATISTIK AUSTRIA)

Figure 6 represents the educational attainment within the LEADER-region Nationalpark Hohe Tauern. The number of people (about 41%) that did an apprenticeship is striking and might indicate a low job diversity and a dominance of certain job offers in the labour market. Another rather concerning finding is that only about 28.2% of the people have completed compulsory schooling; this number includes people that did not finish the education as well (Statistik Austria, 2016). Compared to compulsory schooling and apprenticeship, the share of people that graduate from a vocational secondary school is rather low with only 15%. The other education types only achieve very low values that are between 0.4% and 5.4%. However, Statistik Austria (2016) states that due to too few cases and a potential data contamination, values below 5 (people at the municipal level) are not reliable, which only applied to the category "College".

According to the LEADER-Region Nationalpark Hohe Tauern (2015), the focus of regional schools lies on tourism and agriculture. For other school types and universities, students have to commute or migrate to bigger towns or into cities (LEADER-Region Nationalpark Hohe Tauern, 2015). This raises the risk that once these young people have built a life in towns and cities outside the region, they do not return.

2.1.5 Nationality of the residents
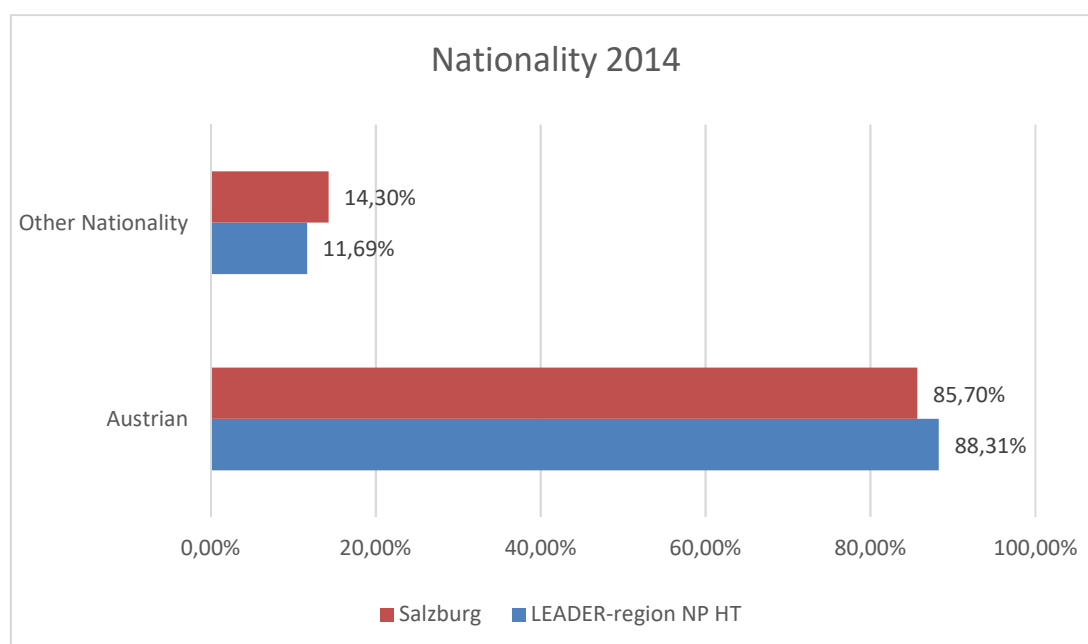
FIGURE 7: NATIONALITY OF THE RESIDENTS (DATA SOURCE: STATISTIK AUSTRIA)

The LEADER-region Nationalpark Hohe Tauern has nearly the same share of residents from other nationalities living in the region as Salzburg as a whole. The LEADER-Region Nationalpark Hohe Tauern (2015) states that this is due to the development of the tourism sector and its job opportunities for non-Austrians.

2.1.6 Income sources

According to the LEADER-Region Nationalpark Hohe Tauern (2015), the main income sources are agriculture and forestry, trade and industry, and tourism and hospitality. The business structure is mainly made up of small and medium sized enterprises (SMEs) (LEADER-Region Nationalpark Hohe Tauern, 2015). Especially, tourism and agriculture are connected in a unique and appealing way (LEADER-Region Nationalpark Hohe Tauern, 2015). Not only is tourism a key income generator, but it also contributes to the local development in other areas, such as trade, mobility, service providers or the building industry. The LEADER-Region Nationalpark Hohe Tauern (2015) is certain that the label "Nationalpark" provides essential support and is an image carrier for the regional tourism.

Further essential income sources of the LEADER-region Nationalpark Hohe Tauern are mobility providers, construction, health and social services and manufacture of goods (Statistik Austria, 2016).

2.2   SWOT Analysis of the LEADER-region Nationalpark Hohe Tauern

When evaluating a region, it is important to understand its strengths, weaknesses, opportunities and threats in order to define new development strategies and improve areas that are lacking behind (Stimson et al., 2008).

From diverse literature, several factors were identified that refer to the strengths, weaknesses, opportunities and threats of the LEADER-region Nationalpark Hohe Tauern. The local development strategy of the LEADER-Region Nationalpark Hohe Tauern (2015) is based on a SWOT analysis which served as a basis for the SWOT analysis of the current study, but has been supplemented by additional literature, e.g. from the Permanent Secretary of the Alpine Convention, too.

Even though this region has several strengths, the weaknesses should not be disregarded, since these cause challenges for the environment, residents and tourists. The opportunities lie mostly in sustainable and environmentally friendly development and in strategies that raise the attractiveness of the region for its residents. Yet, the regional threats and the weaknesses should be addressed as well to take countermeasures and improve the situation.

Strengths

- Tourism
- Nature
- Authenticity
- Attractions of the NP HT
- Great regional product diversity
- Landscape
- Authentic structure of residential areas
- Friendly and hospitable residents
- Traditions
- The brand Nationalpark Hohe Tauern
- Broad sports offers
- Development strategies for women
- Social cohesion
- High quality of life
- Increased use of PV plants
- LEADER-region since 1995: know-how and growing structure
- High share of bio certified farms
- Well-known tourism school in Bramberg
- Well-known agricultural school in Bruck

Weaknesses

- Positioning (disagreement if mass tourism or slow tourism)
- Mindset is shaped by intention to increase tourist numbers
- No common strategy between the three Nationalpark Councils Salzburg, Osttirol and Carinthia
- Missing long-term perspective of the region's development
- Unilateral structure of the businesses
- Lack of accessibility with public transportation systems
- Insufficient local supply
- Insufficient medical care
- High dependency on cars
- Concentration of leisure offers to some villages
- Missing awareness towards regional products
- Use of bikes not possible due to long distances
- High potential, but too few initiatives
- Missing awareness towards nature

SWOT

Opportunities

- Strengthening of Nationalpark Hohe Tauern brand
- Attractive living area
- Potential for broader job offers
- Trend towards regional authentic offers
- Technological development towards energy efficiency and energy savings
- Increased awareness for environmental protection
- Authentic and slow, quality tourism
- Natural and cultural heritage
- Potential for cooperations within the region
- Potential for sustainable resource use

Threats

- Tourism is not environmentally friendly
- Development towards mass tourism
- Competition with other winter tourism destinations
- High prices
- Tourism as the dominant sector
- Demographic transition of the residents
- Low accessibility of the region
- Low wage level
- Potential cultural and authenticity loss
- Economic and ecological challenges due to high tourism
- Unilateral education options
- Brain drain

FIGURE 8: SWOT ANALYSIS OF THE LEADER-REGION NATIONALPARK HOHE TAUERN

2.3   Development goals of the LEADER-region Nationalpark Hohe Tauern

As already established in the previous chapter, the LEADER-region Nationalpark Hohe Tauern is facing an aging population, high migration levels, a large number of working mothers and too little diversity in job and education offers. Furthermore, the SWOT analysis shows in which areas the LEADER-region Nationalpark Hohe Tauern has a need to catch up.

The LEADER-Region Nationalpark Hohe Tauern (2015) has established five overall goals that also reflect the development requirements of the findings in the previous chapter. Until the year of 2013, the main goal of the LEADER-region Nationalpark Hohe Tauern had been to improve the quality of life in rural areas (LEADER-Region Nationalpark Hohe Tauern, 2015). This strategy was successfully implemented and since 2014, the target has been pursued to establish continuity within this development strategy (LEADER-Region Nationalpark Hohe Tauern, 2015). Therefore, the five goals the LEADER-Region Nationalpark Hohe Tauern (2015) has formulated in its strive for further development are as follows:

2.3.1   Goal 1: Expansion of regional value chains in the area of trade, gastronomy, tourism and agriculture

Tourism is the main economic sector in the LEADER-region Nationalpark Hohe Tauern, but other sectors such as the agriculture, production and trade are seen as important too (LEADER-Region Nationalpark Hohe Tauern, 2015). Especially, agriculture contributes with the cultivation of the landscape to the attractiveness of the region (LEADER-Region Nationalpark Hohe Tauern, 2015). The LEADER-Region Nationalpark Hohe Tauern (2015) attributes a high importance to cooperations between tourism and other industry sectors. This would boost these sectors and increase the regionality of the region (LEADER-Region Nationalpark Hohe Tauern, 2015).

2.3.2   Goal 2: Conservation and organization of the rural heritage

The LEADER-Region Nationalpark Hohe Tauern (2015) defines rural heritage as natural and cultural landscape as well as material and immaterial elements of art, history, language and culinary.

2.3.3   Goal 3: Increase in the use of renewable energy

The LEADER-Region Nationalpark Hohe Tauern (2015) has recognized the potential of the region in the use of renewable energy sources.

2.3.4   Goal 4: Enhancement of qualification and innovation as well as cooperation

Qualification does not only refer to education of the individual, but also to the development of organizations and their structures through cooperation, networks and knowledge transfer (LEADER-Region Nationalpark Hohe Tauern, 2015).

2.3.5   Goal 5: Transversal objectives

The transversal objectives focus on social issues such as equality between men and women, increased awareness for different human needs, strengthened motivation of the youth to contribute in projects and the inclusion of handicapped people (LEADER-Region Nationalpark Hohe Tauern, 2015).

In summary, the LEADER-Region Nationalpark Hohe Tauern (2015) aims for strengthening the economy and the employment levels sustainably while safeguarding the protection and sustainable use of the environment and cultural heritage as well as ensuring the adaptability and resilience against consequences of climate change. This includes the development of environmentally friendly mobility, energy generation and use of proactive measures to tackle climate change (LEADER-Region Nationalpark Hohe Tauern, 2015).

The following chapter will elaborate on the characteristics and importance of the Alps, along with the challenges Alpine regions are facing. In turn, this will not only facilitate the comprehension of the background and context of the above-mentioned goals, but will also be the basis of the recommendations to be suggested later within the paper to assist with the process of establishing a suitable energy-flagship region concept.

3 LITERATURE REVIEW

The Alps have been identified as one of the largest natural spaces in Europe that contribute positively with a fascinating landscape and a rich flora and fauna to the quality of life of its citizens (Permanent Secretariat of the Alpine Convention, 2010, 2011). The mountains are, furthermore, an important source of water, natural resources and high quality food (see Table 2; European Environment Agency, 2010a; Permanent Secretariat of the Alpine Convention, 2010). Yet when looking at the history, it becomes evident that the landscape of the Alps has been modified and shaped by humans through farming activities, mining and the development of skiing amenities, tourism and power lines (Permanent Secretariat of the Alpine Convention, 2010).

Examples of ecosystem goods and services provided by mountain ecosystems in Europe			
Provisioning services	**Regulating services**	**Cultural services**	**Supporting services**
E.g. freshwater, fresh air, timber, food, renewable energy supply.	E.g. climate, water, air, erosion and natural hazard regulation, carbon sequestration.	E.g. recreation/tourism, aesthetic values, cultural and spiritual heritage.	E.g. ecosystem functions, including energy and material flow, such as primary production, water and nutrient cycling, soil accumulation, and provision of habitats.

TABLE 2: EXAMPLES OF ECOSYSTEM GOODS AND SERVICES PROVIDED BY MOUNTAIN ECOSYSTEMS (SOURCE: EUROPEAN ENVIRONMENT AGENCY, 2010A)

Currently, structural changes – such as demographic transition and brain drain, issues related to climate change, increased energy use and the need to stay competitive – have led to significant challenges in the Alps that should not be disregarded (European Environment Agency, 2010a; Permanent Secretariat of the Alpine Convention, 2010, 2011, 2013).

3.1 Challenges in the Alps

As already mentioned above, the Alps are undergoing change which is connected to challenges for the regional economy and development, the residents and the environment.

The population density distribution varies across the Alpine regions, but a general trend shows that the population is concentrated in urban centres, in towns around the periphery and along the Alpine fringe and in the foothills (European Environment Agency, 2010a, Permanent Secretariat of the Alpine Convention, 2010, 2011). Due to the remoteness of most Alpine regions and a lack of diverse job and education offers, the migration level of the majority of Alpine municipalities is increasing (Permanent Secretariat of the Alpine Convention, 2011). This effect is clearly visible in Figure 9. This map shows the migration in Alpine regions. It can be further

observed that the population in cities and peripheral areas is increasing while the population density in rural areas is decreasing. The orange circle on the map draws attention to the study region LEADER-region Nationalpark Hohe Tauern. Additionally, it can be noted that in popular tourism regions, the migration is lower than in regions dependent on agriculture and other industry sectors.
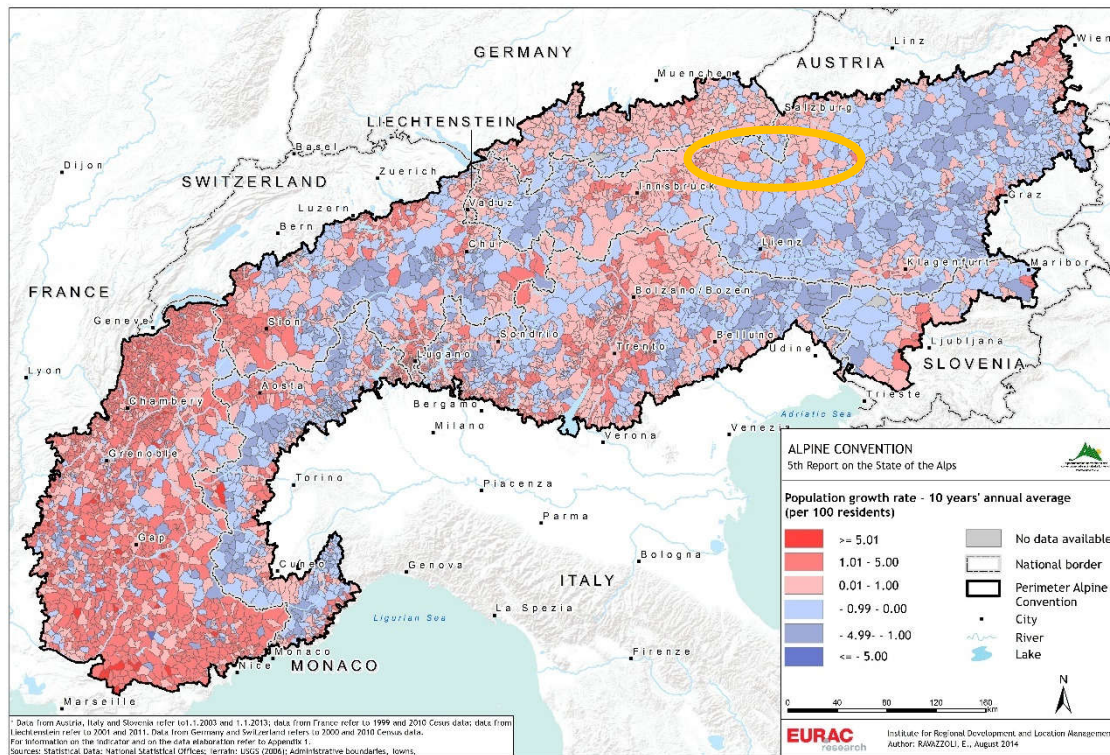
FIGURE 9: POPULATION GROWTH RATE IN THE ALPS (SOURCE: PERMANENT SECRETARIAT OF THE ALPINE CONVENTION, 2010, 2011)

At the same time, these municipalities are facing an aging population (Permanent Secretariat of the Alpine Convention, 2010, 2011, 2015). Structural changes have also affected the economy due to farm abandonments on the one hand, and intensifications in the fields of tourism and industries on the other hand (European Environment Agency, 2010a, Permanent Secretariat of the Alpine Convention, 2010, 2011). The European Environment Agency (2010b, quoted by Permanent Secretariat of the Alpine Convention, 2011, p. 26) has also recognized these two trends: "First, the abandonment of traditional agricultural areas and their related settlements in favour of easier job opportunities in services or industry; second, the concentration of economic power, labour markets, and public services in the easily accessible core towns of the Alps". These observations are supported by hard facts: The number of registered employees in the industry sector "agriculture and forestry" has decreased significantly (Permanent Secretariat of the Alpine Convention, 2011). The tendency in the Alpine region is towards a modern economy, which explains the high share of people employed in the sector "industry and manufacturing" (Permanent Secretariat of the Alpine Convention, 2011). The tertiary sector is

developing rapidly too and is one of the largest employers in the Alps (Permanent Secretariat of the Alpine Convention, 2011).

These developments, land use intensification and abandonment, have severe impacts on the environment and lead to biodiversity loss and to an increase in forest and bush land. As the Alps are ecologically very sensitive, the consequences of these changes, and those of climate change in general, are especially evident in the Alpine regions (BMLFUW, 2016a; Permanent Secretariat of the Alpine Convention, 2007, 2011, 2013; European Environment Agency, 2010a). Climate change has been accelerating its pace rapidly in the past several years and measurements have shown that the temperature has risen by over 1.5°C during the last century (European Environment Agency, 2010a; Permanent Secretariat of the Alpine Convention, 2007, 2011, 2013). Forecasts expect an additional temperature rise by 1°C to 3.5°C until 2050 and the impacts of this increase will be severe (Permanent Secretariat of the Alpine Convention, 2011; European Environment Agency, 2010a). Changes in temperature and precipitation have already led to a reduced snow cover, a decreasing glacier volume and an increased permafrost and surface runoff (European Environment Agency, 2010a). Along with different precipitation levels comes a change in vegetation and an increased frequency of natural hazards (European Environment Agency, 2010a). The European Environment Agency (2010a) has projected that the changing climate causes the tree-line to shift upwards as well as the flora and fauna to remain within their bioclimatic habitat. Furthermore, forecasts show an increase in storm frequencies, periods of droughts and heat waves (Permanent Secretariat of the Alpine Convention, 2013).

In order to counteract climate change, the European Union, the Intergovernmental Panel on Climate Change and the United Nations Framework Convention on Climate Change are certain that a reduction in greenhouse gas emissions and more climate-neutral measures, like the increase of the share of renewable energy, are needed to constrain global warming below 2°C (European Environment Agency, 2016b). Especially Alpine regions can contribute to the goal of becoming independent of fossil fuels and assist in paving the way for renewable energy sources due to the availability of a variety of natural resources in Alpine regions (Permanent Secretariat of the Alpine Convention, 2011). Even though there is a great potential for the production of renewable energy, the possible negative impacts on the environment, such as deforestation or the distortion of ecosystems, and their limits should be carefully taken into consideration and an impact analysis has to be undertaken (Permanent Secretariat of the Alpine Convention, 2011). However, the Permanent Secretariat of the Alpine Convention (2011) emphasizes that energy efficiency must go hand in hand with energy savings. When working on new energy programs, it is essential to collect data on and know-how in energy saving and energy production to develop an integrated regional energy concept (Permanent Secretariat of the Alpine Convention, 2011). The Permanent Secretariat of the Alpine Convention (2011, p. 41) states that a benchmark system is not available yet, because "it is currently not possible to establish a clear

picture of the energy sector situation in the Alps as data availability differs from one region to another and comparability is not possible." Nevertheless, the development of climate change mitigation strategies is seen to "generate added economic value while at the same time protecting natural resources, furthering cultural identity and strengthening social integration" (Permanent Secretariat of the Alpine Convention, 2011, p. 33).

In most Alpine regions, tourism is the economic backbone that provides workplaces, keeps migration low and encourages economic development (Permanent Secretariat of the Alpine Convention, 2013). But especially mass tourism, along with heavy automobile traffic that is connected to it, have severe negative impacts on the ecosystems of the Alps (European Environment Agency, 2010a, Permanent Secretariat of the Alpine Convention, 2007, 2013). The Permanent Secretariat of the Alpine Convention (2007, 2013) and Steiger (2012) argue that pollution, noise, environmental modification and degradation, amongst others, do not only disturb the ecosystems, but also the recreational value of these regions and the quality of life of the residents. Moreover, and according to extensive research (Permanent Secretariat of the Alpine Convention, 2007, 2013; Peeters & Dubois, 2010), tourism is responsible for 4.4% of the global CO_2 emissions and is therefore, a major contributor to climate change. Forecasts have shown that this number will increase by about 3.2% on average per year (Permanent Secretariat of the Alpine Convention, 2007, 2013; Peeters & Dubois, 2010).

However, just as tourism has an influence on climate change, so does climate change on tourism (Steiger, 2012). Steiger (2012, p. 870) is certain that "climate change and tourism are intrinsically linked due to the dependency of many tourism products on natural resources (eg. coral reef, snow) and weather". As already mentioned above, the changing precipitation has caused a decreasing snow cover and a rising snow line, and thus has a negative impact on the winter tourism (Steiger, 2012; Koenig et al., 1997). While skiing resorts at higher altitudes are able to maintain a profitable guest bed capacity due to their location and adaptation strategies, skiing resorts at lower altitudes will suffer significant losses (Steiger, 2012; Koenig et al., 1997). Koenig et al. (1997) have described three coping strategies which refer to the development of skiing areas at higher altitudes and glaciers, the snow production and to cooperation between businesses and regions to stay competitive. Supporters of the skiing industry call for the expansion of skiing resorts at higher altitudes and even on protected areas (Steiger, 2012; Koenig et al., 1997). This strategy might help some tourism companies, but the consequences on the environment should not be disregarded, since the Alpine ecosystems are fragile and sensitive (Koenig et al., 1997; European Environment Agency, 2010a).

With artificially produced snow, the majority of skiing resorts attempt to balance the shortage of natural snow (European Environment Agency, 2010a; Steiger, 2012; Koenig et al., 1997). Snow production is only possible if the temperatures are appropriately low, which has caused challenges during the past years due to mild temperatures in the winter season (Steiger, 2012;

Koenig et al., 1997). In addition to that, ecological concerns that are related to artificial snow making exist, which are increased water demand and energy consumption and impacts on flora and fauna (Steiger, 2012; Koenig et al., 1997).

The third strategy Koenig et al. (1997) are describing is diversification and cooperation between companies and regions. Through this approach, a competitive advantage can be obtained and financial and investment benefits can have a positive impact on both, the company and the region (Koenig et al., 1997). Worthy to note here is that the demographic transition and changing travel behaviour and preferences are particularly altering the tourism demand (Steiger, 2012). Therefore, new and innovative offers should be created for the aging population as the aging effect will have a negative impact on downhill skiing demand (Steiger, 2012).

The Permanent Secretariat of the Alpine Convention (2013) emphasizes that changing climate conditions and tourism sectors and their adaptability vary across the regions; therefore, it is difficult to deliver one standard solution that is adaptable throughout the tourism industry. However, climate protection and proactive adjustment to future challenges are seen as essential factors to maintain competitiveness, especially in the tourism industry (Permanent Secretariat of the Alpine Convention, 2013).

Challenges can also occur in the organization and management of the Alps, since the title of the land does not belong to one individual, but to the state which makes the Alps a common pool good (Kissling-Näf et al., 2002).

3.1.1   The Tragedy of the Commons

Garrett Hardin's "The Tragedy of the Commons" illustrates the challenges of managing commons by the example of the destruction of a freely accessible pastureland as farmers were seeking to maximize their utility by having more than the optimum number of cows grazing (Hardin, 1968). Since the pastureland was used by various farmers, the negative effect of overgrazing was shared among them (Hardin, 1968). Therefore, the farmers concluded that a sensible solution was to keep on adding cattle, since the gains were higher than the costs (Hardin, 1968). "Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit - in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons" (Hardin, 1968, p. 1244, quoted in Ostrom, 1996, p. 2).

This case is based on the economic assumption that the supply of resources is finite and freely accessible by everyone, that the group of users are homogenous and are seeking utility maximization and that the introduction of institutional change is barely feasible (Ostrom, 1996; Kissling-Näf et al., 2002). In that context, Kissling-Näf et al. (2002) describe that during the

centuries, the Alps have been transformed from a freely accessible public good, into a common property regime. Nowadays, the title is held by the state, who has introduced policies concerning the use of the collective good (Kissling-Näf et al., 2002). Kissling-Näf et al. (2002, p. 136) states that "common property regimes represent a form of regulation whereby the yield or benefit flow is divided up and distributed, but the stock of the resource is not."

The individual and selfish interests of the actors, the utility maximization of use and the free-rider problem are the most striking challenges when managing common property (Ostrom, 1996). To overcome these challenges, Davey (2015, p. 142) is certain that the management of common property "must be based on a participative structure, a culture of interdependence, a deep knowledge of the state of the 'resource' being governed and a set of ethical principles based on fairness between participating parties". Ostrom (1993) has analysed a broad variety of case studies and has formulated eight principles of a sustainable common property to minimize the risk of facing the abovementioned challenges:

1. Clearly defined boundaries

   Defining boundaries is essential to organize collective action and to establish rules for the user groups to prevent the free-rider problem (Ostrom, 1993; Kissling-Näf et al., 2002).

2. Proportional equivalence between benefits and costs

   In addition to boundaries, clear regulations should be established on who is allowed to use the resource, when the consumption can take place, how much can be used and which technologies are permitted (Ostrom, 1993; Kissling-Näf et al., 2002).

3. Collective-choice arrangements

   This principle emphasizes the user participation in decision making and adaptation processes (Ostrom, 1993).

4. Monitoring

   The rules and regulations must be adhered to and a monitoring system has to be established to ensure this (Ostrom, 1993; Kissling-Näf et al., 2002).

5. Graduated sanctions

   In case the rules and regulations are violated by users, sanctions ought to be administered (Ostrom, 1993).

6. Conflict resolution mechanisms

   An easy access has to be provided to solve conflicts between actors with low costs and without expenditure of time (Ostrom, 1993).

7. Minimal recognition of rights to organize

   The governmental authorities should recognize the common property as a legitimate institution and should not question collective decisions taken by its users (Ostrom, 1993).

8. Nested enterprises

    "Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities are organized in multiple layers of nested enterprises" (Ostrom, 1993, p. 1910).

Overall, Ostrom (1993) and Kissling-Näf et al. (2002) are convinced that a supporting organization is beneficial for the management of common property.

3.2 Challenges as trigger for innovation

Together, all these challenges can have a major impact on the economy, the residents and the environment of the Alps. At the same time however, these challenges can become a trigger for innovation that allows a more creative employment of natural, cultural and human assets (Permanent Secretariat of the Alpine Convention, 2011). The Permanent Secretariat of the Alpine Convention (2011, pp. 35 – 36) is convinced that "this is especially true when their [communities, town or regions'] aim is to become more energy self-sufficient or climate-neutral by increasing the use of renewable energy and improving energy efficiency as well as employing new concepts and strategies in tourism. Alpine regions could set a good example by mainly using renewable energy to cover their needs." The Permanent Secretariat of the Alpine Convention (2011) furthermore, emphasizes on the importance of Alpine assets such as water, biodiversity and nature, recreation, and culture that could contribute to the EU 2020 goal of transforming the EU into a smart, sustainable and inclusive economy. Considering the characteristics of the Alps, the following approaches are feasible (Permanent Secretariat of the Alpine Convention, 2011, pp. 16-17):

- "Improving and expanding education, research and innovation
- Creating a digital society
- Building a competitive low-carbon economy
- Protecting the environment and the biodiversity
- Developing and implementing new green technologies
- Introducing smart electricity grids
- Raising awareness of consumers to make well-informed green choices
- Creating more and better jobs, especially for women, young people and older workers
- Investing in skills and training"

It is believed that making Alpine regions more sustainable will contribute to environmental regeneration and preservation, economic development and increased quality of life for residents and tourists (Tourism Sustainability Group, 2007; Steiger, 2012; Koenig and Abegg, 1997). Researchers (Tourism Sustainability Group, 2007; Steiger, 2012; Koenig and Abegg, 1997)

are certain that economic benefits include gaining a competitive advantage, strengthening public relations opportunities, obtaining financial savings and an outstanding positioning.

Against the background of the Alps' characteristics and the abovementioned development fields, it would be suitable and beneficial to pursue rural development strategies in the field of energy efficiency and self-sufficiency.

Several regions in Europe have already implemented projects and initiatives that deal with the issue of increased energy use and responded with innovative and smart energy concepts which allowed these regions to gain a unique selling proposition and competitive advantage over other regions (EnergieAgentur.NRW GmbH, 2017; Universität Kassel, 2017; Energieregion Lausitz-Spreewald GmbH, 2017; Energie-Region, 2017; Energieregion Bern-Solothurn, 2017).

In Austria, the Federal Ministry of Transport, Innovation and Technology and the Klima- und Energiefonds recognized the importance of sustainable development and created the funding programme "Energie Vorzeigeregion" – energy-flagship region (Klima- und Energiefonds, 2015). The goal of this programme is to introduce new and innovative energy technologies in Austria and to test them in a geographically restricted area (Klima- und Energiefonds, 2015).

This funding programme would enable the LEADER-region Nationalpark Hohe Tauern to use their existing assets to become an innovative and sustainable region that attracts international attention.

The following chapter will provide an overview of regions that have successfully implemented regional development strategies that deal with these issues proactively and aim for energy self-sufficiency and an increased sustainability. Furthermore, information is delivered about the Austrian "Energie Vorzeigeregion". Since the Leader-region Nationalpark Hohe Tauern is dependent on tourism, sustainable tourism principles should be also taken into account when planning an energy-flagship region.

3.3   Energy-flagship regions in European German-speaking countries

The following section will illustrate some examples of successful energy-flagship regions in European German-speaking countries and will elaborate their main goals and strategies.

3.3.1   EnergieRegion.NRW[1] (Germany)

Nordrhein-Westfalen is one of Europe's most modern and innovative energy regions due to a distinct cluster of global players, SMEs and excellent research facilities (EnergieAgentur.NRW GmbH, 2017). The main goal of the EnergieRegion.NRW is the networking and cooperation of regional actors in the energy sector along the whole value chain in order to strengthen the national and international competitive advantage, competences and knowledge (EnergieAgentur.NRW GmbH, 2017). The cluster brings together experts, regional companies, unions, universities and research institutions and serves as a communication and information platform that establishes cooperations (EnergieAgentur.NRW GmbH, 2017). With a successful cluster management, the EnergieAgentur.NRW GmbH (2017) believes the design and development of products and services will become more catered to the needs of the actors of the energy industry.

The EnergieAgentur.NRW GmbH (2017) states that the cluster deals with eight main topics, each of which is covered by an own network:

1. Power plant technology
2. Fuel cells and hydrogen
3. Biomass
4. Fuels and drive systems of the future
5. Energy efficient and solar building
6. Photovoltaic
7. Geothermal energy
8. Wind power

By pursuing this strategy, the region aims to reduce its CO_2 emissions by about 30% by 2020 (based on the CO_2 emissions from 2005) through the implementation of climate-neutral energy technologies (EnergieAgentur.NRW GmbH, 2017).

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[1] Energy region North Rhine-Westphalia

3.3.2 Energieregion Lausitz[2] (Germany)

The Energieregion Lausitz is a cooperative association of the districts Dahme-Spreewald, Elbe-Elster, Spree-Neiße, and Oberspreewald-Lausitz and of the city Cottbus (Energieregion Lausitz-Spreewald GmbH, 2017). The main aim is to develop projects together and to enhance the regional value to increase the attractiveness of the region as an investment location, improve the image as an economic and research region and strengthen the competitive advantage (Energieregion Lausitz-Spreewald GmbH, 2017). The Energieregion Lausitz is characterized by a variety of innovative SMEs as well as large organizations (Energieregion Lausitz-Spreewald GmbH, 2017). Especially the education, research and technology sectors are well developed and are valuable contributors to the development of the region (Energieregion Lausitz-Spreewald GmbH, 2017). The Energieregion Lausitz-Spreewald GmbH (2017) is confident that the close cooperation between the different industry sectors as well as the public and politics to deal with challenges posed by the energy revolution is remarkable and has led to an attractive business, living and tourism region. This region has recognized the advantages of functioning cooperations and is eager to strengthen its network even more (Energieregion Lausitz-Spreewald GmbH, 2017). Therefore, an analysis of the fields of competence has been conducted to identify the main drivers of development in the region (Energieregion Lausitz-Spreewald GmbH, 2017). The Energieregion Lausitz-Spreewald GmbH (2017) presented seven areas which are the basis of the development of future projects and activities: energy sector, synthetic materials/chemical industry, metal industry, food sector, tourism and logistics.

3.3.2.1 Competence field energy sector

The Energieregion Lausitz is an important energy and industry region, since it has natural deposits of lignite, which is used to create energy. Furthermore, a large part of its energy and heat is produced by renewable energy plants as well as wind power plants (Energieregion Lausitz-Spreewald GmbH, 2017). The region focuses on increasing the supply reliability of the conventional power plants as well as on the use and integration of renewable energy sources (Energieregion Lausitz-Spreewald GmbH, 2017). By doing so, the Energieregion Lausitz is pursuing an increase in efficiency and consequently a reduction in CO_2 emissions as well as an increase in energy savings (Energieregion Lausitz-Spreewald GmbH, 2017). To reduce CO_2 emissions, a pilot project has been implemented to use CO_2 as a recyclable input material (Energieregion Lausitz-Spreewald GmbH, 2017). Further activities refer to the promotion of decentralized energy production technologies as well as more efficient and well-developed

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[2] Energy region Lusatia

storage solutions and to the increased use of Greentech strategies in the building industry (Energieregion Lausitz-Spreewald GmbH, 2017).

3.3.2.2 Competence field synthetic materials/chemical industry

The synthetic materials and chemical industry is important to the Energieregion Lausitz as it is a driver for innovation, not only in research, but also in supply and application (Energieregion Lausitz-Spreewald GmbH, 2017). The main aim is to become more sustainable and efficient throughout different industrial sectors (Energieregion Lausitz-Spreewald GmbH, 2017).

3.3.2.3 Competence field metal industry

The metal industry in the Energieregion Lausitz is a very diverse sector and is connected to other industries (Energieregion Lausitz-Spreewald GmbH, 2017). It does not only generate about 10% of the total industrial turnover, but also job positions in other industry sectors are dependent on its wellbeing (Energieregion Lausitz-Spreewald GmbH, 2017). The metal industry is constantly working on developing new materials and becoming more sustainable throughout the value chain (Energieregion Lausitz-Spreewald GmbH, 2017).

3.3.2.4 Competence field food industry

The Energieregion Lausitz is characterized through a variety of SMEs along the value chain in the agricultural field and agricultural trading (Energieregion Lausitz-Spreewald GmbH, 2017). According to the Energieregion Lausitz-Spreewald GmbH (2017), the core areas are animal and plant production and agriculture. This industry sector is aiming for closing the raw material and economic cycle to be more sustainable (Energieregion Lausitz-Spreewald GmbH, 2017).

3.3.2.5 Competence field tourism

The Energieregion Lausitz was able to integrate tourism in its regional development strategies due to the excellent transport accessibility through highways, airports and train connections and the availability of diverse natural landscapes such as forests and lakes (Energieregion Lausitz-Spreewald GmbH, 2017). A wide range of cycle tracks and aquatic trails, especially, attract active and nature loving tourists as well as cultural tourists. The touristic offer in the Energieregion Lausitz is quite diverse, ranging from wellness and spa tourism to event, sports and cultural tourism (Energieregion Lausitz-Spreewald GmbH, 2017).

3.3.2.6 Competence field logistic

The logistics are not seen as a separate competence field, but as a cross-sectoral topic that is important for an efficient and sustainable economy (Energieregion Lausitz-Spreewald GmbH,

2017). The main challenge is to develop strategies that satisfy the client's needs, are sustainable and enhance the efficiency at the same time (Energieregion Lausitz-Spreewald GmbH, 2017).

However, in addition to the six abovementioned fields of competences, the Energieregion Lausitz puts an emphasis on rural development, climate protection, infrastructure, science and research, development and education (Energieregion Lausitz-Spreewald GmbH, 2017). Raising awareness of the public is an essential component to pave the way towards climate and environmental protection and the increased use of renewable energy sources (Energieregion Lausitz-Spreewald GmbH, 2017). The Energieregion Lausitz-Spreewald GmbH (2017) believes that an energy mix of biomass, biogas, photovoltaic and wind energy is the best solution to meet today's energy requirements. This also includes securing sensible land-use planning for plants that are used for energy generation (Energieregion Lausitz-Spreewald GmbH, 2017). Regional, agricultural businesses are supported with projects in the field of waste water treatment, modification of forests to protect the land from floods, reduction of CO_2 emissions and the renaturation of rivers and lakes (Energieregion Lausitz-Spreewald GmbH, 2017).

On top of that, the development and protection of cultural heritage and the collaboration within the region as well as with other regions is pursued (Energieregion Lausitz-Spreewald GmbH, 2017).

A ubiquitous public transportation system and the increased use of renewable fuels will contribute to a sustainable and climate friendly mobility (Energieregion Lausitz-Spreewald GmbH, 2017). Projects are already in place to reduce individual traffic of the residents and tourists and to intensify the bicycle tracks (Energieregion Lausitz-Spreewald GmbH, 2017). The long-distance routes, which make this region a popular business location, are constantly renewed and developed to stay accessible and competitive (Energieregion Lausitz-Spreewald GmbH, 2017).

Through strengthening the cooperation between economic actors and science, the Energieregion Lausitz ensures that the innovative processes and innovative capabilities within organizations and the region are supported (Energieregion Lausitz-Spreewald GmbH, 2017). The Energieregion Lausitz-Spreewald GmbH (2017) states that a focus lies on innovative potentials, research competences and future oriented technologies that are valuable and ecologically sustainable.

Overall, the Energieregion Lausitz is characterized by well interconnected activities and projects (Energieregion Lausitz-Spreewald GmbH, 2017).

3.3.3 Entwicklungsperspektiven für nachhaltige 100% Erneuerbare-Energie-Regionen[3] (Germany)

The project "Entwicklungsperspektiven für nachhaltige 100% Erneuerbare-Energie-Regionen in Deutschland", short 100ee-Regionen, identifies, supports and connects regions, communities and cities that pursue the plan to shift to a solely renewable energy generation (Universität Kassel, 2017). 100ee-Regionen supports stakeholders through communication, transfer and networking services to facilitate the conversion (Universität Kassel, 2017). Currently, over 150 provinces, municipalities, regions and cities in Germany work towards this target (Universität Kassel, 2017).

The main element of a 100ee-Region is a decentralized energy generation through the use of diverse renewable energy sources, such as solar, wind, water, biomass or geothermal energy (Universität Kassel, 2017). This strategy goes hand in hand with projects that reduce the energy consumption and increase the energy efficiency (Universität Kassel, 2017). The focus is put on the sustainability of the energy production (Universität Kassel, 2017). When talking about sustainability, the Universität Kassel (2017) refers to the environmentally friendly, safe and socially equal practices. Only then can regional potentials be used efficiently and the quality of the value chain be advanced (Universität Kassel, 2017). The Universität Kassel (2017) states that the main aim is the complete transition to renewable energy in the areas of electricity, heat and mobility.

The leading principles are (Universität Kassel, 2017):

- Development of a regional and decentralized energy revolution
- Strengthening and enhancing connection of communities
- Embedding regional value creation as a guiding principle
- Integration of electricity, heat and mobility sectors
- Further positioning of Germany as an energy revolution technology location
- Strengthening and developing regional energy markets
- Creation of a positive energy revolution culture

The Universität Kassel (2017) emphasizes that the existing regions have shown that the supports of regional actors and the public are essential for a successful implementation. This is the key to

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[3] Development prospects for sustainable 100% renewable energy regions

the conservation of the environment and sustainable regional development (Universität Kassel, 2017).

3.3.4 Energie-Region: EnergieSchweiz für Gemeinden[4] (Switzerland)

The project "Energie-Region" supports regions to improve their energy footprint individually and encourages the collaboration of communities and intercommunal solutions (Energie-Region, 2017). The main focus lies on the long-term use of regional renewable energy potentials and the increase in energy efficiency (Energie-Region, 2017). Self-sufficiency ensures the reduction of costs and enables a profitable export of energy in other regions (Energie-Region, 2017). The Energie-Region (2017) is certain that regionality and the environmentally friendly and intelligent energy supply are enhanced through the exchange of resources between communities and regions. Apart from using the regional energy potentials optimally, another endeavour is the reduced energy consumption (Energie-Region, 2017). Projects that deal with mobility concepts for public transportation systems, inclusion of energy intensive organizations or building restoration aim for reducing the regional and local energy use and for coordinating the supply and demand efficiently (Energie-Region, 2017). However, energy autarky is not the overall goal, because the Energie-Region (2017) is confident that it is more sensible to use renewable energy sources that suit the site conditions ecologically and economically. And in case of missing or excess energy supply, neighbouring regions and communities can exchange energy (Energie-Region, 2017).

Strengthening the regional economy is another part of the concept of the Energie-Region, since innovative projects and initiatives can expand the network and the value chain and allow the incorporation of industry sectors like tourism or agriculture (Energie-Region, 2017).

When pursuing the plan of becoming an Energie-Region, a situation analysis of the region must be conducted to get insights into the regional potentials and into areas in which improvements are needed (Energie-Region, 2017). Initiatives and projects are usually implemented in the following fields (Energie-Region, 2017):

- Development and regional planning
- Public buildings and facilities
- Building guidelines and restoration concepts
- Energy and resource supply
- Waste management

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[4] Energy region: Energy Switzerland for municipalities

- Mobility
- Management of organizations
- Communication
- Destination marketing and management
- Cooperation between companies, regions or communities
- Awareness raising

The Energie-Region (2017) stresses the importance of involving actors throughout the value chain and the public into the process of transforming the region into an Energie-Region. This also involves formulating a common vision and common goals to set the development measures (Energie-Region, 2017). Based on this vision, the energy concept will be created that shows the ultimate goal and indicates the development process (Energie-Region, 2017). The Energie-Region (2017) further mentions, that a clear communication in and out of the region is essential to engage the public from the beginning onwards. This will lead to an increased awareness about the project, increased motivation of the stakeholders and to an overall positive dynamic (Energie-Region, 2017). Only by involving the public can the concept of the Energie-Region be successfully implemented in the long-term (Energie-Region, 2017).

3.3.5 Energieregion Bern-Solothurn[5] (Switzerland)

The Energieregion Bern-Solothurn is an association consisting of 16 Swiss municipalities that aim for minimizing the energy demand while maximizing the share of regional renewable energies (Energieregion Bern-Solothurn, 2017). Through this approach, the member municipalities will become less dependent on big energy corporations and the ongoing price increases (Energieregion Bern-Solothurn, 2017). Furthermore, the projects within the Energieregion lead to a high regional value creation that benefits not only the local businesses, but also the residents (Energieregion Bern-Solothurn, 2017). The Energieregion Bern-Solothurn (2017) sees the main potentials of the region in the fields of solar energy, energy efficiency of buildings and biomass.

To facilitate projects in these areas, the umbrella association of the Energieregion Bern-Solothurn offers consultation about funding and grants besides measures to enhance the energy efficiency (Energieregion Bern-Solothurn, 2017). To engage not only with businesses, but also with the public, regular information events are organized and held (Energieregion Bern-Solothurn, 2017).

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[5] Energy region Bern-Solothurn

3.4   The Austrian energy-flagship region: Energie Vorzeigeregion

The Austrian energy-flagship region is a federal funding programme to pursue the aim of developing and demonstrating intelligent, safe and affordable energy and mobility concepts along with creating an applied laboratory for innovation (Klima- und Energiefonds, 2015).

The term "region" does not only relate to reasonable geographical boundaries, but also to involved stakeholders (Klima- und Energiefonds, 2015). Therefore, one should be aware of the most important stakeholders in the field of study to promote and complete the project successfully (Klima- und Energiefonds, 2015; Schmeer, 2015). Klima- und Energiefonds (2015) state that a relevant size and a common target are also important.

The main focus of an energy-flagship region is the development of energy technology prototypes and the demonstration of their application, pilot projects with regional companies in addition to the trial and model validation of new and improved products in the fields of energy and mobility, processes and services (Klima- und Energiefonds, 2015). According to the Klima- und Energiefonds (2015), the project should demonstrate the application of new, innovative, environmentally friendly and affordable solutions in real life.

Possible components of an energy-flagship region are intelligent technology systems for electricity and heat, based on renewable energy that should secure the energy supply of the region and balance out the fluctuating energy demand (Klima- und Energiefonds, 2015). To increase the decentralized energy supply and to stabilize the power supply, the Klima- und Energiefonds (2015) further propose to develop projects that deal with the storage of wind and sun energy. Another research field could be the relatively new energy source hydrogen, where a pilot project could deal with its production and use in households, industries and mobility (Klima- und Energiefonds, 2015). A variety of innovations can also be tested in the field of mobility (Klima- und Energiefonds, 2015): hydrogen filling stations, the use of different energy technologies, and energy storage for electric cars.

Klima- und Energiefonds (2015) lists the following characteristics that an energy-flagship region must fulfil:

- The design of the flagship region should be geared to a superior overall concept that would be created based on scenario analysis and strategies for development and implementation.
- The superior overall concept should encourage the creation of a supra-regional and multidisciplinary innovation structure that addresses the challenges posed by the energy revolution.
- The superior overall concept should be reflected in integrated and measurable overall solutions that target several system levels and technology areas in the study field.

- In an ideal case, the overall solutions have to include the whole value chain till the end consumer.
- Within the energy-flagship region, new and improved technologies should be further developed and tested in businesses.
- A situation analysis should summarize all existing projects to integrate them into the overall solutions.
- Based on the situation analysis, different areas of improvements would be identified and respective projects then have to be introduced.
- Strategic knowledge should be gathered about the effectiveness, the efficiency, the scalability and the transferability of the developed solutions to be able to draw conclusions on the implementation in a wider area.
- A network with suitable partners and cooperations from the whole value chain should be developed.
- This network should be part of an innovation ecosystem, which will guarantee the implementation and improvement of single projects, and should pursuit the achievement of the superior overall concept.
- The development of an extensive, meaningful and internationally visible flagship region should be aimed for.

The energy-flagship region pursues the target of the development and implementation of local energy technologies and energy relevant mobility technologies to test the systems in practice in real-world operations (Klima- und Energiefonds, 2015). Furthermore, Austria as a leading market for innovative energy and mobility technologies and services should be strengthened and expanded (Klima- und Energiefonds, 2015). When striving for an energy-flagship region, the Klima- und Energiefonds (2015) emphasizes on the importance of actively involving the public. This ensures not only an increased awareness towards innovative energy solutions, but also that the project is carried by a great mass of people towards success (Klima- und Energiefonds, 2015).

However, to design a relevant and suitable superior overall strategy for the energy-flagship region in the tourism region LEADER-region Nationalpark Hohe Tauern, it is essential to explore issues of sustainable tourism and the fields of application.

3.5 Definition of sustainable tourism

The European Commission (2016) states about sustainable tourism the following: "The competitiveness and sustainability of the tourism industry go hand-in-hand as the quality of tourist destinations is strongly influenced by their natural and cultural environment, and their integration into the local community. Long-term sustainability requires a balance between economic, socio-cultural, and environmental sustainability."

This definition establishes a link to the three pillars of sustainable development, namely the environment, society and economy (BMLFUW, 2016b).

A more detailed definition that includes the same three pillars, is given by UNEP and UNWTO (2005), where they agree that sustainable tourism should value and preserve natural heritage, biodiversity and ecological processes while using environmental resources that are key elements for the efficient tourism development. At the societal level, it is essential to retain intercultural understanding, existing cultural heritage and traditional values, to contribute to increased tolerance and to respect and maintain the socio-cultural authenticity of the tourism communities (UNEP and UNWTO, 2005). Sustainable tourism should further enable profitable long-term economic activities that benefit socio-economically all involved stakeholders (UNEP and UNWTO, 2005). UNEP and UNWTO (2005) specify these benefits as stable jobs and income opportunities, decreasing poverty rates and improved social services for host communities.

However, literature (UNEP and UNWTO, 2005; BMLFUW, 2016b; European Commission, 2016, Permanent Secretariat of the Alpine Convention, 2013) shows that sustainable tourism is not a clearly defined and independent area, but a pursuit of sustainable development goals within the tourism industry.

3.5.1 The application of sustainable principles for tourism

Climate change has caused a shift in priorities: Due to the major impacts on tourism, businesses have realized that their contribution to greenhouse gas emissions must be reduced and that their long-term competitiveness depends increasingly on sustainability (Tourism Sustainability Group, 2007). The Permanent Secretariat of the Alpine Convention (2013, p 14) is certain that "the sustainable development of this sector is a major challenge in terms of achieving durability without the risk of modifying underlying resources. Mobility and its impact on climate change, the conservation of natural resources (water, land, fragile environments etc.), minimizing pollution and waste, achieving well balanced spatiotemporal movements and respect for social and cultural traditions are only few of the challenges that need to be met, regardless of the location (developed or developing countries) or the type of tourism (mass or niche) and taking into consideration indicators such as carrying capacity and corresponding thresholds of irreversibility."

According to the Permanent Secretariat of the Alpine Convention (2013), there are seven important types of tourism in the Alps that have to be considered when striving for sustainable development:

- Foothill summer destinations

  Regions with lakes and rivers attract tourists and day visitors from nearby cities during the summer months (Permanent Secretariat of the Alpine Convention, 2013). Usually, tourists combine their stay with excursions to sights in the higher mountains (Permanent Secretariat of the Alpine Convention, 2013).

- Health destinations

  The demand for healthcare and cure is especially high in Alpine regions due to the healing aspects of mountain air, sports offers and healthy nutrition (Permanent Secretariat of the Alpine Convention, 2013).

- Nature experience oriented destinations

  The Alps offer a rich natural landscape, biodiversity and culture, and are therefore, a popular destination for outdoor activities such as hiking, canoeing, climbing, paragliding and others (Permanent Secretariat of the Alpine Convention, 2013).

- Alpine cities and villages

  Large villages and cities along the Alpine foothills attract tourists due to multi-optional choices of culture, nature and other leisure activities (Permanent Secretariat of the Alpine Convention, 2013).

- All season inner mountain destinations

  Destinations with a favourable infrastructure, climate and location attract tourists all year round for skiing, wellness, culture and sports (Permanent Secretariat of the Alpine Convention, 2013).

- Ski resorts

  In destinations at higher altitudes with snow rich winters, the main economic driver is the winter tourism (Permanent Secretariat of the Alpine Convention, 2013). The Permanent Secretariat of the Alpine Convention (2013) describes these regions as well-developed in terms of winter technology, snow production and maintenance of the slopes. Furthermore, a diverse offer of accommodations and services has a positive effect on the demand too (Permanent Secretariat of the Alpine Convention, 2013).

- All season tourism in the mountains at the edge of the Alps

  This tourism type is similar to all season inner mountain destinations, but the quality of offered accommodations is not as high and the offers in the wellness field are rather low (Permanent Secretariat of the Alpine Convention, 2013).

According to the Permanent Secretariat of the Alpine Convention (2013), these seven types of tourism best describe the typical holiday destinations in the Alps. When developing a strategy to become more sustainable, it is essential to be aware of the single tourism forms and their characteristics to be able to plan efficiently (Permanent Secretariat of the Alpine Convention, 2013).

The Tourism Sustainability Group (2007) and the Permanent Secretariat of the Alpine Convention (2013) have identified several key points that are essential for a sustainable development in tourism, specifically in the Alps:

▪ Tourism has a wide range of impacts that affect the environment and the society which should be accounted for in a holistic and integrated way (Tourism Sustainability Group, 2007; Permanent Secretariat of the Alpine Convention, 2013). The Tourism Sustainability Group (2007) as well as the Permanent Secretariat of the Alpine Convention (2013) affirm that all of these impacts have to be considered and integrated in the development process of sustainable principles.

▪ The need to stay competitive is more important than ever; therefore, the Permanent Secretariat of the Alpine Convention (2013) emphasizes on the development of innovative, sustainable and superregional tourism concepts in order to position regions internationally.

▪ The rapidly decreasing snow cover and glaciers and thus, changing attractiveness of destinations call for a diversification of tourism offers to stay competitive (Permanent Secretariat of the Alpine Convention, 2013).

▪ The Tourism Sustainability Group (2007) picked up the definition of the World Commission on Environment and Development (1987) which defines sustainable development as a "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" and adds long term planning as key principle for a successful sustainable tourism development.

▪ The development of host communities and tourism destinations must reflect and stay within the carrying capacity of this region and society (Tourism Sustainability Group, 2007; Permanent Secretariat of the Alpine Convention, 2013).

▪ The Permanent Secretariat of the Alpine Convention (2013) and the Tourism Sustainability Group (2007) conclude that sustainable tourism includes the involvement of a wide range of touristic activities and stakeholders. A thorough stakeholder analysis should be the basis of every development project to identify touristic offers, tourism organizations, tourism supporting organizations and the touristic demand (Permanent Secretariat of the Alpine Convention, 2013).

▪ When evaluating policies, activities and trends, the Tourism Sustainability Group (2007) recommends using the best available knowledge and skills.

▪ Dealing with the environment and with climate change is involved with uncertainties (Tourism Sustainability Group, 2007). To reduce uncertainties and prevent environmental damages, preventive and proactive actions should be taken.

▪ Based on the "user and polluter pays" principle, prices should be designed to include real costs to the society and environment incurred by using and consuming products and services (Tourism Sustainability Group, 2007).

- The Tourism Sustainability Group (2007) is aware of the importance of monitoring the impacts tourism has on the society and environment, as well as monitoring the improvements.

However, in order to achieve the abovementioned points, the Tourism Sustainability Group (2007) is certain that several prerequisites have to be fulfilled. These refer to safety and security in the tourism region, the quality of the tourism facilities and services, the effective market access to potential tourists, a positive and supportive business environment and the existence of and adherence to proper labour laws (Tourism Sustainability Group, 2007). According to the Permanent Secretariat of the Alpine Convention (2013), Alpine regions act in an exemplary manner and fulfil these aspects.

3.5.2 Challenges for a sustainable tourism development

The Permanent Secretariat of the Alpine Convention (2013, p. 14) states that "the challenges affect all stakeholders (tour operators, carriers, tourism developers and hospitality operators, restaurant owners, shopkeepers, tour managers, planners, providers and managers of tourism products, regional players and elected representatives, and obviously, tourists too) and territories as well as their practices: hospitality, lodging, transport".

The Tourism Sustainability Group (2007) further draws attention to eight distinctive challenges that should be addressed if a sustainable tourism concept is pursued:

1. Reducing the seasonality of demand
   Being dependent on a seasonality of demand puts severe pressure on the environment and its natural resources, the communities and the businesses (Tourism Sustainability Group, 2007; Permanent Secretariat of the Alpine Convention, 2013). A solid knowledge about the region and its products and offers is required to address the issue of seasonality (Tourism Sustainability Group, 2007). In some cases, reducing the seasonality and spreading the demand over the year is desirable; in other cases, the environment and the community need the low season to recover from the seasonal peak (Tourism Sustainability Group, 2007; Permanent Secretariat of the Alpine Convention, 2013).

2. Addressing the impact of mobility
   Tourism transport, inbound as well as outbound, was responsible for 8% of the CO_2 emissions in the EU in 2004 (Tourism Sustainability Group, 2007). The Tourism Sustainability Group (2007) reports that this number has increased through 2016. 50% of the CO_2 emissions are caused by air transportation and 41% are caused by cars (Tourism Sustainability Group, 2007). "Air pollution, noise and a permanent pressure on land-use by enlarging the transport infrastructure are strong obstacles against more sustainable tourism" (Permanent Secretariat of the Alpine Convention, 2013, p. 113). According to the

Tourism Sustainability Group (2007), the goal should be to decouple economic growth and emissions caused by mobility.

3. Improving the quality of jobs in the tourism sector

    In tourism, employees are a vital part of the customer satisfaction and the competitive advantage of a business (Tourism Sustainability Group, 2007). Therefore, it is essential to improve unfavourable working conditions and a lack of career opportunities (Tourism Sustainability Group, 2007). The Permanent Secretariat of the Alpine Convention (2013) reports that the average income in the tourism industry is lower than in other industry sectors. This fact and the rising costs of daily life put a significant pressure on the local population (Permanent Secretariat of the Alpine Convention, 2013).

4. Maintaining and enhancing community prosperity and quality of life

    Property development and restructuring of local economies are seen as the main challenges for local communities (Tourism Sustainability Group, 2007). The result is usually connected to a loss of local amenities, natural and green spaces, and a loss of traditional activities (Tourism Sustainability Group, 2007). According to the Tourism Sustainability Group (2007), these challenges can also present opportunities and deliver benefits to the communities.

5. Minimizing resource use and production of waste

    Issues concerning resource use target energy consumption, water consumption, air quality, and reduction, reuse and recycling of materials (Tourism Sustainability Group, 2007). The Permanent Secretariat of the Alpine Convention (2013, p. 113) states that "a strong part of the image of Alpine tourism is the richness of nature and purity of the natural resources of the Alps". Therefore, the aim should be to conserve natural resources and reduce the production of waste (Tourism Sustainability Group, 2007; Permanent Secretariat of the Alpine Convention, 2013).

6. Conserving and valuing natural and cultural heritage

    The unique combination of nature and culture supports the positive image of the Alps (Permanent Secretariat of the Alpine Convention, 2013). However, natural and cultural heritage is not only threatened by the extensive use of tourists, but also by external factors like weather catastrophes and a lack of resources for its preservation and maintenance (Tourism Sustainability Group, 2007).

7. Making holidays available to all and increase equality

    The challenge is to make tourism accessible to all people, including those with physical disabilities and those economically disadvantaged (Tourism Sustainability Group, 2007).

8. Using tourism as a tool in global sustainable development

    This key challenge includes the seven before mentioned points and should address the global impact of tourism mobility, the exploitation and overuse of resources, the lack of adequate labour laws, the promotion of equity and the impact on the host communities (Tourism Sustainability Group, 2007).

The Permanent Secretariat of the Alpine Convention (2013) further adds the challenge of enhancing innovation capacity of tourism stakeholders in the Alps to achieve sustainable development while increasing the regional welfare through collaboration of the tourism industry with other sectors. Another important aspect is raising awareness and educating consumers on sustainable tourism offers and including the public into projects and initiatives (Permanent Secretariat of the Alpine Convention, 2013).

3.5.3 Creation of an action plan for sustainable tourism development

When striving for sustainable tourism, the whole value chain of tourism and its stakeholders should be included in the process and responsibility has to be distributed to all actors of the region (Permanent Secretariat of the Alpine Convention, 2013).

The Tourism Sustainability Group (2007) and the Permanent Secretariat of the Alpine Convention (2013) agree that it is fundamental to develop an action plan to act as a guide for the continuous process towards sustainability. It is important to set long term targets, but also to keep the key challenges of the region in mind (Tourism Sustainability Group, 2007).

The Tourism Sustainability Group (2007) has identified 5 stages, that lead to a successful action plan:

1   Commitment of all relevant stakeholders and political engagement
2   Situation analysis of environmental, social and economic dimensions of the region
3   Strategic choices about the targets and visions
4   Action planning
5   Monitoring and review

The Permanent Secretariat of the Alpine Convention (2013) has analysed a variety of cases in which sustainable tourism concepts were implemented successfully. This analysis was essential for the creation of a list of features that contribute to the success of these programs and initiatives (Permanent Secretariat of the Alpine Convention, 2013):

- Existence and introduction of different legislations that enhance sustainable tourism
- Preservation of natural resources, biodiversity and the environment
- Improvement of social aspects of tourism, such as low barrier planning and working conditions
- Adjustment of income of the local population to price levels
- Conservation of lively cultural heritage
- Development of the accessibility and the regional mobility through environmentally friendly transport systems

- Safeguarding the potential labour force of the tourism sector by providing services for working mothers, learning opportunities for students and by improving living conditions
- Information sharing about sustainable tourism practices with the public and tourists
- Implementation of environmental management and eco certification systems
- Introduction of charters, sustainability guides and surveys
- Awareness raising, education and training on sustainable tourism practices
- Strengthening the innovation and management capacity of regions for sustainable tourism
- Increase of regional welfare through cooperation between companies and industry sectors

3.5.3.1 Steps to lead businesses towards sustainable development

A major contributor to sustainable tourism development are the businesses; therefore, the integration of sustainability policies into business and management practices is necessary (Tourism Sustainability Group, 2007). According to Tourism Sustainability Group (2007), businesses can be influenced by 5 steps:

1   Extensive research and information gathering about market trends, the businesses perceptions of sustainable policies and drivers of change
2   Awareness raising
3   Education and capacity building
4   Financial incentives and assistance to persuade businesses to make changes
5   Performance criteria, identification of suitable certification and reward

3.5.3.2 Steps to lead tourists to being more sustainable

Businesses are only partly able to increase sustainability in a region as tourists play a major role too (Tourism Sustainability Group, 2007). The Permanent Secretariat of the Alpine Convention (2013, p. 14) sees consumer behaviour as a key element of the development of sustainable tourism: "Consumers have a significant responsibility, through their demand they can influence the success and ongoing adaptation of what is supplied to them". The most pressing challenges that are influenced by the tourists' choices are "seasonality of demand, mode of transport, contribution to local prosperity and impact on natural and cultural resources" (Tourism Sustainability Group, 2007, p. 25). The Tourism Sustainability Group (2007) states that a key component of altering the behaviour of visitors is through information provision.

More specifically, these 5 tools are successfully used to change tourists' behaviour (Tourism Sustainability Group, 2007):

1   Education
2   Communication
3   Work with intermediaries to influence tourists' choices

4   Regulation and codes of conduct

5   Pricing and charging

In order to be able to apply the abovementioned principles of the Austrian energy-flagship region and of sustainable tourism, a research design and method has to be decided upon. The next chapter will provide information about the hypothesis development, the research method and how it is applied to this study.

4 METHODOLOGY

The research question "How do potential stakeholders imagine an energy-flagship region and what are they willing to do to achieve it?" implies already, that a qualitative research method was chosen to explore and understand the regional stakeholder's view on the transformation of the LEADER-region Nationalpark Hohe Tauern into a sustainable energy-flagship region. Qualitative methods are usually used to generate new research questions for further qualitative or quantitative testing and to open up new research fields (Hussy et al., 2010). This can be accomplished through posing the research question in a descriptive way by asking how, what and/or why research questions (Hussy et al., 2010). Creswell (2014, p. 4) describes that "the process of research involves emerging questions and procedures, data typically collected in the participant's setting, data analysis inductively building from particulars to general themes, and the researchers making interpretations of the meaning of the data".

The qualitative research in this study is guided by the constructivist worldview, which aims to gather a broad variety of views of the participants in order to understand the cultural and social settings of a problem (Creswell, 2014). The focus lies on letting the participant construct the meaning of the problem for themselves; therefore, the questions are kept broad and open to enable the participants to unfold their opinions (Creswell, 2014). Creswell (2014, p. 8) highlights that the desirable result is to "generate or inductively develop a theory or pattern of meaning".

In qualitative research, a number of research designs are available to direct and conduct the study (Creswell, 2014). The chosen research design is an explanatory sequential qualitative research based on the stakeholder theory. This particular research design involves several phases that have to be completed before the next phase can begin (Creswell, 2014). According to Creswell (2014, p. 224), "the overall intent of this design is to have the qualitative data help explain in more detail the initial results" found in literature and observations. Hence, the data is collected in two separate phases (Creswell, 2014).

During the first phase, information has been collected from literature and observations of two stakeholder workshops in the study region that were milestones within the initial project "Vorzeigeregion Tourismus – Energietechnologien & Innovationen Leben!" of AIT, Modul University and Mitplan GesmbH. This information has been analysed and used to create a conceptual framework on which the hypothesis and the interview guide are based. The next phase involved gathering primary data by conducting in-depth interviews via telephone with selected stakeholders from the LEADER-region Nationalpark Hohe Tauern. After the interpretation of the results, the hypotheses are tested and a stakeholder model is introduced. The individual sequential steps that were performed by the author are illustrated in Figure 10.
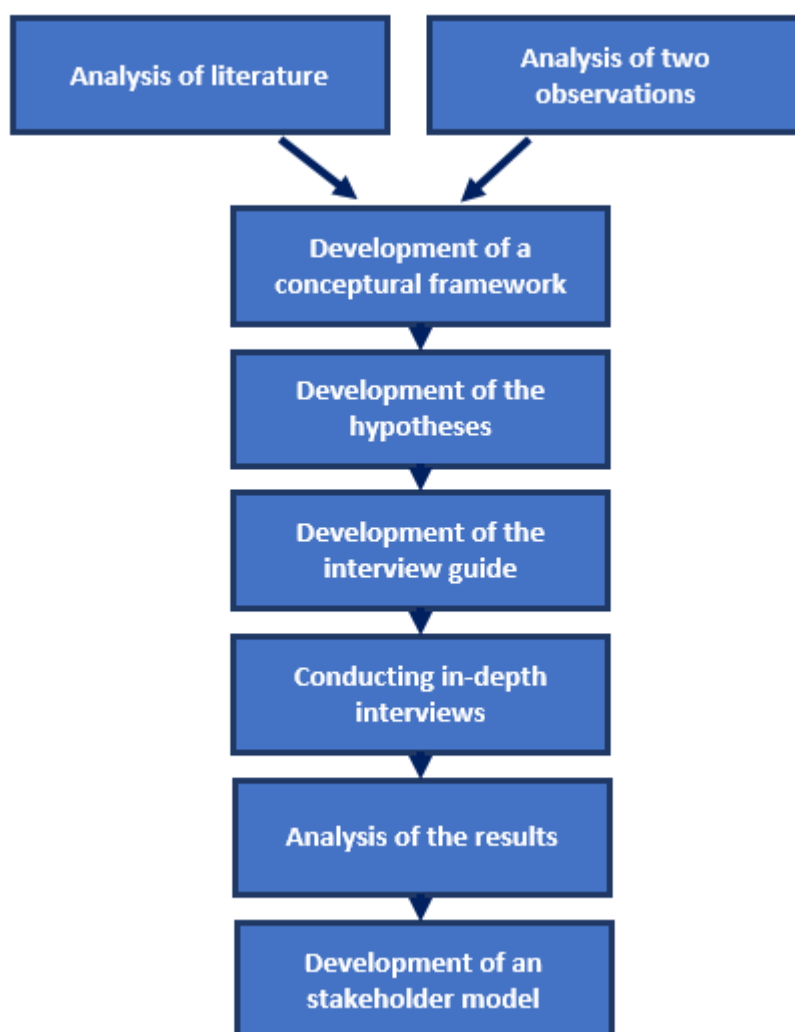
FIGURE 10: SEQUENTIAL STEPS PERFORMED BY THE AUTHOR IN THE STUDY

4.1 Hypothesis Development

Malhotra (2007, p. 54) defines hypothesis as "an unproven statement or proposition about a factor or phenomenon that is of interest to the researcher". When conducting an explanatory research, it is essential to develop and specify a hypothesis before the research is carried out, because it is said that an issue "cannot be scientifically solved unless it is reduced to hypothesis form" (Prasad et al., 2001, p. 5). According to Prasad et al. (2001, p. 5), using hypothesis allows the researchers to "identify the research objectives, […] the key abstract concepts involved in the research and […] its relationship to both, the problem statement and the literature review". The relationship between the research problem, the research question and the hypothesis along with the influence of the objectives, the theoretical framework and the analytical model is illustrated in Figure 11.
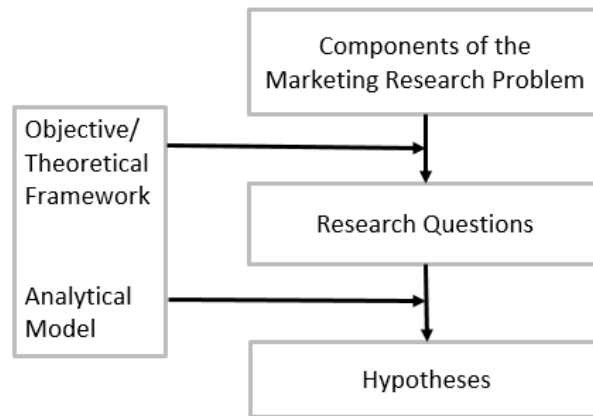
FIGURE 11: DEVELOPMENT OF RESEARCH QUESTIONS AND HYPOTHESES (SOURCE: MALHOTRA, 2007)

Through the formulation of the research question, it becomes apparent if a qualitative or quantitative research should be conducted (Malhotra, 2007). The hypothesis provides more insight information and guides the researcher on what issues are to be addressed and how data is collected (Prasad et al., 2001; Malhotra, 2007). However, Malhotra (2007, p. 54) states that "hypothesis go beyond research questions because they are statements of relationships or propositions rather than merely questions to which answers are sought. Whereas research questions are interrogative, hypothesis are declarative and can be tested empirically".

In order to develop the hypothesis on the creation of an energy-flagship region within the LEADER-region Nationalpark Hohe Tauern, a profound knowledge about the study region is needed. As can be seen in chapter 2, the region LEADER-region Nationalpark Hohe Tauern has been analyzed thoroughly. Patton (2002, p. 262) additionally recommends conducting observations in the field, since through "this way, evaluation users, for example, can come to understand program activities and impacts through detailed descriptive information about what has occurred in a program and how the people in the program have reacted to what has occurred." The seven hypotheses that are introduced in chapter 4.1.3 are based on the findings in the literature, results of the two observations and the conceptual framework that was created to narrow down the topic to fit the research question and be able to extract a hypothesis.

4.1.1 Observations

Through observations, the researcher can gain valuable insights to understand the context of situations by being open-minded, sensitive and discovery oriented (Patton, 2002). This allows collecting primary data without having to rely solely on information beforehand from written and oral sources (Patton, 2002). On top of that, Patton (2002) and Malhotra (2007) indicate the advantage of discovering routines and behavioural patterns that residents are not aware of. The researcher would furthermore be experiencing attitudes, preferences and habits that are too sensitive to talk and be interviewed about (Patton, 2002; Malhotra, 2007). Being part of a setting

and being close to people during the research can also have a positive impact during the interpretation phase, since the researcher can reflect on those experiences (Patton, 2002).

When conducting observations, the researcher has the choice of being a participant in the setting or just an onlooker, who is quietly observing (Patton, 2002; Malhotra, 2007). Patton (2002) describes that these two types of observations do not necessarily have to be independent of each other. There are cases in which the researchers are participants in the beginning and then during the course of study retreat and become solely observers and vice versa (Patton, 2002).

The description of the two stakeholder workshops below, does not draw a distinction between the two abovementioned concepts, because a mixed participation role has been applied. As has already been mentioned above, these two workshops were important milestones within the project "Vorzeigeregion Tourismus – Energietechnologien & Innovationen Leben!". The author has been directly involved in the organization of the workshops, the content planning and the on-site event management.

4.1.1.1 First stakeholder workshop

Meeting venue: Nationalparkzentrum Hohe Tauern, Gerlos Straße 18, 5730 Mittersill

Date: October 24, 2016

Invited stakeholder groups:

- LEADER-region management,
- Regional management,
- Mobility providers,
- Nationalpark management,
- Tourism service providers,
- Mayors,
- Technology providers,
- Tourism associations,

Agenda:

- Welcoming
- Presentation about the project "VorTEIL Vorzeigeregion Tourismus – Energietechnologien & Innovationen leben!"
- Presentation about ZIRBE (Energy region in Osttirol)

- Presentation about modern cable cars in cities
- Presentation about energy saving measures in hotels without losing guests
- Presentation about new trends for the touristic mobility

  After each presentation, the participants had the chance to ask questions and discuss the matter

- Collection of ideas of possible components of the energy-flagship region
- Closing remarks and outlook

During brainstorming on projects and initiatives that would be suitable for the region LEADER-region Nationalpark Hohe Tauern, the participants were able to present their ideas, thoughts and concerns. Additionally, every person received post-its (stick-on notes) to briefly mention their point(s) of view to visualize the needs for improvement. Throughout the process, three main categories of interest became apparent. Firstly, issues related to mobility in the region and the journeys of guests to and from the region have taken centre stage in the discussion. This category was named "mobility to, from and within the destination". Secondly, initiatives and projects for accommodation providers to monitor and manage resource and energy efficiency to become more sustainable have been mentioned too. This particular category has been assigned with the name "Initiatives for accommodation providers". The last category dealt with the awareness raising and education of the public, called "Awareness raising and education of public".

The collection of ideas within each category from the post-its are listed below:

Mobility to, from and within the destination:

- The main target group is supposed to be the residents, tourists and personnel in tourism
- Changes in the behaviour of people in terms of mobility preferences and consumer behaviour should be taken into account.
- The overall goal should be a holistic mobility system that strives for the expansion of public transportation routes and system and the transparent and affordable design of the transportation offers.
- Traffic flows and the user behaviour in the region should be coordinated and directed to reduce the traffic volume.
- The region should test and implement new technologies in the mobility sector and strive for an increase in electric mobility and a further development of electric filling stations.
- The Pinzgauer Lokalbahn, the regional railway system should be expanded and the existing technologies should be sensibly interlinked.
- Political actors are seen as essential and should be more frequently involved. The positioning of these actors is vital too.

- Another component of a successful energy-flagship region is the reduction in individual traffic and the improved public transportation connection to the city Salzburg.

Initiatives for accommodation providers:

- Hotels are the drivers of tourism; therefore, professionalism and a well-organized collaboration with tourism associations have to be established.
- Hotel management systems
- The price pressure for hotels is very high, which leads to low prices for high quality accommodations. But the goal should not be mass tourism.
- The development of resource efficiency for small companies and rural suppliers is seen as essential component of an energy-flagship region.
- The hotel sector is experiencing the problems of mobility first hand through the arrival of guests and their transportation at the destination.
- Regionality should be enhanced through the use of regional products, value chains and the cooperation with regional suppliers.
- Jobs in the tourism sector should be made more attractive for workers. Especially, appreciation, support of the public and unions are seen as important.
- When the tourism sector collaborates with the regional agricultural sector, it is expected to create new jobs. The offer of regional agricultural products in hotels should be extended too.
- Employees in the tourism industry are in direct contact with guests; therefore, positive word of mouth can have positive effects on the tourism demand.
- There is a demand for sustainable energy solutions in the region.

Education and awareness raising of the public:

- The target group of the energy-flagship region should consist of a variety of actors, such as the public and the residents, guests and tourists, personnel in the tourism sector and local businesses and enterprises. But the involvement of the public should be emphasized. Another focus was put on children, students and the youth in general. This group is seen as the guests of tomorrow and as future actors in the region that have to live with the consequences of today's actions.
- Regional flagship projects, along with projects that are in the implementation phase, should be identified and marketed.
- When creating an energy-flagship region, a common and long-term vision should be developed that consists of individual initiatives.
- Efforts to raise the awareness for sustainability in the region have to be undertaken.

▪ A wide range of knowledge exists in the region. An aim should be to keep and use this knowledge for progress and development of the region.

Generally, it can be said that the participants were very interested in the concept of the energy-flagship region and shared their experiences, ideas and concerns with the project team. The atmosphere has been productive, change-oriented and innovative. Therefore, it is not surprising that the main part of the workshop was spent on the generation of ideas and initiatives that should be included in the concept of the energy-flagship region.

In addition to the ideas in the three main clusters, the stakeholders communicated the wish to create an overall concept for the region Oberpinzgau, that includes topics such as industry, trade, mobility and culture. This concept should be designed as a long-term project to keep up with the global development and competition. This could include environmental management systems or eco-labels that are applied not only to the tourism industry, but also to the businesses from other industry sectors.

The Nationalpark Hohe Tauern has been of interest too for the regional stakeholders. The Nationalpark should be increasingly used to develop and position the region as a sustainable one. Touristic activities should be combined and adjusted to the Nationalpark concept to create a unique selling proposition (USP).

In a sustainable energy-flagship region, the use of alternative and renewable energy technologies, the implementation of new and innovative energy storage technologies, the energy generation through hydrogen, the creation of intelligent networks, and the expansion of district heating systems should be intensified. This might also increase the regional welfare. However, whenever economic development was mentioned, the participants agreed on a healthy and sustainable economic growth.

4.1.1.2 Second stakeholder workshop

Meeting venue: Nationalparkzentrum Hohe Tauern, Gerlos Straße 18, 5730 Mittersill

Date: November 28, 2016

Invited stakeholder groups:

▪ LEADER-region management,
▪ Regional management,
▪ Mobility providers,
▪ Nationalpark management,
▪ Tourism service providers,
▪ Mayors,

- Technology providers,
- Tourism associations,

Agenda:

- Welcoming
- Presentation of the results from workshop 1
- Presentation of the latest touristic trends
- Presentation of good practice examples in the study region as well as international ones
- Presentation of three scenarios for the study region
    1. Greening of the winter tourism
    2. Integrated climate neutral mobility
    3. Sustainable energy supply
- Group discussions on the individual scenarios

    The participants were able to join one of three groups to discuss the individual scenario proposals.
- Closing remarks and outlook

After the first workshop, the project team, consisting of the Austrian Institute for Technology, Modul University Vienna and Energy Changes, has used the collected ideas to develop the aforementioned three potential scenarios for the region. These scenarios have been presented to the participants to provide them with a basis for the group discussions. Afterwards, the participants split up into groups to discuss each concept in individual working groups. The results are presented below:

4.1.1.2.1 Scenario 1: Greening of the winter tourism

The overall goal is a holistic, year-round tourism offer (summer as well as winter tourism). To achieve this goal of a common concept and a regional identity, the regional collaboration of active actors has to be developed. Moreover, actors that can have a multiplier effect and attract other actors have to be mobilized. One such example is cableway companies, where they are seen as the driving force, in the sense that their innovative solutions, which could be introduced to make the cableway more environmentally friendly, would encourage others to follow. But then again, connecting technologies innovatively with each other and integrating that into the offer for guests would require a holistic approach. And so, the creation of a regional brand would support the aforementioned efforts. This would also lead to an increased welfare within tourism. Furthermore, the awareness of the public towards the role of tourism in the region has to be raised to enhance the image of this industry sector and to make tourism more attractive.

During the discussion, it was revealed that there are already many active actors in the region that work towards a holistic approach for tourism. However, these actors do not properly collaborate. Thus, the first goal should be to create a network between them, including a shift in the stakeholders' mind-set from thinking on the municipal level to thinking on the regional level. This would enable the region as a whole to gain a positive identity. Then the second goal would be to create a common concept for the region, or a regional brand, for which certain topics should be selected that the region stands for; this could be green winter technology and tourism in harmony with the Nationalpark values. In that regard, participants pointed out, that the cableway companies are a good example, likewise, for a well-functioning network – the connectedness that is still missing in the tourism sector. Consequently, the participants have agreed that the energy-flagship region would have a greater impact if the cableway companies are involved in its development.

A holistic and innovative idea generation should be, therefore, pursued collaboratively by all stakeholders. Later, this holistic concept can be marketed for tourism purposes, where relevant organizations shouldn't just sell their hotels, but also the extra offer within the region, the extra emotional components and USP. Even for the cableway companies, it is beneficial to strive for a holistic tourism, since the profitability can be increased through a year-round use of the cableways. Noteworthy here is that when creating the concept, existing infrastructure should be used, better connected and, if needed, extended. In this case, innovative technology solutions are required, not to mention that this also enables obtaining funding.

The participants that represented cableway companies stated that energy saving measures have a higher priority than the integration of renewable energies. The main argument was that whatever one can save does not have to be produced in the first place. Another point that was mentioned referred to the issue of wanting to become more independent of the electricity line network. The argument mentioned was that even though the electricity prices decrease, the electricity line usage charge increases. At the same time, energy storage issues are seen as important aspects when talking about energy efficiency.

When creating an energy-flagship region, the participants are certain that the public must be involved to increase the chances of success. The residents have to be sensitized towards energy related topics, sustainability and the welfare that tourism creates in the region. Currently, tourism is not valued among the public. But the development of an energy-flagship region in the tourism field is seen as a strategy to improve the image and to make jobs in this industry more attractive again.

4.1.1.2.2 Scenario 2: Integrated and climate neutral mobility

To develop this scenario, a status quo analysis of the mobility offers has to be conducted to identify development needs. Only then can the mobility offers be connected and made accessible to the guests and residents through mobility management measures such as apps or websites. To do so, the actors should think beyond the borders of their municipalities. That might cause challenges in the study region, since the region is very large. For that reason, the involvement of the public is important. Residents can also act as mobility suppliers through car-sharing or car surfing (similar concept to couch surfing). A platform could be created that offers car-sharing options and electric bikes, and hotels could market these options too. However, in order to reduce individual traffic, the offer of the public transportation services have to be designed more attractively. This does not only refer to the regularity and connection, but also to the prices of the tickets.

The participants of this discussion group were certain that there is already a vast amount of offers in the mobility sector and many projects have been implemented. However, these initiatives and projects have to be transparent, visible and easily accessible for the public. A holistic mobility concept of the public transportation system would be desirable, but this is challenging due to the size and extension of the region. Several measures have been suggested to improve the system and make it more accessible:

- Introduction of an integrated trip planner for different transportation systems
- A platform that shows the availability of electric car-sharing or electric bike-sharing options
- Development of a map that shows the available electric filling stations for cars and bikes with the possibility to reserve a free station
- Apps for booking of and payment for public transportation services
- Reservation systems for shuttle busses to and from the hotel
- Platforms for car surfing options

Along with that, the electric mobility infrastructure should be further developed. As already mentioned before, this includes coordinating the electric filling stations, expanding the electric bike lending system, introducing electric car-sharing and the electrification of the local railway, the Pinzgauerbahn.

The participants also agreed in terms of door to door mobility solutions. Until now, offers for "the last mile" are insufficient. Every municipality in the region Pinzgau has the same problem: there are hotel shuttle busses, but these are not connected to each other. Another important aspect is the demographic transition that should be taken into account when planning transportation connections. So far, the public transportation tickets are far more expensive than taking the car for the same journey, not to mention that taking the car saves time, since the

connections of the public transportation services take longer. The participants claim that a general acceptance and willingness to use the public transportations exists, since the number of users has increased from 280,000 to 700,000 within the past nine years. The idea to introduce a transportation ticket for residents that is partially funded by the provincial government would further raise this number. To attract even more public transportation users, the schedule of the means of transportation has to be adjusted according to students and workers.

Awareness raising and education are seen as helpful too when planning a better transportation system. The main challenge is to answer the question of how to get further once arrived at the train station. Tourists usually plan their trips thoroughly and get information. The residents of the region however, lack this information and therefore, they prefer the car.

The participants share the opinion that different stakeholders have to be included in the planning process and the implementation of innovative transportation solutions. These refer to:

- Politicians
- Decision makers that create the schedules
- Decision makers that decide upon the ticket prices
- Provincial government of Salzburg
- Klima- und Energiemodellregionen
- LEADER-regions
- Nationalpark management Hohe Tauern
- The public

4.1.1.2.3 Scenario 3: Sustainable energy supply

In an energy-flagship, it is essential to develop a vision that is communicated within and out of the region and that is lived by the residents. Therefore, the awareness of children, the youth, media, trade and businesses, and industry has to be increased. Even politicians and advocacy groups have to be sensitized for topics of the energy-flagship region. Several ideas have been named, but when it comes to the implementation of renewable energy projects, legal requirements have to be taken into account and met. An energy-flagship region also offers the potential of the introduction of new business models.

One of the participants has implemented several measures in the field of renewable energy and social commitment and is certain that these measures are beneficial for his company. The sick leave rate in this company (1%) is far below the national average of 3%. But these measures should be implemented by a wide range of businesses and industry sectors; having the cableway companies as a pioneer is not enough. And the participants agreed on the need of an overall controlling body that coordinates the projects and initiatives within the energy-flagship region to ensure that the overview does not get lost.

On the other hand, the major challenges that might affect the energy-flagship region negatively are the complex regulations and authorities, the vast funding system and difficult application process. Developing and implementing projects in the sustainability field requires high efforts, high costs and high time consumption. However, public buildings and buildings of authorities should be increasingly used as flagship projects.

The participants further mentioned the importance of the next generation. The energy-flagship region should also target young people and make the vision tangible for them. The main argument behind this is that the younger generations should have a liveable life in the region in the future. Hence, awareness raising and education for young people is seen as a major contributor to the successful implementation of the energy-flagship region. Further stakeholders that should be involved are:

- Mayors
- Tourism associations
- Chamber of commerce

These stakeholders should be brought together with companies to enable an information exchange on how to assist companies in projects and which regulations are counterproductive. Furthermore, the expertise of people that have a profound knowledge of regulations, application processes and the energy laws are desirable.

Participants generated some ideas that should be implemented in the scenario sustainable energy supply:

- Saving energy internally
- Using and expanding photovoltaic panels on noise protection walls
- Merging of storage pools into a small hydropower plant
- Reducing the legal and bureaucratic requirements for the project implementation
- Developing and using contracting models
- Storing of energy
- Awareness raising and educating the public and the younger generations

After the presentation of the results of the individual working groups, the participants were asked to assist in the development of the regional vision. This should be a guiding principle to connect nature and sustainability with tourism. The region Pinzgau aims for positioning itself as an innovative energy-flagship region which stands for tradition, tourism and nature. Hence, the following statement was created as the vision: Responsible touristic development of the region Pinzgau with innovative and resource saving technologies.

4.1.2 The conceptual framework

The prior chapters have explored why the development of an energy-flagship region is beneficial to Alpine regions and have furthermore, illustrated good practice examples of existing energy regions in European German-speaking countries. To get additional information about the region, its residents and its dynamics, two observations have been conducted. These findings will assist in answering the research question "How do regional stakeholders imagine an energy-flagship region and what are they willing to do to achieve it?" through the creation of a conceptual framework that will act as a guide for the development of hypotheses and later for the chosen research method.

The first part of the conceptual framework is based on a document analysis of the different energy regions in European German-speaking countries and the concept of the energy-flagship region in Austria. It is a collection of possible components.

The results of the observations of the two stakeholder-workshops were implemented in the second part of the framework. The components of a potential energy-flagship region have been narrowed down according to the perception of the workshop participants. This part will be the basis for components that are used in the interview guide to get insights about the importance of the individual elements for the interviewees.

The interviewees will be selected from the six stakeholder groups: administration, tourism organizations, mobility providers, technology providers, energy providers and natural protection and conservation organization. The third part of the conceptual framework illustrates the mentioned stakeholder groups which are the basis for the sampling process.

As already mentioned above, the conceptual framework is the basis for the development of the hypothesis and the interview guide. In order to answer the research question, topics such as the importance of the individual components of an energy-flagship region, the need for adjustments to achieve it, the willingness and interest of regional stakeholders to contribute to the development as well as financial aspects will be examined through in-depth interviews.

In the end, the collected information will aid in testing the hypotheses and giving recommendations on the creation of an energy-flagship region.

4.1.2.1 The graphical representation of the conceptual framework

Components of a sustainable tourism flagship region retrieved from different sources of literature.	
National and international positioning (Destination marketing)	Integration of different industry sectors
Networking of stakeholders throughout the whole value chain	Increase in self-sufficiency (energy and resources)
Cooperation within the region	Use of renewable energy sources
Knowledge and technology transfer within the region	Reducing energy consumption
Tourism is the driving force of the economy	Enhancing and protecting natural and cultural heritage
Diverse touristic offers	Education and awareness raising
Mobility of persons	Authentic and clear communication
Sustainability (economic, environmental and social)	Creation of local benefits and development
Use of regional potentials	Monitoring and managing impacts
Regional value creation	Responding to climate change
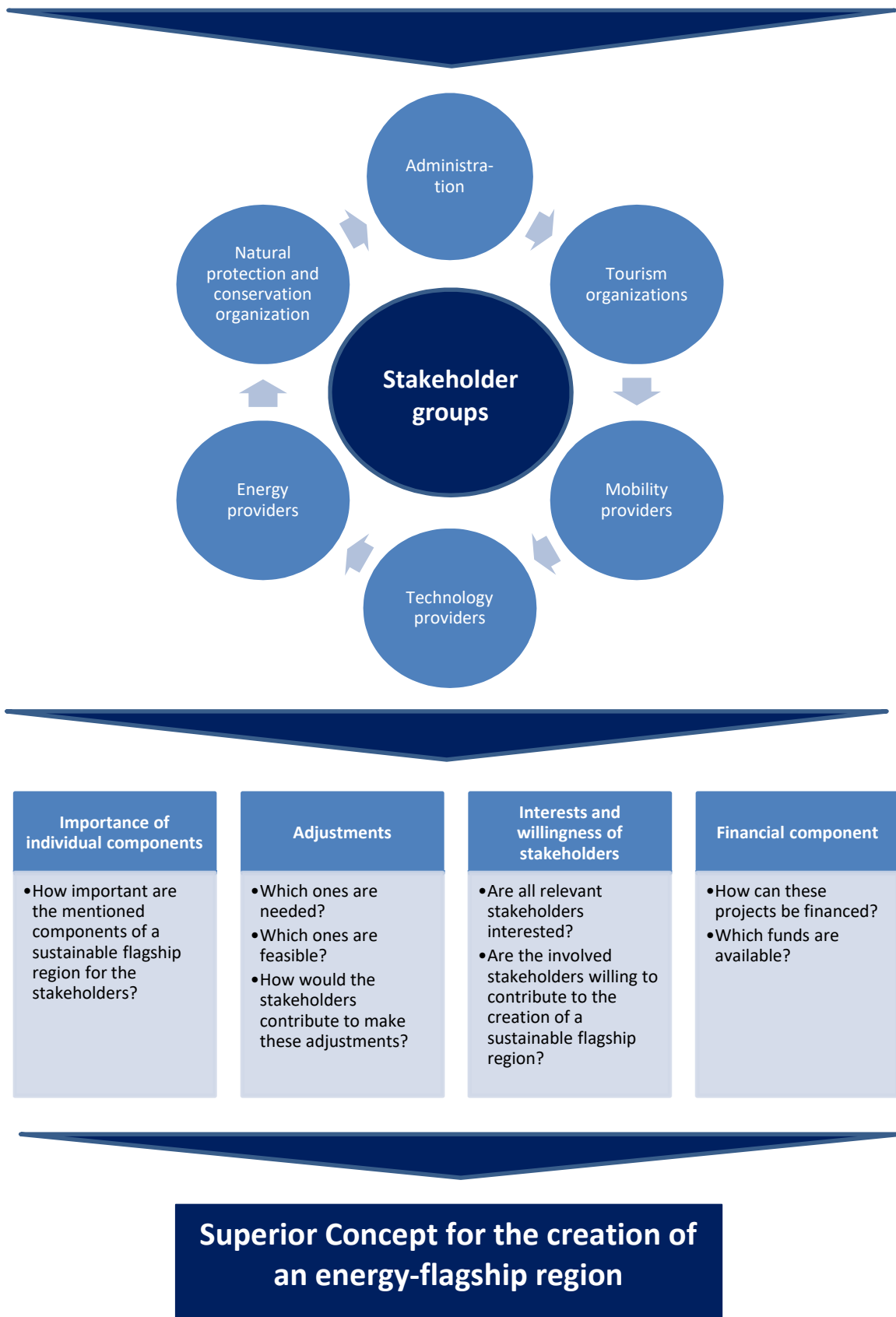
FIGURE 12: THE CONCEPTUAL FRAMEWORK

4.1.3 Hypotheses

In addition to the conceptual framework, Table 3 (see page 58 and 59) was used as a basis for the hypothesis development, because it summarizes the findings within the literature (see chapter 3.2 and 3.3) and the observations in the study region (see chapter 4.1.1). During the analysis of successfully implemented energy-flagship regions, several similarities were distinguished among their core components, such as striving for competitive advantage, combating climate change, and long-term planning, to name just a few. These similarities, as illustrated in Table 3, have proven to contribute to the success of flagship regions and are therefore, an excellent basis for the hypotheses.

4.1.3.1 1st Hypothesis: An energy-flagship region is seen as a collection of several energy related innovative measures that provide the region with a competitive advantage in order to counteract the consequences of climate change and to benefit (in monetary and non-monetary terms) long-term from sustainable measures.

In order to become an energy-flagship region, literature has shown that the regions have implemented a variety of energy related and innovative measures instead of just one. Deciding upon which measures are suitable, requires a profound knowledge about the regions' characteristics, strengths, weaknesses, opportunities and threats. Only then can a competitive advantage be gained and the region positioned nationally and internationally. The analysed energy-flagship regions clearly committed to a long-term vision and aim for addressing challenges connected to climate change.

4.1.3.2 2nd Hypothesis: Every component of the conceptual framework is perceived with a different importance by the individual stakeholder groups.

As has been identified in the literature and can be seen in the summary of Table 3, every energy-flagship region recognizes the fact that the components and offers within a successful energy-flagship region have to be tailored towards regional potentials and the aspirations of individual stakeholder groups, because each potential component has a different value for them.

4.1.3.3 3rd Hypothesis: The most important aspects among all stakeholder groups are energy and mobility topics.

As examples in the literature have shown, the most important measures within an energy-flagship region refer to energy and mobility. Even sustainable tourism principles emphasize on the importance of environmentally friendly energy and mobility measures.

4.1.3.4 4th Hypothesis: Collaboration of stakeholders throughout the value chain and the inclusion of the public are seen as crucial for a successful energy-flagship region.

The literature has shown that the individual energy-flagship regions aim for improving and expanding collaborations and cooperations within stakeholder groups along the value chain and industry sectors. Many energy-flagship regions also attribute a special importance to the public, where it is seen as a main supporter for such projects. It can be said that an energy flagship region stands or falls with the position of the public towards it.

4.1.3.5 5th Hypothesis: An overall controlling body that coordinates the measures is needed.

The literature has also identified that the measures, initiatives and projects within energy-flagship regions are usually managed and coordinated through an overall controlling body.

4.1.3.6 6th Hypothesis: The stakeholders are interested and willing to contribute to the creation of an energy-flagship region on top of their core responsibility, because they see an additional value in it.

This hypothesis is based on the observations that revealed a general interest and willingness to contribute to the development of a sustainable energy-flagship region. Participants pointed out that an energy-flagship region does not only provide the region with monetary, but also with non-monetary benefits.

4.1.3.7 7th Hypothesis: Stakeholders prefer to be involved in the development of an energy-flagship region within their field of work.

As the observations, specifically the group discussions, have furthermore shown, the stakeholders tend to contribute more likely to topics that are related to their main responsibility and field of work.

Topic	EnergieRegion.NRW	Energieregion Lausitz	100ee Regionen	EnergieSchweiz für Gemeinden	Energieregion-Bern-Solothurn	Austrian energy-flagship region	Sustainable tourism principle	Results of observations
Characteristics of measures	When choosing a topic within the eight networks, the main focus is put on innovative and climate friendly energy technologies.	The Energieregion Lausitz accepts the challenges of the energy revolution and strives for innovative energy solutions.	The goal is to apply energy related innovative measures to reduce the energy consumption, increase energy efficiency and so on.	The goal is to apply energy related innovative measures in the field of renewables.	The goal is to apply energy related, innovative measures in the field of renewables.	The goal is to create energy related and innovative measures to demonstrate energy and mobility systems in the real market.	The goal is to create innovative and sustainable tourism measures.	The goal is to create a superior concept of energy related innovative measures.
Aim for competitive advantage	The goal is to position the region internationally and nationally.	The region benefits from the competitive advantage that the concept of the Energieregion Lausitz offers in terms of business, living and tourism location.	-----	EnergieSchweiz aims for strengthening the competitive advantage of the partner municipalities.	The Energieregion Bern-Solothurn aims for a high regional welfare and gaining a competitive advantage.	The energy-flagship region should provide the region with a competitive advantage while positioning Austria internationally.	The tourism industry has recognized that the competitiveness depends increasingly on sustainability.	Increasing the competitiveness and strengthening the international position of the region was seen as an advantage.
Addressing climate change	Through the EnergieRegion. NRW, the region strives for climate protection.	The region strives to address challenges of the energy revolution to become more climate friendly.	Through this project, the energy revolution should be shaped positively to counteract the consequences of climate change.	Through the implemented measures, climate change and the energy revolution should be addressed.	-----	-----	The goal is to act proactively against climate change.	The region strives to become more energy efficient to address challenges of the climate change.
Long or short-term perspective	Long-term perspective	Long-term perspective	Long-term perspective	Long-term perspective	Long-term perspective	medium-term perspective	Long-term perspective	Long-term perspective
Distribution of importance among potential components	The EnergieRegion.NRW has recognized the importance of target group specific offers,	The Energieregio Lausitz has six different competence fields, that are differently	Every partner municipality has different aspirations and different conditions of the	EnergieSchweiz believes that it is more sensible to use renewable energies that suit	The Energieregion Bern-Solothurn has recognized the different potentials within the region.	Within the first phase of the project, the important components of an	The tourism principles have to be adjusted to the specific case, since the concept	The components of a potential energy-flagship region are perceived with

	EnergieRegion.NRW	Energieregion Lausitz	100ee Regionen	EnergieSchweiz für Gemeinden	Energieregion-Bern-Solothurn	Austrian energy-flagship region	Sustainable tourism principle	Results of observations
	since the individual networks have a different importance for the partners.	developed in the individual partner provinces.	land. Therefore, potential components of the sustainable region have a different importance.	the site conditions ecologically and economically.	Therefore, not all measures apply to every municipality.	energy-flagship region have to be agreed upon. This depends on the conditions of the region as well as already existing infrastructure.	has to be designed according its conditions.	different importance.
Focus of measures	The focus lies on energy.	The focus lies on energy, mobility, tourism and economy.	The focus lies on energy.	The focus lies on energy and mobility.	The focus lies on energy.	The focus lies on energy and mobility.	The focus lies on energy, mobility and tourism issues.	The focus lies on energy, mobility, hotels and awareness raising.
Importance of cooperations and collaborations	The EnergieRegion.NRW strives for an increased collaboration of actors throughout the value chain.	The Energieregion Lausitz is characterized by a strong collaboration of actors of different sectors along the value chain.	The project 100ee Regionen aims for enhancing and closing regional value chains.	EnergieSchweiz encourages the collaboration of communities and stakeholders along the value chain.	The aim of the Energieregion Bern-Solothurn is to enhance the regional welfare and include actors from the whole value chain.	The energy-flagship region should include the public and companies along the value chain.	In sustainable tourism principles, an important part is the collaboration of the tourism industry with other industries and the cooperation of companies along the value chain.	The region puts an emphasis on the importance of cooperations between industry sectors and companies along the value chain.
Overall controlling body	A platform combines the involved partners and acts as an information and communication hub.	The Energieregion Lausitz-Spreewald GmbH is the administrative office of the Energieregion Lausitz.	The project is led by the „Institut Dezentrale Energietechnologien"	-----	The Energieregion Bern-Solothurn is an association consisting of municipalities and an energy supply company.	The goal is to create a cooperation and management structure that takes over the responsibility of the project.	-----	An overall controlling body is seen as essential for the success of the energy-flagship region.
Topic	**EnergieRegion.NRW**	**Energieregion Lausitz**	**100ee Regionen**	**EnergieSchweiz für Gemeinden**	**Energieregion-Bern-Solothurn**	**Austrian energy-flagship region**	**Sustainable tourism principle**	**Results of observations**

TABLE 3: SIMILARITIES FOUND IN THE LITERATURE FOR HYPOTHESIS DEVELOPMENT

4.2 Stakeholder theory

Stakeholder theory has arisen from the framework of managerial capitalism, when R. Edward Freeman recognized the need to reform this concept by shifting the focus from satisfying stockholders to including stakeholders into the core of the organizational philosophy (Freeman, 2001, 2014). Freeman (2001, p. 39) is certain that "each of these stakeholder groups has a right not to be treated as a means to some end, and therefore, must participate in determining the future direction of the firm in which they have a stake".

Nowadays, stakeholder theory is not only solely connected to concepts of corporations anymore, it is also recognized as an essential and widely used tool in social, environmental and sustainable management research that deal with public participation and engagement activities (Colvin et.al., 2015; Hörisch et al., 2014). Public participation yields several benefits: researchers are not only able to gain access to people that are affected by the outcome and to a wide range of perspectives, but also alter and enhance the acceptance towards the project through valuable insights into the social structure of the target group (Colvin et al., 2015).

Hörisch et al. (2014) indicate that it is essential to choose among the different types of stakeholder theory first and to use an appropriate approach for the particular project or issue.

4.2.1 Different types of stakeholder theory

Type of stakeholder theory	Focus
Descriptive/empirical stakeholder theory	Identifying essential stakeholders; illustrating how an organization is managed
Instrumental stakeholder theory	Measuring the effects of stakeholder management on the achievement of organizational goals
Normative stakeholder theory	Exploring the purpose of the organization; including moral aspects of stakeholder theory
Integrative stakeholder theory	Seeing the descriptive, instrumental and normative elements of stakeholder theory as connected

TABLE 4: DIFFERENT TYPES OF STAKEHOLDER THEORY (HÖRISCH ET AL., 2014)

Table 4 describes four different versions of the stakeholder theory, which are descriptive/empirical, instrumental, normative and integrative stakeholder theory. However, for the purpose of this study, the focus will lie on Freeman's normative stakeholder theory which merges descriptive, empirical and normative features (Colvin et al., 2015; Freeman, 2001, 2014),

because they are "inextricably linked to the way that corporations should be governed and the way that managers should act" (Freeman, 2001, p. 44).

4.2.1.1 Normative core of the stakeholder theory

As has already been mentioned above, the normative core of a stakeholder theory must answer the questions "How should corporations be governed?" and "How should managers act?". Freeman (2001) further adds another objective: "What are the background disciplines of 'value creation'?". However, each normative core and answer to these questions can have a different standpoint or view.

Freeman (2001, 2014) distinguishes between three principles: Doctrine of Fair Contracts, Feminist Standpoint Theory and Ecological Principles. All these views have one aspect in common: All three principles acknowledge that the "business" part cannot be separated from the "ethical" part and that an equality between the stakeholders exists (Freeman, 2001, 2014). This is the ideal state in a corporation and it can serve as a standard for the creation of corporate structures and processes (Freeman, 2001, 2014).

Freeman's first standard, the Doctrine of Fair Contracts, is guided by six ground rules to enhance fairness and equality (Freeman, 2001, 2014):

1. The Principle of Entry and Exit:
   Every contract has to state terms under which a stakeholder can enter into a contract, exit it or renegotiate its content.
2. The Principle of Governance
   The conditions and the content of a contract can only be changed if all parties unanimously agree to the changes.
3. The Principle of Externalities
   If a third party outside of the contract is facing a cost or challenge due to the contract between two parties, then this party is eligible to enter the contract and renegotiate the conditions.
4. The Principle of Contracting Costs
   All costs that occur, must be shared by the parties of the contract.
5. The Agency Principle
   Any agent must consider the interests of all stakeholders and act accordingly.
6. The Principle of Limited Immortality
   A continued existence of the business is in the interest of the stakeholder, since usually their livelihood depends on it. The corporation should, therefore, be operated as if it could satisfy its stakeholders' interests indefinitely.

Freeman's (2001, 2014) second standard, the Feminist Standpoint Theory, says that businesses and managers should align their actions and policies according to principles of caring for and maintaining of relationships, and creating and connecting stakeholder networks.

The third and last principle, the Ecological Principle, focuses on caring for and preserving the planet (Freeman, 2001, 2014).

Freeman (2001, p. 47) is convinced that these principles and rules "would guide actual stakeholders in devising a corporate constitution or charter […] and its accompanying background narratives are to effect real change".

But in order to apply these standards, the stakeholders have to be identified first.

4.2.2 The stakeholder analysis

Before engaging with stakeholders, it is necessary to conduct a stakeholder analysis to identify who has a stakeholder status for the particular issue (Colvin et al., 2015). Schmeer (2015) defines a stakeholder analysis as "a process of systematically gathering and analysing qualitative information to determine whose interests should be taken into account when developing and/or implementing a policy or program". The expert should have a profound understanding of the targeted outcome of the decision in order to be able to get familiar with the complex structures of society to determine who to classify as a relevant stakeholder (Colvin et al., 2015). Freeman (2001, p. 42) defines stakeholders in a narrow sense as "groups who are vital to the survival and success of the corporation". The broader definition of stakeholder "includes any group or individual who can affect or is affected by the corporation" (Freeman, 2001). The overall aim is to identify stakeholders, namely persons or organizations that are involved or interested in, affected by or can affect the project or programme (Colvin et al., 2015; Hörisch, 2014; Schmeer, 2015). Analysing stakeholders is a useful method to categorize their interests and knowledge, their networks, positions and importance related to the decision outcome and project (Colvin, 2015; Freeman, 2001, 2014; Schmeer, 2015).

To illustrate an example of a stakeholder analysis, Freeman (2001) identified the typical stakeholders in an organization as followed:
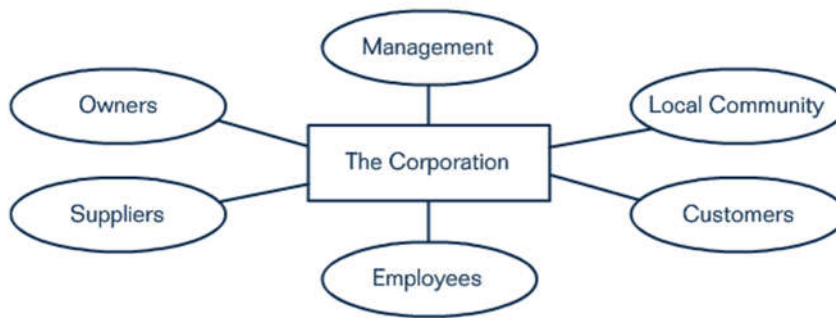
FIGURE 13: A STAKEHOLDER MODEL OF THE CORPORATION (FREEMAN, 2001)

Freeman (2001) is aware that the stakes of each party vary among different corporations, but some common notions are apparent:

- Owners are usually financially involved in the corporation. These stakeholders might hold stocks or bonds for which in return, they yield dividends. The financial wellbeing of the firm will also affect the living standard of the owners.
- Employees work for organizations to secure their livelihoods. Their relationship consists of mutual giving and taking: Employees offer corporations their skills and loyalty for wages, benefits and meaningful work.
- Suppliers are responsible for providing companies with the respective raw materials and are therefore, essential for the company's success. The goods that are delivered determine the quality of the final product, the price and, in the end, have an influence on the profit.
- Serving customers and satisfying their needs with products and services, yields revenues for the company. By doing so, the company is not only able to address the needs of the owners and suppliers by making profits, but it is also able to invest into the development of its business.
- A company is also obligated to foster the local community by respecting their relationship and by avoiding inconveniences and hazards for the citizens.
- The management has a very essential role to every corporation: it has to balance the conflicting needs of all stakeholders by finding compromises and trade-offs.
- Competitors and the government would be included in the broader definition of stakeholder.

4.2.3 Approaches to identifying stakeholders in environmental management

Before identifying the stakeholders, one has to determine if a public participation or a stakeholder engagement approach will be used (Colvin et al., 2015). Public participation aims to involve the broad public into the decision-making process, whereas stakeholder engagement requires a thorough analysis of the society to select those who are affected by or are able to

affect the decision (Colvin et al., 2015). Colvin et. at. (2015, p. 267) states that "while the normative definition of stakeholder may include any and all people who have some degree of interest (including moral interests) in an issue, a strategic definition of stakeholder captures only those stakeholders whose engagement can be viewed as a pragmatic requirement for successful outcomes". Choosing stakeholders in the strategic sense, therefore, depends on the evaluation skills of the practitioner responsible for the stakeholder analysis (Colvin et al., 2015).

4.2.3.1 Who are stakeholders?

Colvin et al. (2015) has identified four social structures that are essential in stakeholder analysis. First, Colvin et al. (2015) listed individuals like regional managers or politicians. The second category is dedicated to social constituencies; retirees, businessmen or hoteliers would belong there (Colvin et al., 2015). Third, groups such as environmental activist groups, sports groups or regional management unions are accounted for in another category (Colvin et al., 2015). Last but not least, Colvin et al. (2015) summarized the government or NGOs in the classification 'organizations'.

4.2.4 Similarities between stakeholder theory and sustainable management

The aim of the stakeholder theory is to create common interests between various parties rather than addressing trade-offs (Hörisch et al., 2014). Hörisch et al. (2014) state that these mutual interests act as a basis for enhancing value for all affected stakeholders.

Sustainable management addresses the challenge to overcome trade-offs too, since those are seen as counterproductive for improving sustainable development (Hörisch et al., 2014). It should be rather focused on pursuing targets that benefit all stakeholders such as preserving the environment (Hörisch et al., 2014).

However, Hörisch et al. (2014) specifies several other similarities:

First, stakeholder theory and sustainable management, both, acknowledge the importance of serving all stakeholders rather than just shareholders. They also pose questions about the purpose and the scope of the particular corporations.

Second, ethical aspects cannot be seen in isolation to the business. Ethics and business are inseparably connected. This does not only consider the social dimension, but also the environmental one.

Third, "companies are challenged to integrate responsibility into their core business" (Hörisch et al., 2014, p. 332). Therefore, both, stakeholder theory and sustainable management oppose

residual Corporate Social Responsibility (CSR), since it sees ethical issues as independent from the business.

Fourth, since stakeholder theory and sustainable management believe in the interlinkage of ethical and business aspects, they also accept that profit making is not immoral. Hörisch et al. (2014, p. 332) state that "scholars regard social and environmental concerns not as necessarily conflicting to financial ones and frequently address the possibilities to create business cases for sustainability".

Fifth, both concepts have not only a short-term, but also a long-term view.

Sixth, since stakeholder theory and sustainable management look at different aspects (eg. social or economic), both include other factors and issues into management approaches and make the system more complex.

Seventh, stakeholder theory and sustainable management are both active to improve quality of life.

Lastly, both concepts contain descriptive, empirical and instrumental aspects.

4.2.5   Dissimilarities between stakeholder theory and sustainable management

Even though stakeholder theory and sustainable management show several common features, there can still be some inconsistencies detected (Hörisch et al., 2014).

First, sustainable management deals with social, environmental and economic dimensions and sees them as interdependent. Stakeholder theory, on the other hand, focuses on value creation, but does not emphasize specifically on the three dimensions.

Second, sustainable management acknowledges the fact that the economic system and its businesses are part of the biosphere and therefore, nature and its ecosystems take a major role in this doctrine.

Third, sustainable management gives priority to sustainable development in the three dimensions of society, environment and economy. It says that the society, companies and markets contribute to sustainable development. Stakeholder theory, however, does not specify the ultimate goal.

Fourth, sustainable management deals with long-term perspectives and goals, whereas stakeholder theory rather focuses on intergenerational aspects.

4.2.6 How can stakeholder theory contribute to sustainable management?

Hörisch et al. (2014, p. 336) distinguishes between two ways of including the environment into a stakeholder analysis: "considering nature as a stakeholder or alternatively considering human beings, groups, and organizations as stakeholders who analyse and interpret developments in nature".

In a capitalistic world, stakeholders do not act morally anymore, they rather focus on trade-offs (Hörisch et al., 2014). This involves a long process of negotiations to develop common interests (Hörisch et al., 2014). Especially, in terms of sustainability, it can cause challenges, since it first has to become valuable enough to be considered as a mutual interest (Hörisch et al., 2014).

Being able to do so, Hörisch et al. (2014) identified three challenges that have to be overcome first:

1. Raising awareness about and embedding sustainability in the minds of all stakeholders.
2. "Creating mutual sustainability interests based on the particular sustainability interests of single stakeholders" (Hörisch et al., 2014, p. 336)
3. Empowering the public as a stakeholder to take a stand for the environment and demand environmentally friendly processes and the solutions for challenges.

To tackle these issues, Hörisch et al. (2014) has created a framework of three pillars: education, regulation and value creation. Education is a key factor in raising awareness and anchoring sustainability aspects in the minds of people (Hörisch et al., 2014). This does not only refer to skills and knowledge, but also to an increased awareness (Hörisch et al., 2014). Hörisch et al. (2014) is also certain that policy makers have the power to create incentives for stakeholders to enhance sustainability initiatives. Such policies can trigger innovations and collaborations (Hörisch et al., 2014). And last but not least, sustainable activities have to be perceived to create value for people not only in monetary terms, but also in terms of improved quality of life (Hörisch et al., 2014).

Hörisch et al. (2014) are convinced that applying the three measures, education, regulation and value creation, provides a wide range of benefits that contribute to sustainable management. Firstly, once people perceive sustainable activities to create value, sustainability becomes desirable and a mutual interest of all stakeholders (Hörisch et al., 2014). Secondly, not only are stakeholders identified for their vitality for the promotion of sustainability, but also information about their interest, power and involvement in a corporate context can be obtained (Hörisch et al., 2014). Thirdly, the profound information about stakeholders can assist in developing sustainable measures that will enable a wide stakeholder cooperation and engagement (Hörisch et al., 2014).

Hörisch et al. (2014) has also identified several benefits of sustainable management for the individual stakeholders: Suppliers, for example, can gain a competitive advantage and develop a USP, if innovative and sustainable solutions are found and promptly implemented. The society benefits from an increased wellbeing, ecological welfare, quality of life and flourishing businesses. New income and revenue streams are created for financiers and managers will benefit from creating value for the company and its stakeholders.

However, to generate those benefits, political and societal institutions have to be founded in order to promote business conditions that accommodate sustainable development measures, and a smooth and successful exchange between stakeholders (Hörisch et al., 2014).

4.3   Conducting a stakeholder analysis

Before starting the stakeholder analysis, it is essential to define the purpose of the analysis and to identify persons who will make use of the collected information and how this information can be used (Schmeer, 2015). Planning the process of a stakeholder analysis also includes deciding upon the research design and the research method as well as a timeline that identifies the major milestones starting from scratch up to the final presentation of the results (Schmeer, 2015). During the next steps, the appropriateness of the policy or project has to be evaluated to ensure that a useful and proper stakeholder analysis can be conducted (Schmeer, 2015). Criteria such as the specificity, definability and currency of the project are explored (Schmeer, 2015). According to Schmeer (2015), it is only sensible to analyse projects that are defined in a concrete manner. Furthermore, Schmeer (2015) states that the project should be controversial in social and political term. Once this evaluation is completed, the main ideas, concepts and strategies of the project should be defined in order to use this information for the data collection (Schmeer, 2015).

4.3.1 Different types of stakeholders

Documents and articles on the internet related to the project have to be analysed to identify its key stakeholders (Mitchell et al., 1997; Schmeer, 2015). The goal is to detect all stakeholders that have an actual or potential stake in the project and to develop a list that illustrates them (Mitchell et al., 1997; Schmeer, 2015). Mitchell et al. (1997, p. 854) state that "classes of stakeholders can be identified by their possession or attributed possession of one, two, or all three of the following attributes: (1) the stakeholder's power to influence the firm, (2) the legitimacy of the stakeholder's relationship with the firm, and (3) the urgency of the stakeholder's claim on the firm" (as depicted in Figure 14). Apart from corporations, this theory can be applied to any sort of activity or project that involves a range of stakeholders (Schmeer, 2015).

FIGURE 14: QUALITATIVE CLASSES OF STAKEHOLDERS (SOURCE: STAKEHOLDER-MAP.COM, 2017)

Mitchell et al. (1997) add the theory of stakeholder salience as another dimension to recognize the fact that every situation is dynamic and unique and influences managerial perception and attention differently. Therefore, Mitchell et al. (1997, p. 855) argue that "to achieve certain ends, or because of perceptual factors, managers do pay certain kinds of attention to certain kinds of stakeholders [...] and managers' perceptions dictate stakeholder salience". Hence, each attribute, whether power, legitimacy or urgency, has a different role in stakeholder-manager relations and it is not possible to deliver a standard solution or approach (Mitchell et al., 1997). Researchers agree (Mitchell et al, 1997; Freeman, 2001; Schmeer, 2015; Colvin et al., 2015) that every case has to be analysed individually and systematically to identify the presence or absence of the abovementioned attributes.

When attempting to conduct a stakeholder analysis, researchers have to be aware of these attributes to identify stakeholders and to be able to draw a stakeholder map later (Mitchell et al., 1997).

There are many definitions for power, but the essence of each is that power is the ability of stakeholders to influence other actors and to overcome resistance to achieve a certain outcome (Mitchell et al., 1997; Schmeer, 2015). Mitchell et al. (1997) state that power can be exercised through physical (force), material and financial, and/or symbolic resources. Another important characteristic of power is that it can be gained, extended and even lost (Mitchell et al., 1997).

The second attribute, legitimacy, is often used in combination with power (Mitchell et al., 1997). Mitchell et al. (1997, p. 866) define legitimacy as "socially accepted and expected structures or behaviours". Even though many scholars link legitimate behaviours to power, Mitchell et al. (1997, p. 866) believes that "legitimacy and power are distinct attributes that can combine to create authority […] but that can exist independently as well". Mitchell et al. (1997, p. 866) justify this statement by drawing attention to the example of a stakeholder that "may have legitimate standing in society, or it may have a legitimate claim on the firm, but unless they have either power to enforce their will in the relationship or a perception that their claim is urgent, they will not achieve salience for the firm's managers." This directs the attention to the third and last attribute: urgency. This component increases the dynamics of the model further and delivers insights into the stakeholder-manager relationship (Mitchell et al., 1997). Urgency refers to the importance and pressure of a certain issue which includes a time-sensitive component that demands immediate attention (Mitchell et al., 1997).

In order to draw profound conclusions of the stakeholder analysis, it is essential to understand these attributes, since they provide information about the stakeholder-manager relationship and the salience to the manager (Mitchell et al., 1997). Going a step further, researchers will find combinations of these attributes that are depicted in Figure 14 as the eight stakeholder classes.

Mitchell et al. (1997) describe these stakeholder classes as follows:

1. Dormant stakeholders: This stakeholder class possesses power, but does not have a legitimate or urgent claim towards the manager. Since the stakeholder relationships are dynamic, managers should still keep an eye on dormant stakeholders, as they can acquire one of the other two attributes and become salient to the manager.
2. Discretionary stakeholders: Discretionary stakeholders possess legitimacy, but do not have power or an urgent claim towards the manager. Mitchell et al. (1997, p. 875) state that "there is absolutely no pressure on managers to engage in an active relationship with such a stakeholder, although managers can choose to do so."
3. Demanding stakeholders: This stakeholder class possesses solely the attribute urgency, but do not have the power or the legitimacy to enforce their claim. Therefore, they are described as demanding.

4. Dominant stakeholders: Dominant stakeholders have both, power and legitimacy to enforce their will, which gives them a strong influence in projects.

5. Dangerous stakeholders: These stakeholders are characterized as dangerous, because they have power and an urgent claim, but lack legitimacy. This combination of attributes can lead to coercive behaviour. Therefore, it is essential to keep these stakeholders informed and satisfied.

6. Dependent stakeholders: Dependent stakeholders have a legitimate and urgent claim towards the manager, but do not possess the power to enforce their will. These stakeholders depend on others that have more power. Dependent stakeholders should be carefully managed such that they do not ally with stakeholders that could harm the project.

7. Definitive stakeholders: This is the most salient and important stakeholder group, since they possess power and an urgent and legitimate claim towards the manager. These stakeholders should be managed closely and included into the processes of the company.

8. Non-stakeholder

Identifying these stakeholder classes is essential for managers, since it has implications on successful stakeholder management and integration within the company and project (Mitchell et al., 1997; Schmeer, 2015).

4.3.1.1 How stakeholders are identified

As already mentioned above, in order to determine actual and potential stakeholders, the researcher should analyse literature or documents that are related to the project (Schmeer, 2015). This will lead to the development of a list with stakeholders. Schmeer (2015) indicates that only a certain number of people can be interviewed to gain more insights about the issue; therefore, the stakeholders in the list have to be prioritized. A profound knowledge of the project is required to assign priorities to the stakeholders (Schmeer, 2015). Colvin et al. (2015) encourages practitioners to go beyond the "usual suspects" and to include unconventional stakeholders too. To do so, eight methods have been identified that can also be used in combination (Colvin et al., 2015):

- Geographical footprint:
  This method includes all stakeholders of a geographically defined area or of a specific community.
- Interests:
  Stakeholders are identified that have a potential interest in the decisions being made.
- Influence:
  Practitioners analyse the members of a society in terms of the extent of their influence on the project.

- Intuition:

    The practitioner relies on his/her skills and social understanding when identifying stakeholders.

- Key informants and snowballing:

    When identifying stakeholders, key informants that have a stable social network and a detailed overview of the target group in the study region are valuable input providers. Snowballing is defined as the process of following suggestions on other potential stakeholders provided by these informants.

- Past experiences:

    Practitioners who are experienced in the field of stakeholder theory, use their past experiences to identify stakeholders.

- Stakeholder self-selection:

    Stakeholders engage and get involved into a project or decision making process by themselves rather than be chosen by a practitioner.

- Use of the media:

    Using media, such as the internet, newspapers, and literature, is the most common method nowadays.

4.3.1.2 Stakeholders of a potential energy-flagship region within the LEADER-region Nationalpark Hohe Tauern

As already explained in the section beforehand, there are several methods to identify stakeholders. For the stakeholder selection of a potential energy-flagship region within the LEADER-region Nationalpark Hohe Tauern, the approach of the geographical footprint, use of media and past experiences has been applied. Furthermore, stakeholders have been included that might have an interest in the project. This has led to the identification of the following stakeholders within seven categories, which are based on the conceptual framework in chapter 4.1.2.1:

Administration

- EU
    - Natura 2000
- State of Austria
- Federal Ministry of Agriculture, Forestry, Environment and Water Management
- Environmental Protection Agency (Umweltbundesamt)
- Provincial Government of Salzburg
- Chamber of Commerce Salzburg
- District authorities
- 21 municipalities

- National Park Commission (3 members of each province)
- Regional Park Management
- Nationalpark Fonds
- Nationalpark Committee
- Nationalpark Board of Trustees
- Nationalpark Council
- Secretariat of the Nationalpark Council
- Nationalpark director
- Ferienregion Nationalpark Hohe Tauern
- LEADER-region Nationalpark Hohe Tauern
- Klima- und Energiemodellregionen Nationalpark Hohe-Tauern
- Klima- und Energiemodellregionen Oberpinzgau Energiereich
- Regional management Pinzgau
- Regional association Pongau
- UNESCO biosphere park Lungau
- 4 Marketing cooperations

Tourism organizations

- 290 star-certified accommodation businesses (min. 20 beds)
- 7 Hohe Tauern Health businesses
- 17 local tourism associations
- 9 Austrian eco labels
- Swimming pools
- Other recreational facilities

Mobility providers

- Taxi businesses
- Car rentals
- Railway businesses
- Public transportation providers
- Cableway companies

Technology providers

- Winter technology
- Mobility
- Buildings
- Renewable energy

Energy providers

- Renewable energy
- Non-renewable energy

Natural protection and conservation organizations

- Nationalpark management and administration

Funding providers

The development of an energy-flagship region is connected with investments. Funds on the national, provincial and municipality level will be examined that apply to the identified areas of improvements. The funding institutions will be included in the stakeholder map to show the interlinkages and connections.

- EU
- State of Austria
- Province Salzburg
- Municipalities

4.3.2 Sampling

Malhotra (2007) states that the main goal of market research is to gain information about the study population's characteristics, views and preferences. The term population in market research is defined as "the aggregate of all the elements, sharing some common set of characteristics, that comprises the universe for the purpose of the marketing research problem" (Malhotra, 2007, p. 335). In the case of the LEADER-region Nationalpark Hohe Tauern, this means that the population contains all persons that live there and have a stake in its operations and development, even if they influence it from outside the region.

To obtain the relevant information about the population, Malhotra (2007) proposes to apply either a census or a sample approach. The difference between these two approaches is that a census involves collecting data of each element of the population, whereas a sample is only a subgroup of the whole which are selected and invited to participate and from which one can draw conclusions about the population (Malhotra, 2007). Table 5 summarizes the conditions that have to be considered when choosing either a census or a sample.

Conditions that have to be considered	Sample	Census
Budget	Small	Large
Time available	Short	Long
Population size	Large	Small
Variance in the characteristic	Small	Large
Cost of sampling errors	Low	High
Cost of non-sampling errors	High	Low
Nature of measurement	Destructive	Non-destructive
Attention to individual cases	Yes	No

TABLE 5: CONDITIONS FAVORING THE USE OF SAMPLE VS CENSUS (MALHOTRA, 2007)

Considering the characteristics of the study population of the LEADER-region Nationalpark Hohe Tauern, a sample is chosen instead of a census. A census is rather unrealistic due to time and budget constraints. Furthermore, the population size of the LEADER-region Nationalpark Hohe Tauern is large and on top of that, attention has to be directed towards individual cases due to the study design.

As previously mentioned, the target population consists of people inside and outside the LEADER-region Nationalpark Hohe Tauern that have an influence on its operations and development. This information has already been identified in chapter 4.3.1.2, which lists the relevant stakeholders. In order to receive a broad view on the issue of the development of an energy-flagship region within the LEADER-region Nationalpark Hohe Tauern, participants have been identified through convenience sampling from each stakeholder category that have been depicted in the conceptual framework (see chapter 4.1.2.1). Malhotra (2007, p. 341) describes convenience sampling as "a nonprobability sampling technique that attempts to obtain a sample of convenient elements. The selection of sampling units is left primarily to the interviewer". The sample elements are characterized as cooperative, accessible and easy to measure (Malhotra, 2007).

The sample size was not specified and was kept flexible, because the focus was on gathering as much information as possible. Therefore, the collection of qualitatively high responses and a broad variety of views have been identified as the main aim. The research process was seen as complete when the contribution of participants reached its saturation and their responses became repetitive, emphasizing previous topics and ideas. However, since the chosen study method has been of a qualitative nature, the sample size is generally smaller than during a quantitative study (Malhotra, 2007).

4.3.2.1 Sample of the LEADER-region Nationalpark Hohe Tauern

As already mentioned, Schmeer (2015) has recognized the fact that only a small number of stakeholders can be interviewed due to time and financial constraints. When selecting potential participants for the interviews, it is essential to define some of their characteristics such as their job position, the organization they work at and the stakeholder group they belong to (Schmeer, 2015).

The following stakeholders have been invited to participate and took part in an in-depth interview:

- Karin König Gassner:
  Managing director of Komm-Bleib (Economic platform for skilled workers and organizations in Pinzgau)
  Stakeholder group: Administration
- Walter Stramitzer:
  Site manager of Pinzgauer Lokalbahn
  Stakeholder group: mobility providers
- Wolfgang Urban
  Nationalpark director of Salzburg of the Nationalpark management
  Stakeholder group: Administration and natural protection and conservation organizations
- Günther Brennsteiner
  Mayor of the municipality Niedernsill and authorized representative of Gletscherbahn Kaprun
  Stakeholder group: Administration, mobility providers and technology providers
- Emil Widmann
  Manager of the Bergführer Büro
  Stakeholder group: Tourism organizations
- Jörg Blaickner
  Employee at Ferienregion Nationalpark Hohe Tauern, responsible for marketing, trade fair & events, press & public relations
  Stakeholder group: Tourism organizations and administration
- Angelika Bots-Hölzl
  Self-employed at Inspira and district manager of ÖVP Frauen
  Stakeholder group: Administration
- Philipp und Gerhard Altenberger
  Owners and managers of the hotel Krallerhof
  Stakeholder group: Tourism organizations

- Peter Hofer

  Chairman of the tourism association Wald-Königsleiten and initiating representative of the electric mobility project E-Bob

  Stakeholder group: Tourism organizations and mobility providers

- Ingrid Maier-Schöppl

  Managing director of the tourism association of Neukirchen am Großvenediger and Bramberg

  Stakeholder group: Tourism organizations

- Michael Lackner

  Division manager of traffic management of Salzburger Verkehrsverbund

  Stakeholder group: Mobility providers

- Michael Payer

  Regional manager of Pinzgau, managing director of the association regional development Pinzgau and managing director of the regional union Pinzgau

  Stakeholder group: Administration

- Josef Essl

  Head of the Alpenkonventionsbüros und managing director of CIPRA Österreich

  Josef Essl has been interviewed as an external expert due to his profound knowledge on the Alps. Hereafter, referred to as the expert.

4.3.3 The research method: In-depth interviews

Malhotra (2007, p. 158) defines in-depth interviews as "an unstructured, direct, personal interview in which a single respondent is probed by a highly skilled interviewer to uncover underlying motivations, beliefs, attitudes, and feelings on the topic". In-depth interviews are usually used to explore a new topic, because it is a valuable tool to gain insights into and distinguish between individual opinions (Boyce et al., 2006). Hair et al. (2007) and Boyce et al. (2006) emphasize the advantages of determining problems and opportunities, defining constructs and variables, and analysing how variables about a predefined and concrete subject are related. In-depth interviews are quite time intense and can take from half an hour up to more than an hour (Malhotra, 2007).

To gain more insights into situations in which in-depth interviews can be effectively employed and to elaborate the advantages and disadvantages of this research method, the following Table 6 has been designed to provide an overview on these matters:

Characteristic	Advantage of in-depth interviews	Disadvantage of in-depth interviews
Group synergy and dynamics		In-depth interviews are one-to-one interviews, which do not allow the researcher to experience group synergies and dynamics.
Peer pressure/group influence	Since an in-depth interview is held in a personal one-to-one setting, the risk of peer pressure and group influence is minimized and the researcher can engage in a free exchange of information with the interview participant.	
Client involvement		Since in-depth interviews are designed in a one-to-one setting, in which the interviewer guides the participant through the interview, it is difficult to include and involve the client in this process.
Generation of innovative ideas		In-depth interviews can generate a vast amount of ideas, but compared to research methods within groups, the generation of innovative ideas is limited
In-depth probing of individuals	Probing is essential to obtain further information and to uncover hidden motivations, preferences or beliefs. In a one-to-one setting, the researcher can engage in detailed probing.	
Uncovering hidden motives	Due to probing, the interpersonal and confidential setting, it is easier for the researcher to uncover hidden motives.	
Discussion of sensitive topics	Due to the interpersonal and confidential setting, it is easier for the researcher to discuss embarrassing, confidential and sensitive topics.	
Interviewing respondents who are competitors	Competitors are unlikely to provide the researcher with detailed information in a group setting, in an interpersonal one-to-one setting, however, respondents can talk openly.	
Interviewing respondents who are professionals	It is beneficial to interview professionals individually, since it is more likely to obtain sensitive and confidential information from them.	

Scheduling of respondents	Since the interviewer only has to schedule an interview with one person instead of a group, it is easier to find a suitable date.	
Amount of information		As already mentioned above, group research methods lead to an increased development of innovative ideas and provide the researcher with a vast amount of information.
Bias in moderation and interpretation		In-depth interviews are prone to biases in moderation due to a lack in structure and the dominant role of the interviewer. Furthermore, the vast amount of data is difficult to analyse and interpret.
Cost per respondent		Comparing an in-depth interview with a group research method, such as a focus group, will lead to the conclusion that the time and monetary expenditure per respondent is higher for in-depth interviews.

TABLE 6: ADVANTAGES AND DISADVANTAGES OF IN-DEPTH INTERVIEWS (BASED ON MALHOTRA (2007), KVALE ET AL. (2009), HAIR ET AL. (2007) AND BOYCE ET AL. (2006))

To summarize Table 6, it is beneficial to employ in-depth interviews when sensitive, confidential and embarrassing topics are discussed or revealed, since the group pressure and influence is minimized in one-to-one settings, such that competitors and professionals can talk openly about such issues (Malhotra, 2007). Furthermore, intensive probing is possible to reveal more in-depth information (Malhotra, 2007).

As already mentioned in the introduction, the purpose of this study is to explore in depth the acceptance and commitment of potential stakeholders, and to create and develop recommendations for creating an energy-flagship region according to the stakeholder perspectives. The guiding research question has been formulated as follows: "How do potential stakeholders imagine an energy-flagship region and what are they willing to do to achieve it?". As the research purpose and question bring forward, the involvement and relationship of stakeholders within this project is essential and has led to the application of the stakeholder theory as the research method. To gather valuable and in-depth insights into the matter and after evaluating characteristics, advantages and disadvantages of in-depth interviews, this interview technique has been chosen.

The development of an energy-flagship region within the LEADER-region Nationalpark Hohe Tauern is a new topic on which little literature is available. Furthermore, the perception and

attitudes of regional stakeholders towards an energy-flagship region are unknown. In-depth interviews in this case make it possible to receive rich and comprehensive responses as well as help in exploring people's points of view and behaviour towards this concept.

4.3.3.1 Designing the interview study

The following section will illustrate the process of creating the interview guide to fit it to the study's objectives in order to assist in testing the set of hypotheses and formulating the stakeholder chart more accurately in a later phase.

When designing an interview study, Malhotra (2007) recommends evaluating the kind of information that is needed to answer the research question and deciding upon an interview method. This will enable the researcher to develop the interview guide, which is a script that consists of structured and unstructured questions (Malhotra, 2007; Kvale et al., 2009). According to Malhotra (2007, pp. 307-308), "unstructured questions are open-ended questions that respondents answer in their own words", whereas "structured questions specify the set of response alternatives and the response format". It is said that unstructured questions provide the researcher with the richest responses (Kvale et al., 2009). Kvale et al. (2009) and Schmeer (2015) state that during an interview, the questions are posed in a descriptive manner using "what", "why" and "how". Precautions have to be taken, when using "why" questions, because respondents tend to provide "their own, more or less speculative explanations" (Kvale et al., 2009, p. 133).

However, Kvale et al. (2009) indicate that it depends on the study whether the structure of the questions within the interview guide has to be followed strictly by the interviewer. Interviewees might have a completely new view on the topic and provide a different direction (Kvale et al., 2009). In such cases, Kvale et al. (2009) state that how to proceed depends on the judgement of the interviewer.

To obtain qualitatively high responses, interview questions have to be drafted such that an interviewee's potential unwillingness or inability to answer is overcome (Malhotra, 2007). Therefore, it should be considered whether the respondents are informed about the topic, whether they can remember certain information and whether they are able to articulate their answer properly (Malhotra, 2007). Malhotra (2007) advices structuring and ordering the questions in a comprehensive and emerging way as well as choosing a clear wording. The following guidelines can be followed to do so (Malhotra, 2007, pp. 311-314):

- "Define the issue
- Use ordinary words
- Use unambiguous words

- Avoid leading or biasing questions
- Avoid implicit alternatives
- Avoid implicit assumptions
- Avoid generalizations and estimates
- Use positive and negative statements"

Once the interview guide is finalized and before going into the field, the interview guide should be pretested and, if needed, adjusted (Malhotra, 2007; Schmeer, 2015).

As already established in the previous chapter (4.3.3), the interview technique of the in-depth interviews was found as the most suitable and appropriate method to gather the needed information for the purpose of this study. Due to geographical, financial and time constraints, telephone interviews have been chosen. "Traditional telephone interviews involve phoning a sample of respondents and asking them a series of questions" (Malhotra, 2007, p. 184).

The conceptual framework and the hypothesis have been the basis for the development of the interview guide. The conceptual framework lists detailed information about potential components of an energy-flagship region as well as specifies within 4 pillars the objectives of this study. Firstly, the interview should reveal the importance of the abovementioned individual components of an energy-flagship region and secondly, identify in which areas adjustments are needed in the region when pursuing its development into an energy-flagship region. Thirdly, the interest and willingness of the stakeholders to contribute to the process of creating an energy-flagship region should be explored. This also includes questions about actual activities and responsibilities that the stakeholder would take on. Finally, a financial aspect was included too, since projects and initiatives are connected to investments.

The main part of the interview consists of 17 unstructured questions to gain in-depth knowledge about the view and perception of regional stakeholders towards the creation of an energy-flagship region. To obtain additional information, a part with two structured questions in the form of statements that are to be assessed according to their importance to the stakeholder has been included as well. In order to keep the interview guide short, a second questionnaire was introduced that listed the second part of the statements. This questionnaire was sent to the participants for self-completion.

Before interviewing the 13 participants listed in chapter 4.3.2.1, the interview guide has been reviewed and pretested. The telephone interviews took about 45 minutes on average. Each interview has been recorded on a digital device to facilitate the development of detailed transcripts, which are the basis for the data analysis described below.

The final interview guide and the questionnaire for self-completion can be found in Appendix 1 and 2, respectively.

4.3.4   Analysis of the results

After each interview, a separate transcript has been developed in order to be able to analyse the information. To evaluate the findings of the interviews, a content analysis was applied. Malhotra (2007, p. 205) defines this type of analysis as "the objective, systematic and quantitative description of the manifest content of a communication." Certain patterns and themes as well as the occurrence and non-occurrence, can be identified through coding the respective text (Kvale et al., 2009; Creswell, 2014; Boyce et al., 2006). This enables the researcher to reduce statements to simple categories (Kvale et al., 2009). There are three approaches that Creswell (2014) describes: First, during the emerging coding, the actual content of the text is used as a basis for the development of codes. Second, predefined codes are determined beforehand and the data from the interviews is aligned to it. The third option is to combine the two abovementioned approaches.

To analyse the data for this study, the combination of predefined and emerging coding has been selected. Knowledge about the matter has been gathered through literature and observations, which provides the researcher with predefined codes; however, some unexpected responses and new views to the topic might arise as well and should not be ignored.

Since also structured questions are used in the interview guide, the mean as a measure of location will be applied to retrieve meaningful values for interpretation. Measures of location are "measures of central tendency because they tend to describe the center of the distribution" (Malhotra, 2007, p. 460). The mean, also called the average, is a value that one retrieves from summing up all values of a variable, x_i, within a dataset and dividing it by the number of cases, n (Malhotra, 2007). The formula of the mean can be illustrated as follows (Malhotra, 2007):

$$\overline{x} = \frac{1}{n} \cdot \sum_{i=1}^{n} x_i$$

EQUATION 1: FORMULA OF MEAN

The mean value is affected by outliers. However, if the dataset does not contain any outliers, the mean is a robust measure of location and does not change significantly if values are deleted, modified or added (Malhotra, 2007).

Finally, according to Creswell (2014) and Kvale et al. (2009), charts, tables and graphs should be used to display the results and support the interpretation and the development of recommendations.

4.3.5 Drawing the stakeholder graph

After presenting the findings, drawing the overall conclusion and giving recommendations, a stakeholder graph can be developed (Schmeer, 2015). This will provide information on which stakeholders are the most important ones and what each stakeholder's position is towards the project (Schmeer, 2015). Schmeer (2015) states that statements that concern advantages and disadvantages of the project, perceived importance of different stakeholder groups as well as the stakeholder's willingness to contribute can be used to interpret stakeholders' attributes. This refers to cross-referencing and is a common strategy to determine the stakeholder groups' characteristics (Schmeer, 2015). Therefore, the results and analysis of the interviews should provide enough information to select stakeholders according to the eight stakeholder classes in chapter 4.3.1 and illustrate the findings in a visualization of the stakeholder graph.

5 RESULTS OF THE EMPIRICAL RESEARCH

As has already been mentioned in chapter 4.3.2.1, the sample consists of quite diverse stakeholders that belong to different stakeholder groups. Since some stakeholders have more than one job or position and have indicated that their responsibilities within their working fields are interrelated, they have been assigned to various stakeholder groups. The categorization has been made before the interviews (as can be seen in chapter 4.3.2.1) and has been adjusted, if needed, according to the stakeholders' specifications within the interviews.

Six stakeholders have been assigned to the stakeholder group "Administration", four to "Mobility providers", one to "Protection and conservation organization", one to "Technology providers" and four to "Tourism organizations". None of the contacted persons within the stakeholder group "Energy providers" agreed to take part in the interviews.

The interview participant within the group "Protection and conservation organization" is the Nationalpark director of the Nationalpark management in Salzburg and can be seen as a representative for this stakeholder group. The Nationalpark Hohe Tauern extends over three different provinces and each province has its own Nationalpark director. Thus, the Nationalpark management of each province does not only take regional, but also supra-regional matters into account. The whole Nationalpark is a touristic area and the major role of the management is to combine tourism and natural protection in a way that the values and rules of the Nationalpark Hohe Tauern are adhered to.

The authorized representative of Gletscherbahn Kaprun has been assigned to the group "Technology providers" apart from two other groups, since cableway companies are seen as innovators and the driving force of technological change in the region. Unfortunately, no further people within this group were available for an interview.

5.1 Descriptive Results

5.1.1 Components of an energy-flagship region according to interview participants

When asking about how stakeholders imagine an energy-flagship region within the LEADER-region Nationalpark Hohe Tauern, the main focus of the participants is put on mobility. The majority agrees on the need to expand the public transportation system (called PTS in the Figures below) and on providing a better schedule with more frequent departure times. In order to stimulate the demand for public transportation services, to make them more attractive and reduce the individual traffic, the tickets should be made more affordable.

However, a large share of participants also indicates the importance of a long-term perspective to achieve sustainable results and to strive for a momentum. According to the interviewees, when setting such goals, it is essential to raise the awareness of the public for sustainability topics and involve residents in the projects.

Since the LEADER-region Nationalpark Hohe Tauern is a touristic area, interviewees further mention the climate neutral arrival of guests as a component of an energy-flagship region. When talking about environmentally friendly and climate neutral mobility, the Alpine Pearl municipality Werfenweng is mentioned as a role model several times. Werfenweng has been able to establish a strong position due to the benefits of the Alpine Pearls network of learning regions that foster information exchange and strive for environmentally friendly tourism (Alpine pearls, 2016). The participants are, however, aware that the region cannot provide the same offers as Werfenweng, which has marketed their excellent mobility concept. This claim is based on the fact that the LEADER-region Nationalpark Hohe Tauern has a remote location in the Alps and is not easily accessible through main traffic or train routes. Nevertheless, participants can imagine promoting the increased use of electric mobility and implementing intelligent concepts that save energy and resources. These concepts do not only target increased energy efficiency, but the use of regional energy sources too. The introduction of a benchmark and monitoring system for businesses is seen as beneficial by some interview participants to pave the way towards more responsible use of energy and resources.

Another component that is mentioned several times, refers to the promotion of the whole region as a brand. Stakeholders within the region need to learn to think beyond the borders of their municipalities.

The most often mentioned components have been depicted in Figure 15.

Other components that are named refer to:

- Cooperations between organizations to implement projects
- Introduction of an eco-catalogue
- Affordable living conditions for families
- Introduction of a local app
- Closing the energy cycle
- Uniform system for electric mobility
- Increased use of geothermal heat
- Increased use of solar heat and photovoltaic plants
- Increased use of aerothermal heat
- Modification of tourism behaviour
- Energy self-sufficiency

- Health tourism
- Creation of a platform to exchange knowledge
- Offers for body, mind and soul
- Reduction in energy use
- Increase in regionality
- Promotion of slow tourism offers
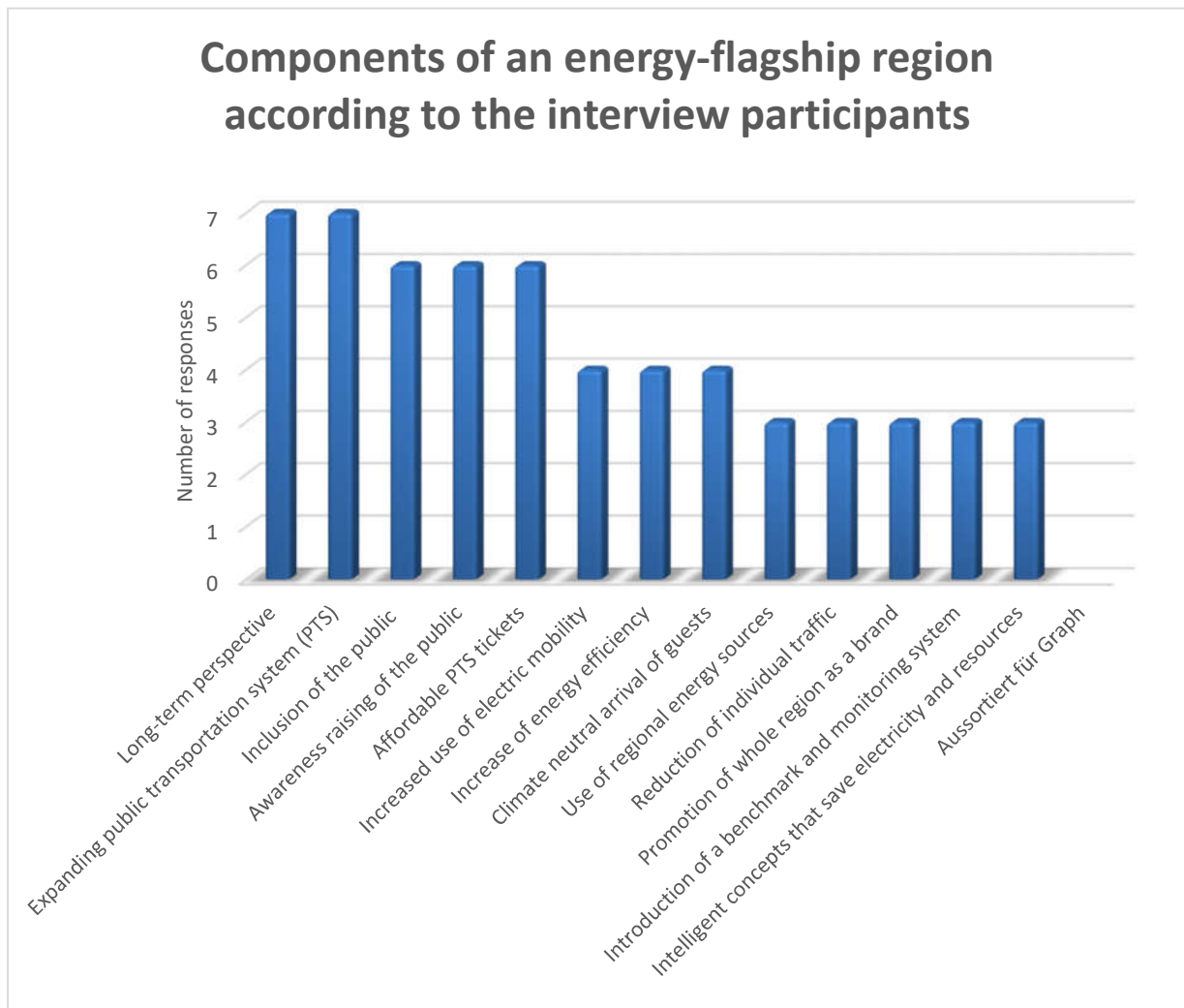
FIGURE 15: COMPONENTS OF AN ENERGY-FLAGSHIP REGION ACCORDING TO PARTICIPANTS (PTS = PUBLIC TRANSPORTATION SYSTEM)

As already mentioned in chapter 4.1.2., the conceptual framework that was developed for the purpose of this study, includes components of a potential energy-flagship region that have been identified during the observations according to the perception of the workshop participants. These components have been used within a structured question in the interview guide (see Appendix 1, question 2) to get insights about the importance of the individual elements for the interviewees and support the findings of the unstructured questions. The interviewees were

able to choose between the response options "important", "neutral" and "not important". To represent the findings in a numerical way, 1 was assigned to the category "important", 2 to "neutral" and 3 to "not important". This part makes it possible to observe differences between stakeholder groups. The graphical representation of the results that have been described above, is depicted in Figure 16.

The evaluation of this section shows that all interview participants agree that the "Use of renewable energy sources", "Increased energy efficiency", "Sustainable initiatives for hotels", "Authentic and clear communication within and outside the region (destination marketing)" as well as "Awareness raising and education of the public" should be part of the energy-flagship region. Within these components no or only little variance is observed.

The component "Reduced energy consumption" is rated as important by the stakeholder groups "Administration", "Protection and conservation organization" and "Tourism organizations". The stakeholder group "Technology providers" as well as "Mobility providers" assess this component as neutral, since they believe that in most cases the energy use cannot be reduced, and the focus should rather be on increased energy efficiency.

All stakeholder groups except for "Protection and conservation organization" find "Cooperations within the region" as an important element of an energy-flagship region. The argument of the representative of this particular stakeholder group for rating this component as neutral is that the focus should be put on issues that deal with energy, because cooperations between businesses and between industry sectors will be developed subsequently.

There is no doubt among the interview participants that tourism is the driving force of the economy in this region. Stakeholders report that there has already been a study that explored other industry sectors that could have a similar importance as tourism, but it concluded that there is no other industry that can thrive as well as tourism does in this region. However, when rating this component, "Technology providers" and "Tourism organizations" agree that tourism has to be the driving force of the economy. The groups "Administration" and "Mobility providers" are neutral towards this statement and the group "Protection and conservation organization" is certain that tourism does not necessarily have to be a component of an energy-flagship region; nonetheless, in this region, it is.

When it comes to assessing a diverse tourism offer, stakeholders find it important, but indicated that the region already has a broad variety of offers. The stakeholder group "Protection and conservation organization" is neutral towards this element, because it is seen as important to create a USP with the activities aligned to it. The whole purpose of a USP is to prioritize certain topics, issues and activities and the creation of an even more diverse tourism offer is counterproductive.

The component "Support and protection of nature" is evaluated as important for an energy-flagship region by most stakeholders. Only the group "Technology providers" indicates to have a neutral attitude towards this element. It is observed that the overall motto towards the support and protection of nature is "use and preserve".

The assessment of the component "Environmentally friendly mobility" reflects the outcome of the unstructured questions very well: Overall, this element is seen as important for an energy-flagship region. Stakeholders do however mention that the current technologies have to be further developed in order to allow for an extensive application. Furthermore, the regional public transportation system has to be extended and made more affordable. This argument leads the stakeholder group "Technology providers" to rate this element as neutral.

The component "Reduced car use" is linked to the environmentally friendly mobility. Generally, stakeholders find it important to reduce individual traffic and that it should also be an important element of an energy-flagship region. However, stakeholders emphasize on the fact that to reduce the car use, the mobility offers, whether public transportation system or alternative means of transportation, have to be developed and implemented to facilitate a gradual change from cars to public transportation services. Against the background of a lack in mobility offers, the group "Technology providers" assesses the component "Reduced car use" as neutral.

The variance between the responses for the component "Support and protection of culture and cultural heritage" are the largest. The stakeholder groups "Technology providers" and "Protection and conservation organization" are certain that this element is not important for an energy-flagship region. Stakeholders within "Mobility providers" fluctuate between neutral and not important. "Tourism organizations" find this element important, whereas the group "Administration" leans more towards neutral.

When evaluating the component "Modification of tourist behaviour", stakeholders are certain that it is important, but that a change in behaviour will be achieved automatically. It is said that once the region implements projects to become more sustainable and establishes an energy-flagship region, tourists will follow the lead, and in addition to that, other types of tourists will be attracted too. Therefore, the group "Protection and conservation organization", as well as "Technology providers", rate this element as neutral. The remaining stakeholder groups fluctuate between important and neutral.

The application of environmentally friendly winter technology is seen as important by the stakeholder groups "Administration", "Protection and conservation organization" and "Technology providers". "Mobility providers", as well as "Tourism organizations", rate this element as neutral.
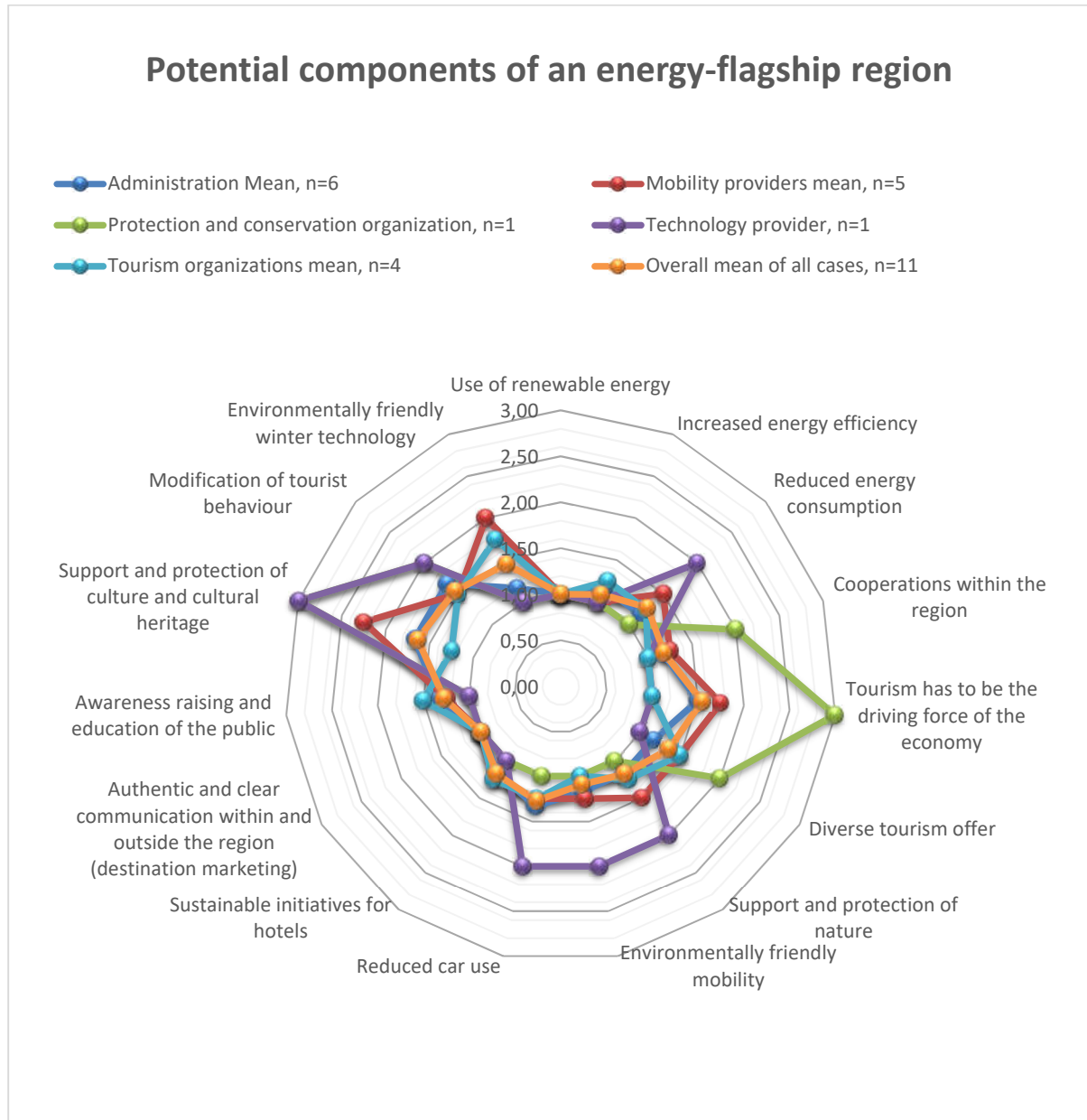
FIGURE 16: POTENTIAL COMPONENTS OF AN ENERGY-FLAGSHIP REGION ACCORDING TO THE STAKEHOLDER GROUPS' PERCEPTIONS (1: I FULLY AGREE, 2: I AGREE, 3: I RATHER AGREE, 4: I RATHER NOT AGREE, 5: I DO NOT AGREE)

5.1.2 Assessment of statements about the individual potential components of an energy-flagship region

To gather additional information about the importance of individual components to stakeholders and the attitudes towards them as well as to explore the willingness to contribute to the development of an energy-flagship region, the participants are asked to assess a number of statements according to the stakeholders' agreement. Rating a statement with 1 indicates that the stakeholder fully agrees with it, 2 signals that the stakeholder agrees with it, 3 shows that the stakeholder rather agrees with it, 4 reveals that the stakeholder does rather not agree with

it, 5 expresses the stakeholders' full disagreement and 6 is offered for stakeholders that do not want to specify and respond.

5.1.2.1   Use of renewable energy

The participants throughout all stakeholder groups agree that the use of renewable energy is important for their businesses and organizations. The results of additional questions about the use of renewable energy at the organizational level reveal that projects in this area have been implemented during the past three years within these businesses/organizations. Moreover, participants state that there are additional plans to some extent which deal with the use of renewable energy and that are supposed to be implemented within the next three years.

However, respondents attribute even more importance to the use of renewable energy in public areas, such as public buildings and social facilities, than to the application at the organizational level if the development of an energy flagship region is pursued. This also includes putting the use of renewable energy increasingly on the regional political agenda and increasing the market share of renewable energy sources. Participants approve the promotion of solar and geothermal energy as well as bioenergy. On the other hand, opinions about hydropower show a broad variance and wind energy is strongly opposed, since the wind turbines are perceived to distort the landscape.

Overall, participants agree that an important pilot project of the energy-flagship region should deal with the use of renewable energy. However, even though this component is evaluated as important (as has been described in chapter 5.1.1), the commitment to participate in this area during the development of an energy flagship region seems to be rather low. This result shows a contradiction, but can be explained by the fact that every organization, business and institution has different interests and its own agenda.

Particularly, the assessment of the representative of the stakeholder group "Protection and conservation organization" is surprisingly opposing. During the in-depth interview however, it becomes apparent that the respondent does not perceive the role of the particular stakeholder group as vital and decisive for the development of an energy-flagship region.

Figure 17 depicts the assessment of the participants for this component and shows the mean values of the individual stakeholder groups as well as the overall mean.
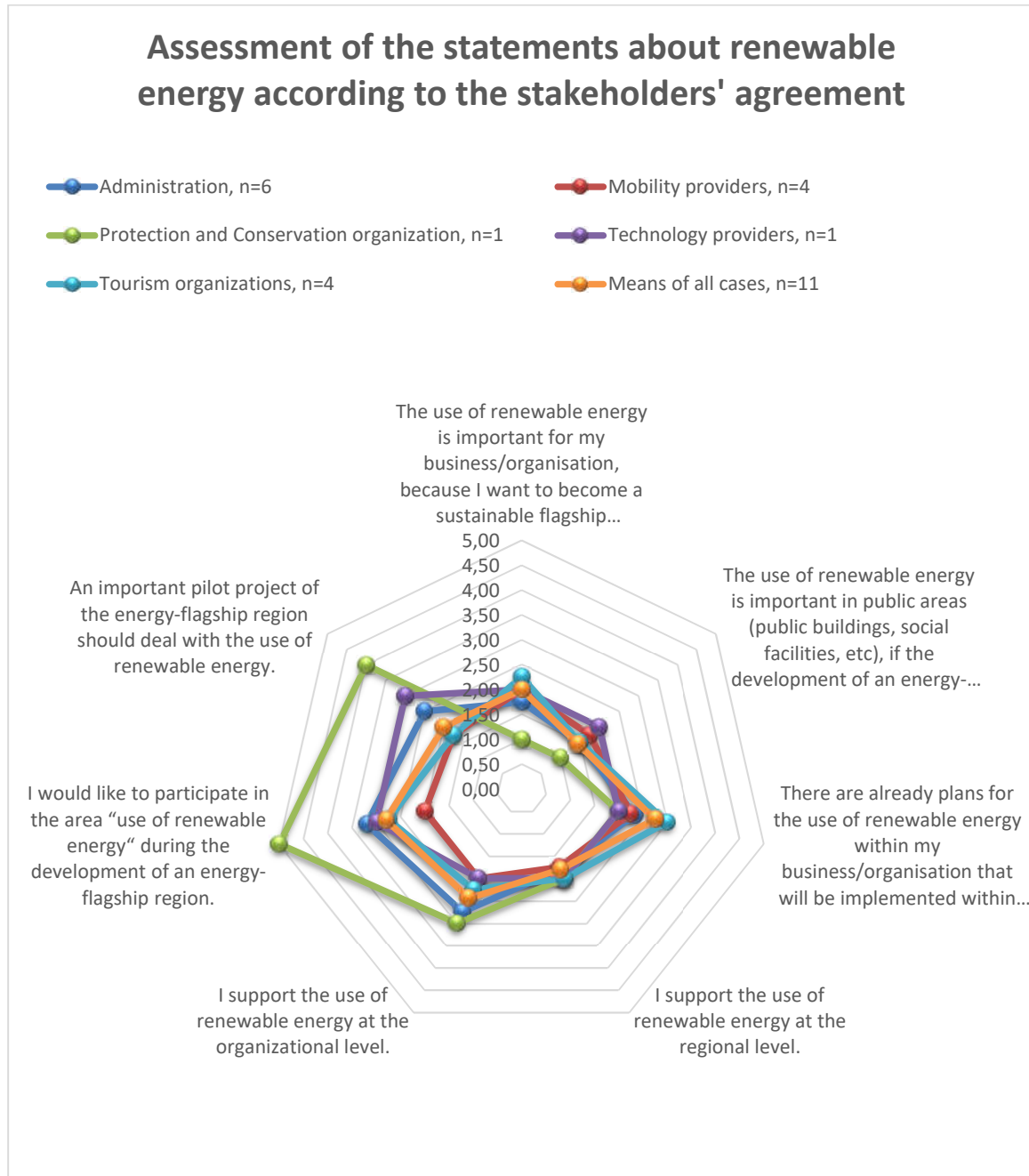
FIGURE 17: ASSESSMENT OF THE STATEMENTS ABOUT RENEWABLE ENERGY ACCORDING TO THE STAKEHOLDERS' AGREEMENT (1: I FULLY AGREE, 2: I AGREE, 3: I RATHER AGREE, 4: I RATHER NOT AGREE, 5: I DO NOT AGREE)

5.1.2.2 Increased energy efficiency

The result of the assessment of statements about increased energy efficiency shows a similar pattern as the one for use of renewable energy.

Again, the importance of energy efficiency is assessed as higher at the regional than at the organizational level. Only a tendency to agree is observed in the assessment of the statements "My business/organization is already equipped according to the latest energy efficiency guidelines" and "My business/organisation has already plans to increase the energy efficiency". This indicates that there is still room for improvement at the organizational level in the area of energy efficiency.

It is again seen as essential to increase energy efficiency in public areas, and participants agree that architects, engineers and agents of the housing sector should be specifically trained in energy efficiency to comply with the latest requirements. When asking about the stakeholders' support of increased energy efficiency, only a minor difference is detected between the regional and organizational level. Overall, the support for this component is rather weak. This result is also reflected in the rather low commitment of the stakeholder groups. However, stakeholders agree that an important pilot project of the energy-flagship region should deal with increased energy efficiency.

Unexpected has been the result of the stakeholder within the group "Technology providers", since it is clearly indicated in the in-depth interviews that a reduction in energy use is barely feasible and therefore, increased energy efficiency is a vital aspect in this industry sector. Against the background of this knowledge, the results of the structured questions yet show, that there is rather no willingness to participate in the area "Increased energy efficiency" during the development of an energy-flagship region and the pilot project that deals with this component is perceived with a low importance.

The graphical representation of the assessments of the individual stakeholder groups as well as the overall mean value, can be found below in Figure 18.

FIGURE 18: ASSESSMENT OF THE STATEMENTS ABOUT INCREASED ENERGY EFFICIENCY ACCORDING TO THE STAKEHOLDERS' AGREEMENT (1: I FULLY AGREE, 2: I AGREE, 3: I RATHER AGREE, 4: I RATHER NOT AGREE, 5: I DO NOT AGREE)

5.1.2.3 Reduced energy use

Reduced energy use seems to be an important aspect at the organizational level for some respondents, but it is clear that the stakeholder within the group "Technology providers" does not attribute as much importance to reduced energy use as to increased energy efficiency due to feasibility issues.

Overall, the results show that businesses have already implemented measures to reduce energy use. This might explain why the respondents are rather hesitant to agree to the statement "My business/organisation has already plans to reduce the energy use".

The previously observed pattern can also be detected for this component: Reduced energy use is seen to be more important on the regional level and in public areas, and the willingness to support reducing the energy use at the regional level is higher than at the organizational one.

Even though the majority agrees that an important pilot project of the energy-flagship region should deal with reducing the energy use, the representative of the stakeholder group "Protection and conservation organization" shows some resistance. This can be traced back to the opinion that this stakeholder group does not see itself in an active role within the energy-flagship region.

Figure 19 clearly visualizes the disagreement towards the statements concerning the reduction in energy use of the stakeholder of the group "Protection and conservation organization" as well as "Technology providers".
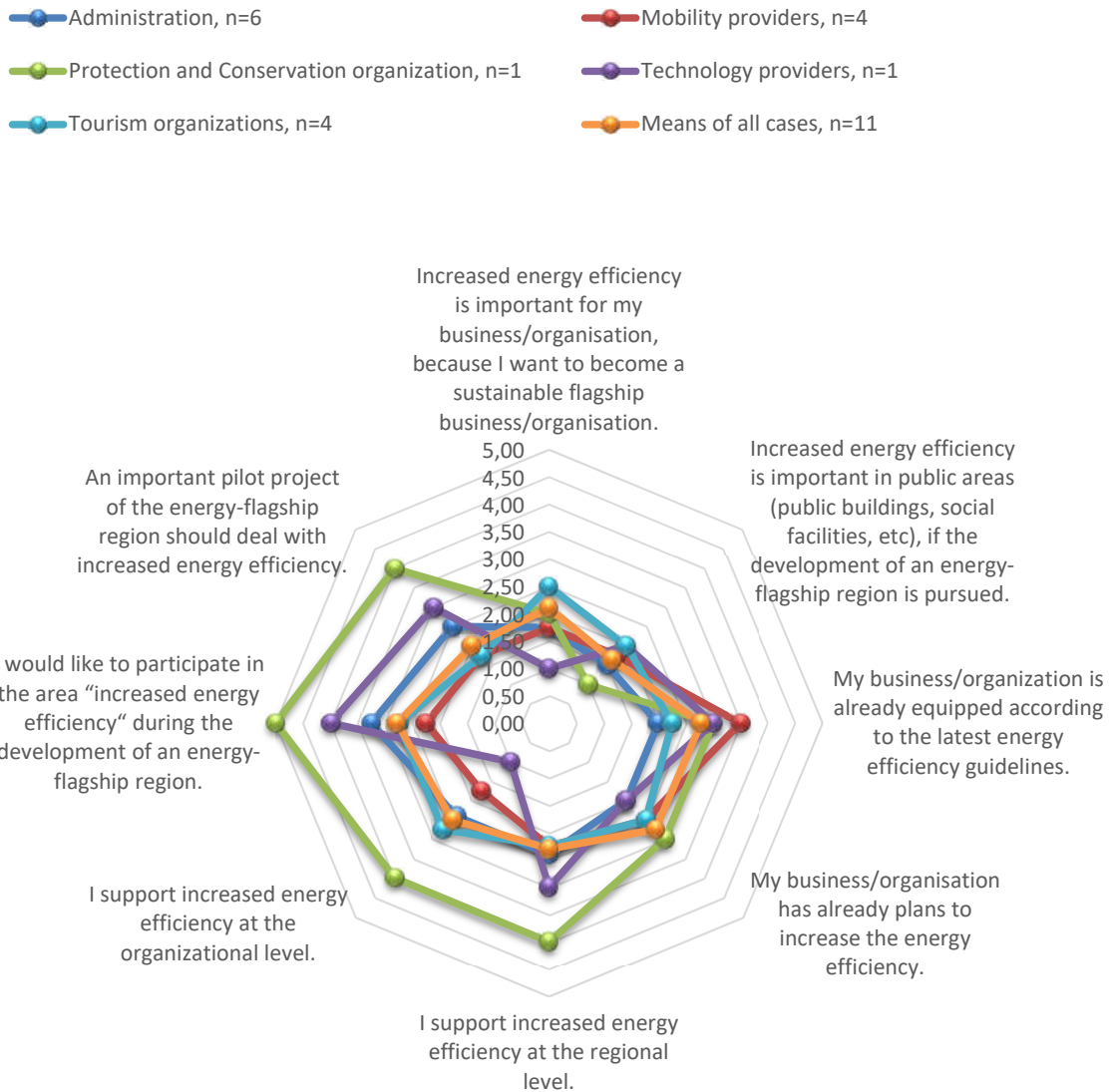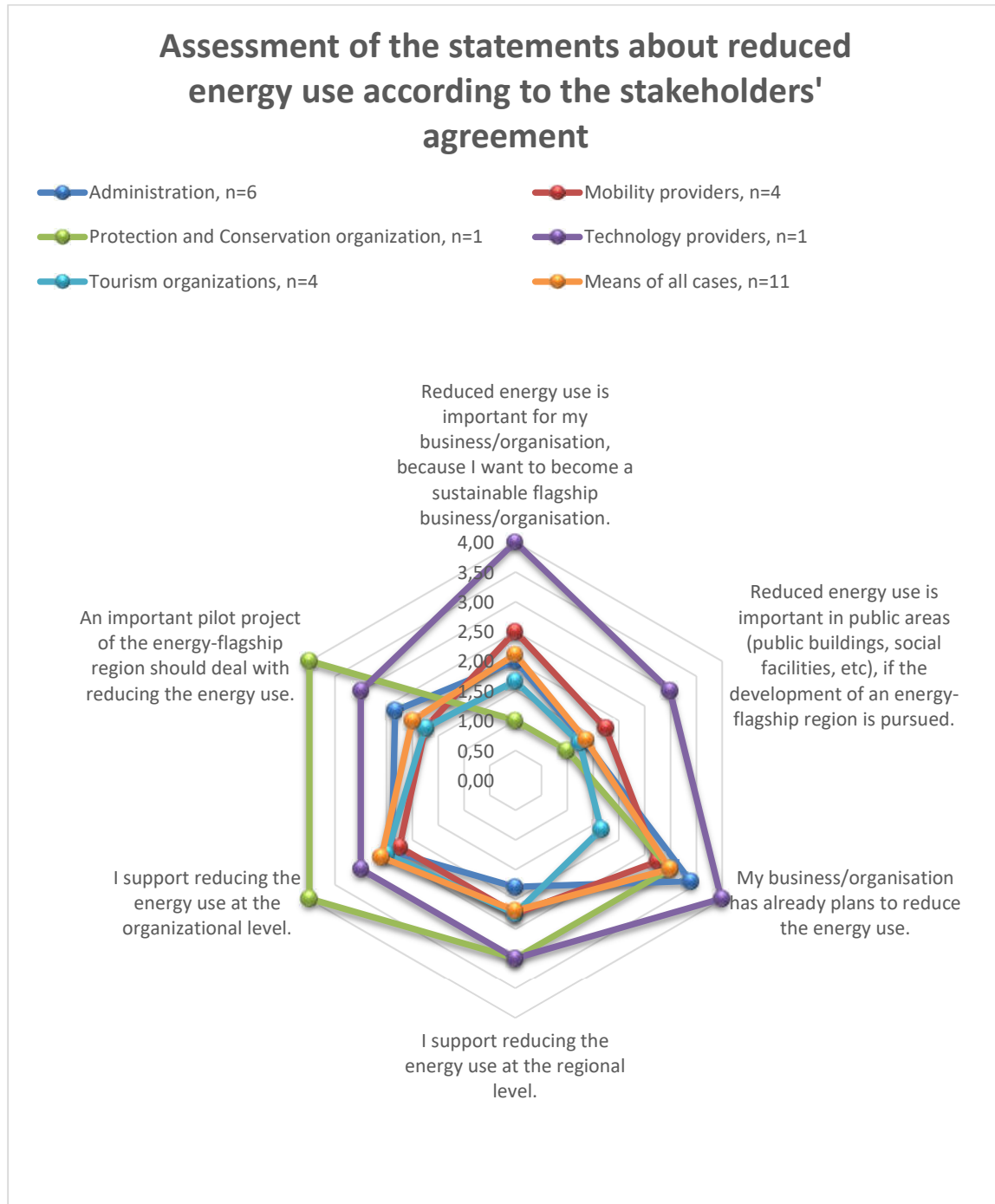
FIGURE 19: ASSESSMENT OF THE STATEMENTS ABOUT REDUCED ENERGY USE ACCORDING TO THE STAKEHOLDERS' AGREE-MENT (1: I FULLY AGREE, 2: I AGREE, 3: I RATHER AGREE, 4: I RATHER NOT AGREE, 5: I DO NOT AGREE)

5.1.2.4 Cooperations between businesses and between industry sectors within the region

The participants of all the stakeholder groups strongly agree that cooperations within the region between different sectors are a crucial component of a successful energy-flagship region. According to the assessment results, there are already existing cooperations at the regional level, these should be further extended though and the topic cooperations between different sectors should be put increasingly on the regional political agenda to facilitate the development of an energy-flagship region.

Evaluating the statements about cooperations at the organizational level reveals that there is still room for improvement and that participants barely cooperate with other businesses/organizations from different economic sectors to become more sustainable. This is also reflected in the results that show that there is no or only little commitment to establish contacts to enable cooperations for the business and within the development process of an energy-flagship region.

The focus of the participants is again on the regional level and the stakeholder groups' commitment to assist in developing an energy-flagship region is low when it comes to establishing cooperations. The stakeholders in the groups "Protection and conservation organization" and "Technology providers" clearly indicate that they do not want to be involved in this field. And even though the group "Tourism organizations" highly agrees with the statement "I like to establish contacts to enable cooperations", the willingness to actually participate and enable cooperations within the energy-flagship region is rather low.

In Figure 20, the mean values of the individual stakeholder groups as well as the overall mean value for this component can be observed.

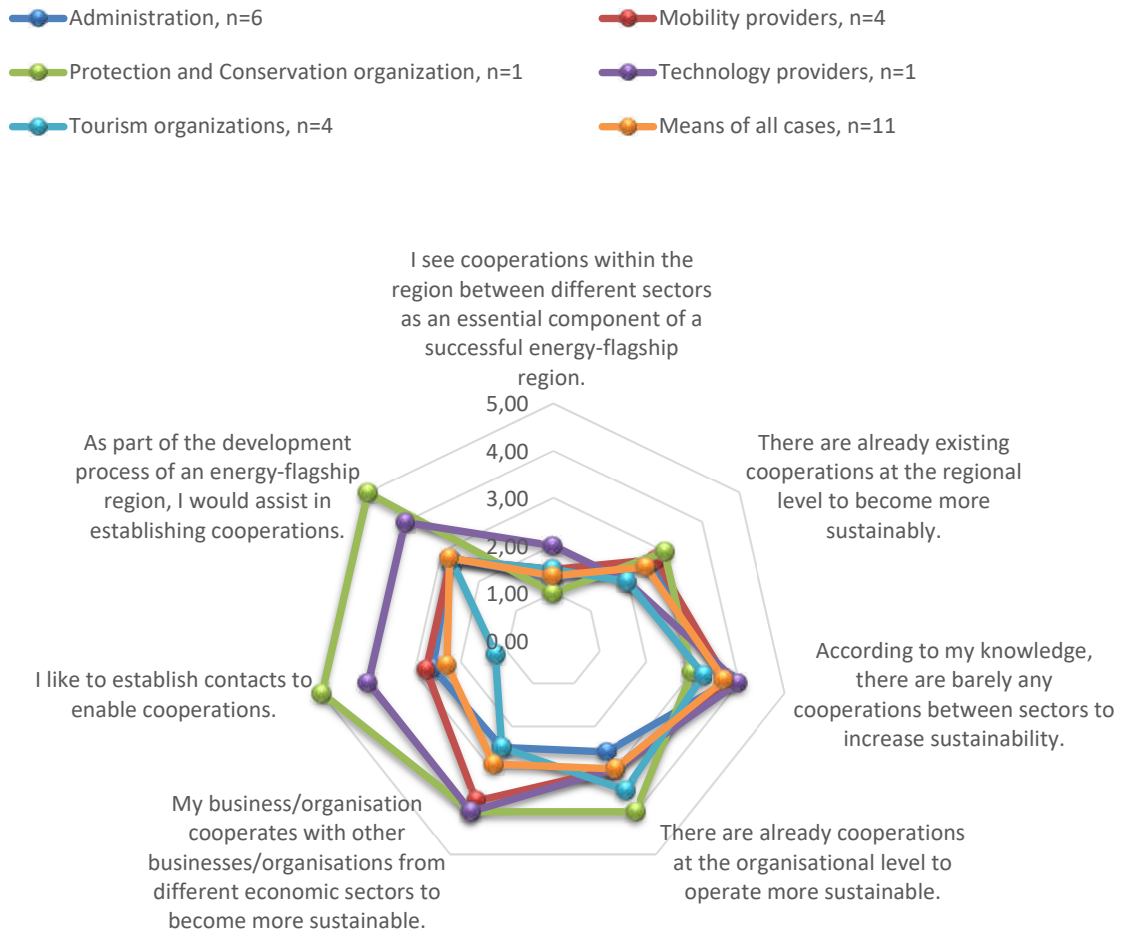FIGURE 20: ASSESSMENT OF STATEMENTS ABOUT COOPERATIONS BETWEEN BUSINESSES AND BETWEEN INDUSTRY SECTORS WITHIN THE REGION ACCORDING TO THE STAKEHOLDERS' AGREEMENT (1: I FULLY AGREE, 2: I AGREE, 3: I RATHER AGREE, 4: I RATHER NOT AGREE, 5: I DO NOT AGREE)

5.1.2.5 Tourism

All participants highly agree that an indispensable driving force of the economy in the LEADER-region Nationalpark Hohe Tauern is tourism and that their businesses/organizations benefit directly as well as indirectly from it. Since tourism is such an important sector in the region, the results show that it must be included in the concept to create a successful energy-flagship region which involves designing tourism organizations and related businesses more sustainably. According to the participants, only when tourism is part of the energy-flagship region can the behaviour of tourists be positively modified towards sustainability.

The participants further indicate that they have already implemented measures to make their business/organization more environmentally friendly. Additionally, the groups "Administration" and "Technology providers" show a great interest in obtaining a sustainability certificate (Austrian Eco-label, EMAS, ISO 14001, etc.) relating to tourism businesses and organizations.

When evaluating statements about monitoring systems that measure and record energy consumption and resource use, the participants only tend to agree to their introduction in hotels. A consensus throughout the stakeholder groups, however, can be observed on the statement that hotels should focus on regionality (regional products, partnerships with regional farmers, etc.) and should clearly communicate that sustainability plays an important role in their businesses.

Except for the representative of the group "Protection and conservation organization", all groups believe that making tourism more sustainable has a measurable positive impact on the environment. However, designing tourism more sustainably does not imply that the path of soft tourism should be chosen. During the in-depth interviews, participants clearly state that this is not possible within the region anymore.

The stakeholder groups "Administration", "Tourism organizations", "Mobility providers" as well as "Technology providers" agree that it is critical for an energy-flagship region that tourism respects and protects natural and cultural heritage and that, especially, protected zones in the national park stay untouched. The representative of "Protection and conservation organization" does not see the support and protection of natural and cultural heritage as a component of an energy-flagship region. However, this representative still puts a high emphasis on the conservation of especially protected zones.

Besides, all stakeholder groups, except for the representative of "Protection and conservation organization" agree that it is essential to have a diverse tourism offer in order to remove pressure off the nature and that it is furthermore vital for an energy-flagship region. It is distinct, that the representative of the group "Protection and conservation organization" strongly opposes this view. Generally, stakeholders are certain that the LEADER-region Nationalpark Hohe

Tauern already has a very diverse tourism offer. A diverse tourism offer around the year is also linked to the reduction of seasonality by the participants.

Figure 21 summarizes the findings for this component by depicting the overall mean value and the mean values of the individual stakeholder groups.
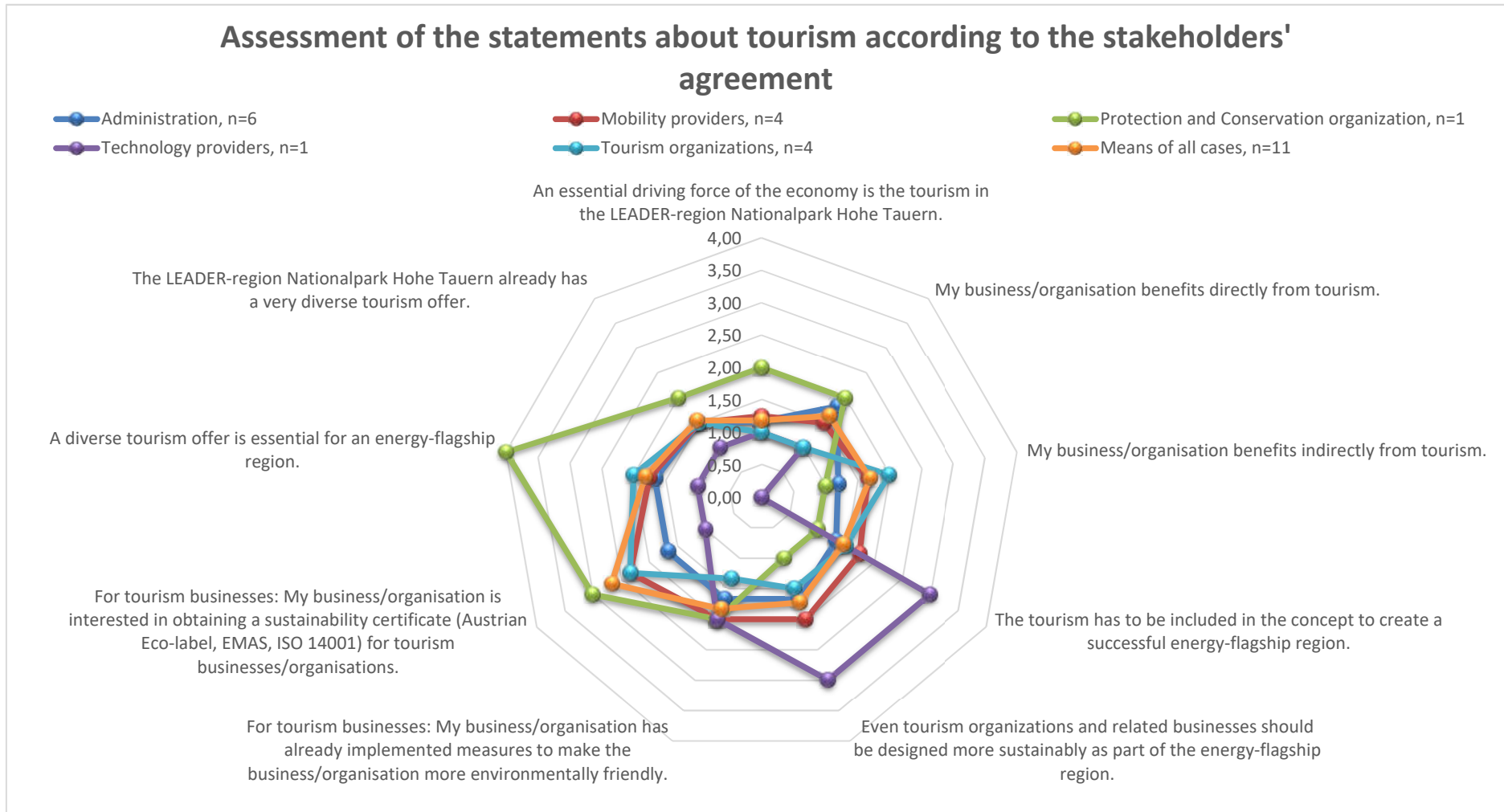
FIGURE 21: ASSESSMENT OF THE STATEMENTS ABOUT TOURISM ACCORDING TO THE STAKEHOLDERS' AGREEMENT (1: I FULLY AGREE, 2: I AGREE, 3: I RATHER AGREE, 4: I RATHER NOT AGREE, 5: I DO NOT AGREE)

5.1.2.6 Support and protection of nature

The support and protection of nature plays an important role in the businesses/organizations of the participants and is seen as essential at the regional level if the development of an energy-flagship region is pursued. The support of the protection of nature of the participants is again higher at the regional level, than at the organizational one.

However, when looking at the assessments from the statement "An essential part of an energy-flagship region is the support and protection of nature", a broad variance can be detected. The stakeholders of the groups "Protection and conservation organization" and "Technology providers" are certain that an energy flagship region does not deal with the support and protection of nature. The same view holds for putting the support and protection of nature increasingly on the regional political agenda.

Even though this component is evaluated as important by the other stakeholder groups, the willingness to participate in this area is low and overall, they only tend to agree that an important pilot project of the energy-flagship region should deal with the support and protection of nature.

The evaluation of this component is especially interesting (graphical representation can be found in Figure 22), since the representative of the group "Protection and conservation organization" does on the one hand support the protection of nature in their daily operations, but on the other, is not willing to participate in it during the development of an energy-flagship region. The in-depth interviews bring more insights and reveal that a participation and contribution in this area is not precluded if the seriousness and commitment is seen as sincere and correct. But the stakeholder within this group also states that one has to be realistic, because the support and protection of nature, as it is practiced in a national park, is not in the foreground of the concept of an energy-flagship region.

FIGURE 22: ASSESSMENT OF THE STATEMENTS ABOUT THE SUPPORT AND PROTECTION OF NATURE ACCORDING TO THE STAKEHOLDERS' AGREEMENT (1: I FULLY AGREE, 2: I AGREE, 3: I RATHER AGREE, 4: I RATHER NOT AGREE, 5: I DO NOT AGREE)

5.1.2.7 Environmentally friendly mobility

Environmentally friendly mobility is seen as a compulsory part of the energy-flagship region and the participants highly agree that an important pilot project should deal with this aspect. Particularly, the use of environmentally friendly mobility in public areas (public transportation systems, business cars, shuttle busses, etc.) should be pursued if an energy-flagship region is developed and the issue should be increasingly put on the regional political agenda. There is only a minor variance between the overall mean values of the statements on whether to support environmentally friendly mobility at the regional or organizational level. Anyhow, higher importance is again attributed to the regional level.

However, participants do state that environmentally friendly mobility does play a role in their businesses/organizations and that projects concerning this topic have already been implemented during the past three years. This might be the reason for the reserved assessment of the statement "There are already plans concerning environmentally friendly mobility within my business/organization that should be implemented".

But in order to reduce car use of residents as well as tourists and enhance environmentally friendly mobility, the participants throughout all the stakeholder groups are convinced that the public transportation system should be extended in the region.

The application of electric mobility is seen as beneficial too. Electric cars, however, are perceived as environmentally friendly only if the electricity comes from renewable energy sources, but the participants are aware that the use of these sources is not yet inseparably connected to it.

This component receives the best rating so far and the commitment to participate in this area during the development of an energy-flagship region is quite positive. Nonetheless, two stakeholders state to prefer to "rather not contribute".

The following figure (Figure 23) illustrates the findings for this component as mean values.

FIGURE 23: ASSESSMENT OF STATEMENTS ABOUT ENVIRONMENTALLY FRIENDLY MOBILITY ACCORDING TO STAKEHOLDERS' AGREEMENT (1: I FULLY AGREE, 2: I AGREE, 3: I RATHER AGREE, 4: I RATHER NOT AGREE, 5: I DO NOT AGREE)

5.1.2.8 Destination marketing and image

A component that receives great approval throughout the statements refers to destination marketing and image. Authentic and clear communication inside, as well as outside, the region is seen as an essential aspect of a successful energy-flagship region. The image of the flagship region is not only perceived to have a positive influence on the region itself, but also on its businesses and organizations. The participants believe that the residents would benefit too and the quality of life would be enhanced subsequently.

The influence of the image of the energy-flagship region is, however, debatable. Some stakeholders rather agree that it has a positive effect, while others do not believe so. Specifically, the stakeholders within the groups "Protection and conservation organization" and "Technology providers" oppose this view. The same applies to the statement "The image of the energy-flagship region would be visible far beyond borders (even internationally)" for these two groups, whereas the other stakeholders seem to be uncertain about it.
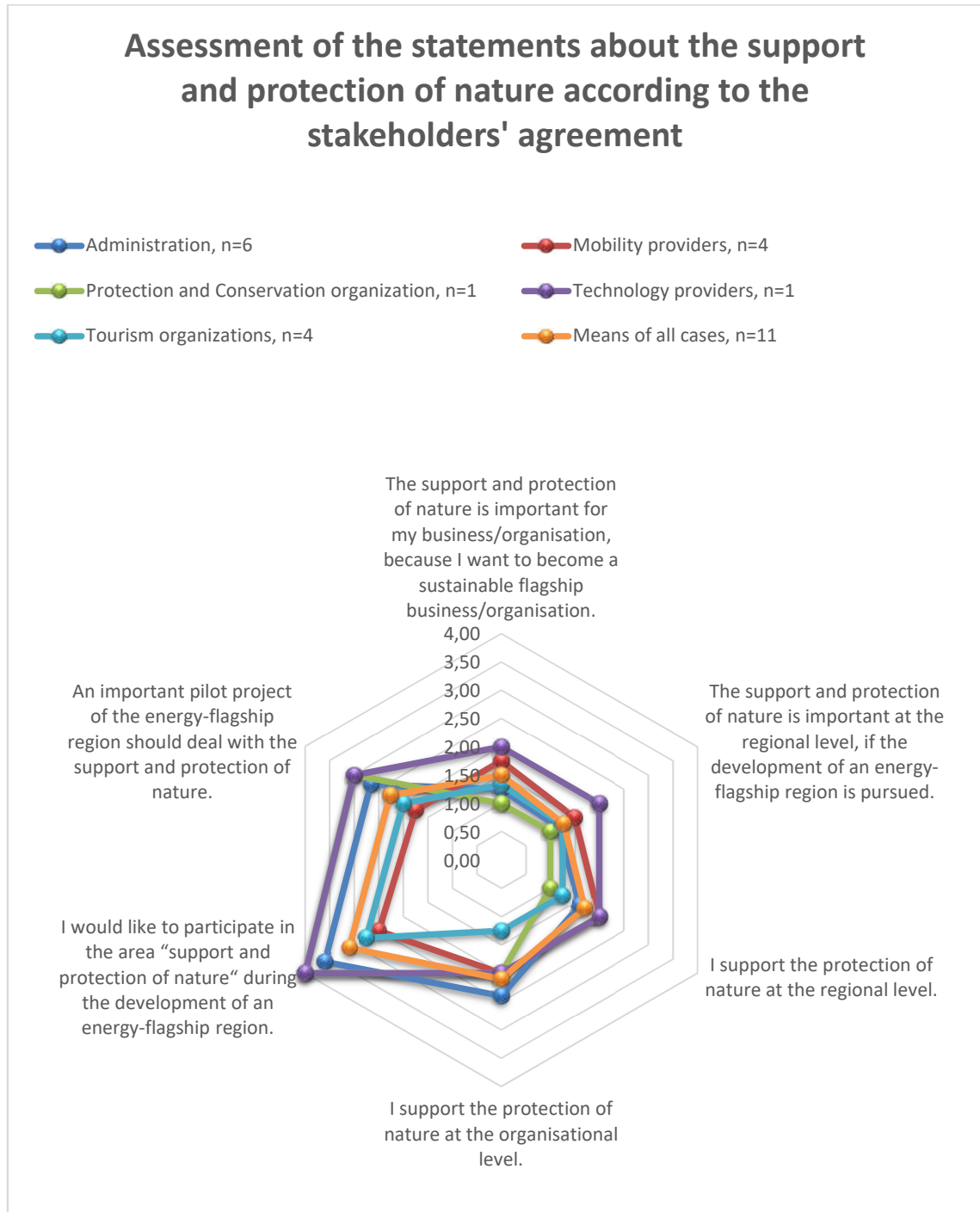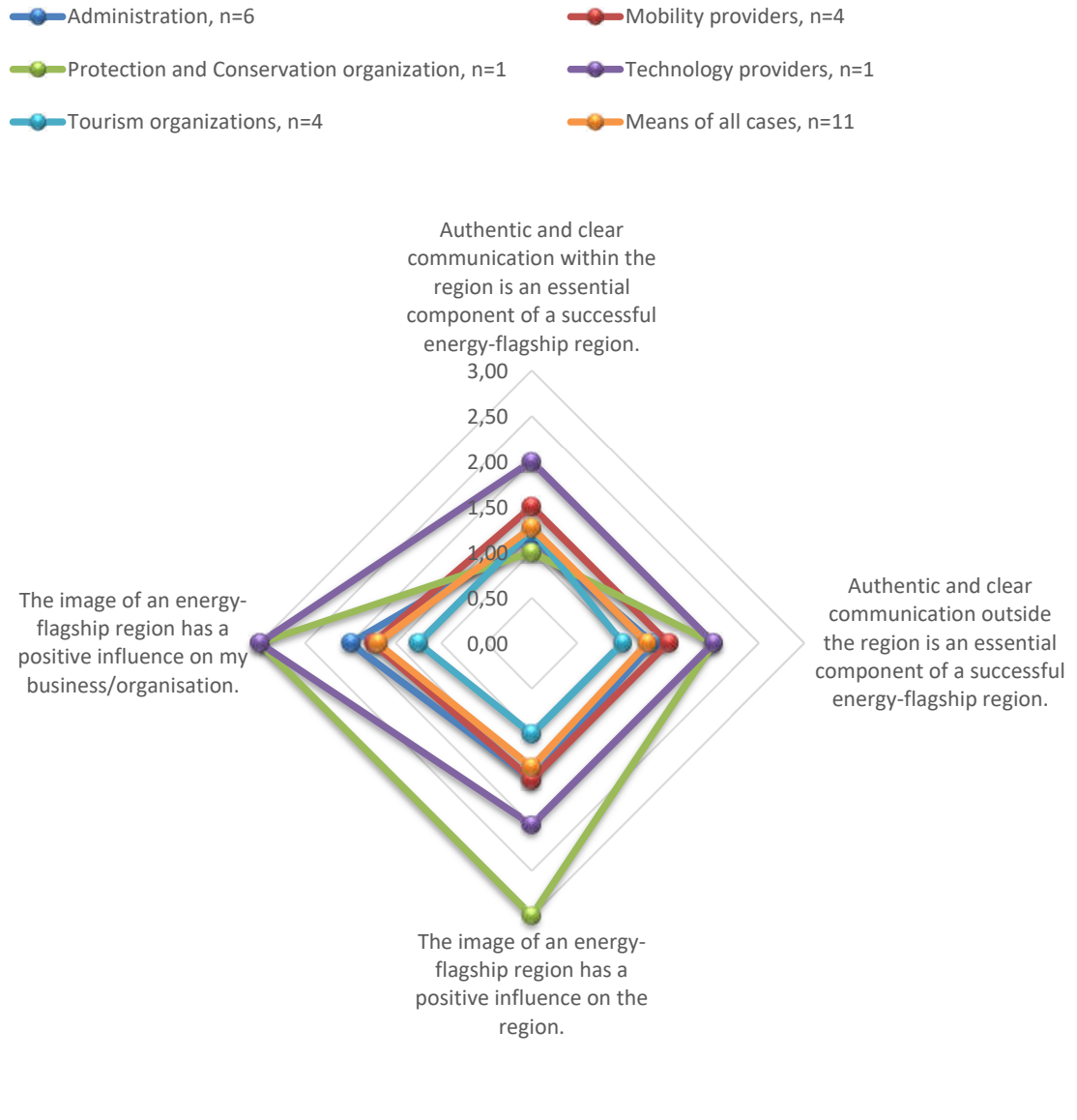
FIGURE 24: ASSESSMENT OF THE STATEMENTS ABOUT DESTINATION MARKETING AND IMAGE ACCORDING TO THE STAKE-HOLDERS' AGREEMENT (1: I FULLY AGREE, 2: I AGREE, 3: I RATHER AGREE, 4: I RATHER NOT AGREE, 5: I DO NOT AGREE)

5.1.2.9 Awareness raising and education of the public

The analysis of the structured questions also shows that a vital component of an energy-flagship region is awareness raising and education of the public to positively modify the residents' behaviour. The participants attribute a special importance to the public, because only if the values of an energy-flagship region are lived, can the flagship region be implemented successfully. Thus, awareness raising and education of the public on topics such as sustainability should be put more and more on the regional political agenda.

The participants further agree that they would participate at information events as representatives of their businesses/organisations to show how sustainable initiatives and aspects can be implemented in real world businesses. Only the representative of the stakeholder group "Protection and conservation organization" signals little or no willingness to participate and be involved at information events and to support awareness raising and education at the regional as well as organizational level. This result is unexpected as this stakeholder sees the main role of the stakeholder group in awareness raising and education about topics that concern the national park, such as glaciers, weather and climate. As has already been mentioned above, during the in-depth interviews, it is uncovered that the unwillingness is due to the belief that the development of an energy-flagship region does not concern the operations of the Nationalpark management. However, this stakeholder points out that the position of this stakeholder group is rather observant at this stage, and once the energy-flagship region is implemented and stakeholders are genuinely committed to its success, the group "Protection and conservation organization" would, then, pick up the primary values of the concept and include them in their awareness raising and education initiatives and projects.

Looking at the results of the other stakeholder groups, it shows, for the first time, that stakeholders support awareness raising and education of the public on the topic of sustainability more at the organizational level than the regional.

The participants only rather agree to the statement about attending further trainings (seminars, workshops, information events, etc.) to get to know about new ways of operating more sustainably in order to become a flagship business/organisation. Generally, it can be observed that the willingness to contribute and participate is higher within this component than in previously mentioned ones. Thus, it is not surprising that the participants are mostly positive about being actively involved in education and information events for the public on the topic of sustainability within an energy-flagship region.

FIGURE 25: ASSESSMENT OF THE STATEMENTS ABOUT AWARENESS RAISING AND EDUCATION OF THE PUBLIC ACCORDING TO THE STAKEHOLDERS' AGREEMENT (1: I FULLY AGREE, 2: I AGREE, 3: I RATHER AGREE, 4: I RATHER NOT AGREE, 5: I DO NOT AGREE)

5.1.2.10 Modification of tourist behaviour

The modification of tourist behaviour is rated as rather important by the participants, since they are aware that it will change automatically once the region has implemented sustainability values, projects and initiatives successfully within the energy-flagship region and believe that the modification of tourist behaviour, therefore, does not necessarily have to be a part of an energy-flagship region. Tourists are not seen as decisive for the successful implementation of an energy-flagship region, which is reflected in the assessments of the individual components that are only moderately positive.

The results of this component clearly show that the stakeholder group "Tourism organizations" attribute more importance to this aspect and are more involved in it than any other stakeholder group (as can be seen in Figure 26). This group highly agrees to the aspect of supporting the modification of tourist behaviour at the regional, as well as organizational level, through marketing and awareness raising measures and is certain that tourism businesses would assist in changing tourist behaviour to a more sustainable one in an energy-flagship region.

The other stakeholder groups do not see having a substantial and active role in this area.
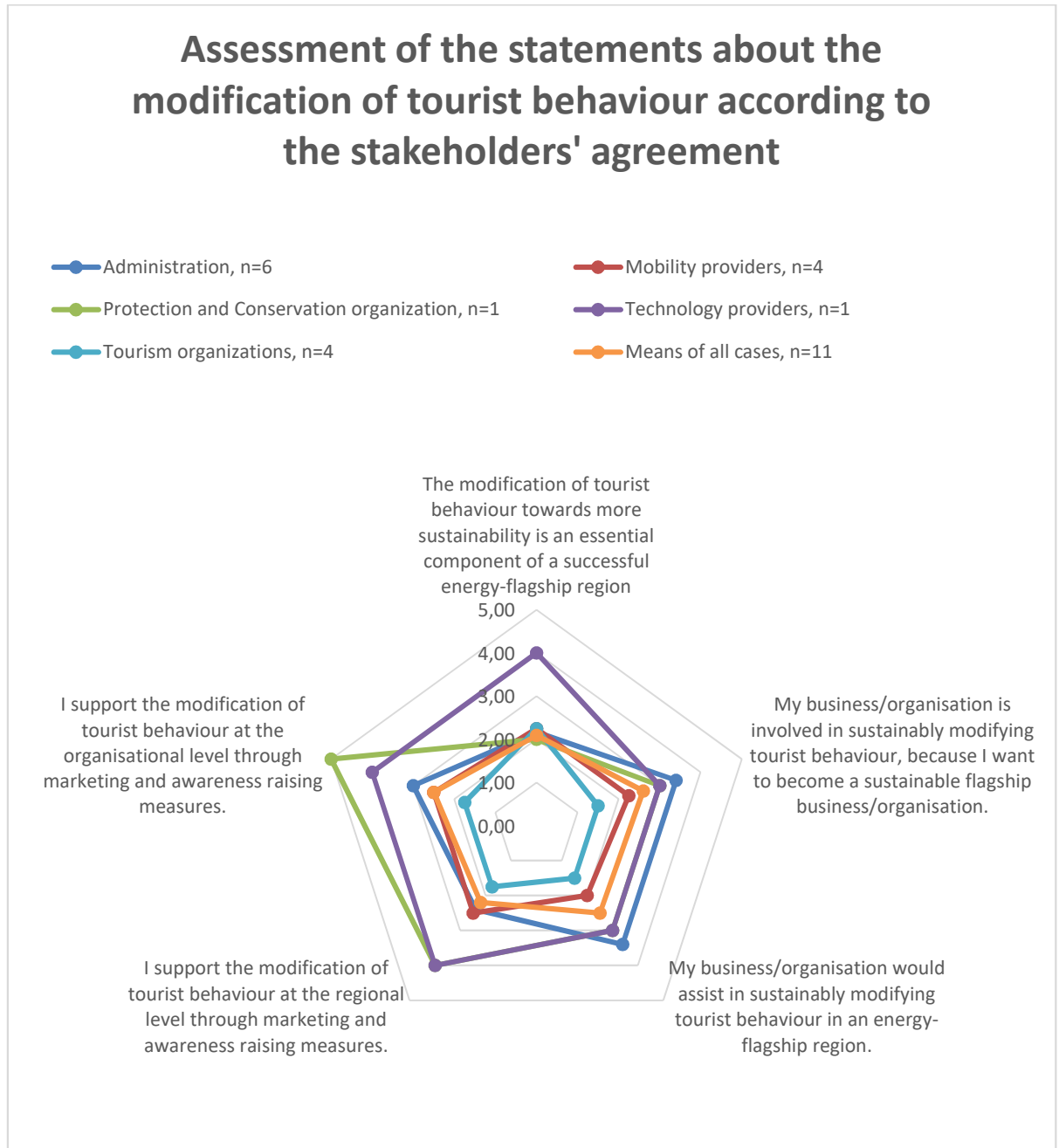
FIGURE 26: ASSESSMENT OF THE STATEMENTS ABOUT THE MODIFICATION OF TOURIST BEHAVIOUR ACCORDING TO THE STAKEHOLDERS' AGREEMENT (1: I FULLY AGREE, 2: I AGREE, 3: I RATHER AGREE, 4: I RATHER NOT AGREE, 5: I DO NOT AGREE)

5.1.2.11 Environmentally friendly winter technology

When it comes to environmentally friendly winter technology, the stakeholder within the groups "Administration", "Protection and conservation organization" and "Technology providers" agree that if an energy-flagship region is to be created, this component should be included.

The use of environmentally friendly winter technology within the business/organization is only important for the stakeholders of the group "Protection and conservation organization" and "Technology providers". The other stakeholders do rather not agree with this statement. This trend is also reflected in the result which shows that the stakeholder of "Technology providers" is the only one who supports the use of environmentally friendly winter technology at the organizational level. Moreover, this stakeholder indicates that projects concerning environmentally friendly winter technology have already been implemented during the past three years in the business and further plans exist for improvements. Additionally, it is stated that the stakeholder's business is interested in a sustainable certification for winter technology (cableways, slope preparation, etc.). More on the topic environmentally friendly winter technology, all stakeholders agree that sustainable energy production and electro mobility are essential components within it. When taking such sustainable measures, the participants agree that the winter technology providers should communicate clearly, that sustainability plays an important role in the business/organization.

However, the statement "To protect the sensitive nature of the national park, further skiing areas that are created through merging of skiing regions should not be exploited" in an additional questionnaire only receives mild agreement. This result is surprising, because as has been mentioned above, natural protection seems to be important for the participants.

Another unexpected outcome refers to the unwillingness of the stakeholder within the group "Technology providers" to contribute and be actively involved in the area of environmentally friendly winter technology during the development of an energy-flagship region. Generally, the evaluation shows that there is no willingness among the stakeholders to engage in this field.
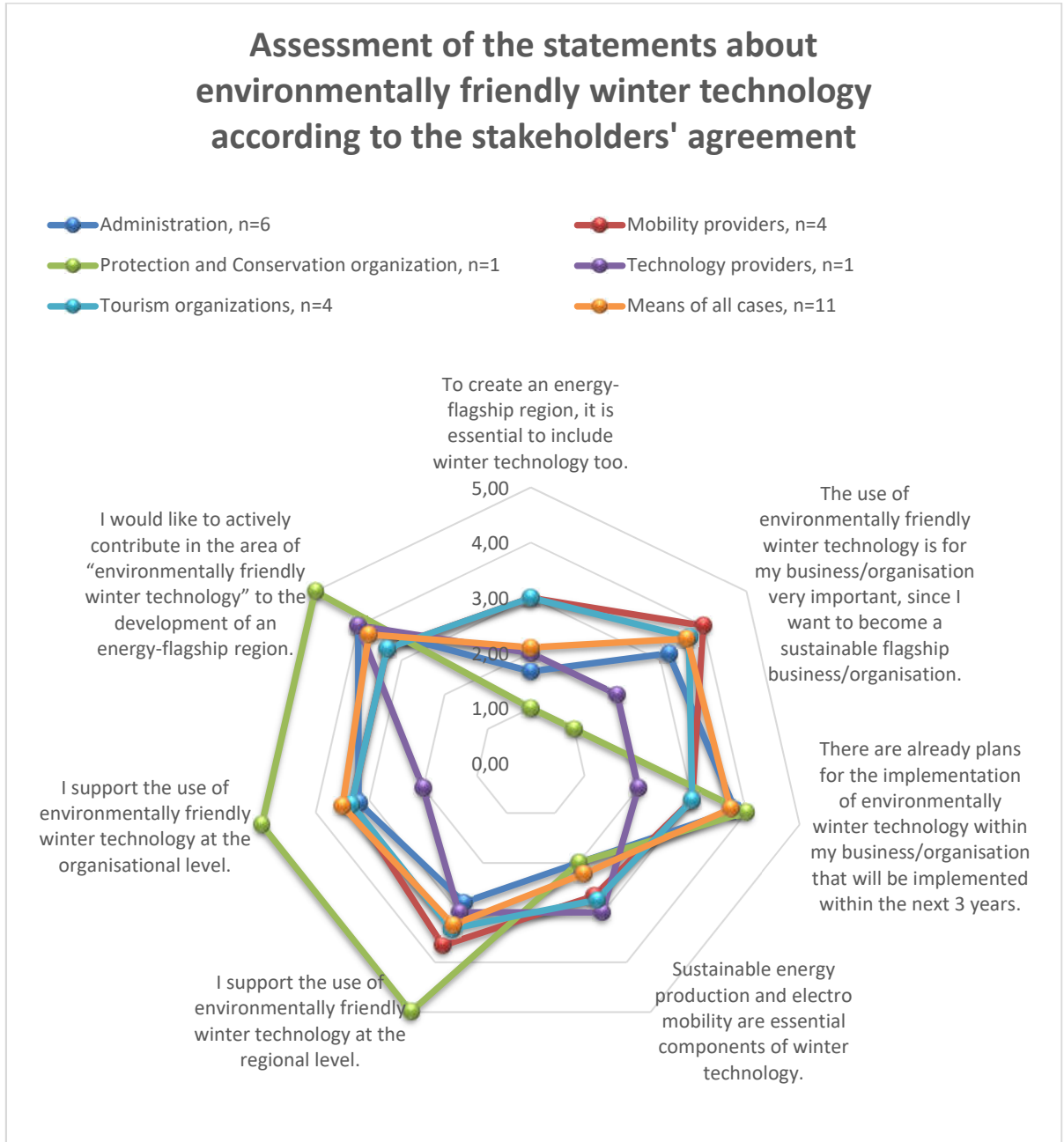
FIGURE 27: ASSESSMENT OF THE STATEMENTS ABOUT ENVIRONMENTALLY FRIENDLY WINTER TECHNOLOGY ACCORDING TO THE STAKEHOLDERS' AGREEMENT (1: I FULLY AGREE, 2: I AGREE, 3: I RATHER AGREE, 4: I RATHER NOT AGREE, 5: I DO NOT AGREE)

5.1.2.12 Support and protection of culture and cultural heritage

Throughout the assessment of the component support and protection of culture and cultural heritage, the stakeholders only moderately agree with the statements.

Even though the stakeholder group "Tourism organizations" agrees that the support and protection of culture and cultural heritage is important for their businesses/organizations as well as at the regional level and that an essential part of an energy flagship region should deal with it, the willingness to contribute and participate in this area is rather low. The rest of the stakeholders do not see this component as an important aspect of an energy-flagship region. However, stakeholders do indicate that they support the protection of culture and cultural heritage at the regional level, but still do not want to participate in this area during the development of an energy-flagship region.

Overall, this component receives rather negative assessments, which points out that it is not important within an energy flagship region, since a disinterest and lack of willingness of the participants is observed.

Figure 28 shows the results of the assessments of the individual stakeholder groups as well as the overall mean for this area.

FIGURE 28: ASSESSMENT OF THE STATEMENTS ABOUT THE SUPPORT AND PROTECTION OF CULTURE AND CULTURAL HERITAGE ACCORDING TO THE STAKEHOLDERS' AGREEMENT (1: I FULLY AGREE, 2: I AGREE, 3: I RATHER AGREE, 4: I RATHER NOT AGREE, 5: I DO NOT AGREE)

5.1.2.13 General statements about an energy-flagship region

The results of the statements concerning the attitudes towards the development of an energy-flagship region affirm that the majority of the stakeholders are highly positive towards it and clearly oppose the statement "I am against the development of an energy-flagship region". Nevertheless, when it comes to showing commitment and actively engaging in the development process of the energy-flagship region and its overall concept, the participants express only a moderate willingness to contribute at the regional level. The stakeholders would prefer to support its development at the organizational level, since it is believed that the energy-flagship region offers an additional value for their businesses/organizations.

The result of the stakeholder within the group "Protection and conservation organization" reflects the observant and sceptical position towards the serious and genuine implementation of the energy-flagship region's concept that is shown throughout the assessment of the structured questions. The representative of this particular group even indicates to be against the development of an energy-flagship region, even though it is believed that the energy-flagship region offers an additional value for the organization. So far, there is no willingness to actively engage and support its development. However, as already mentioned above, once this stakeholder perceives that the development of the energy-flagship region is taken seriously and aims for fundamentally changing the region towards enhanced sustainability and is not just implemented for marketing purposes, this person is willing to reconsider.
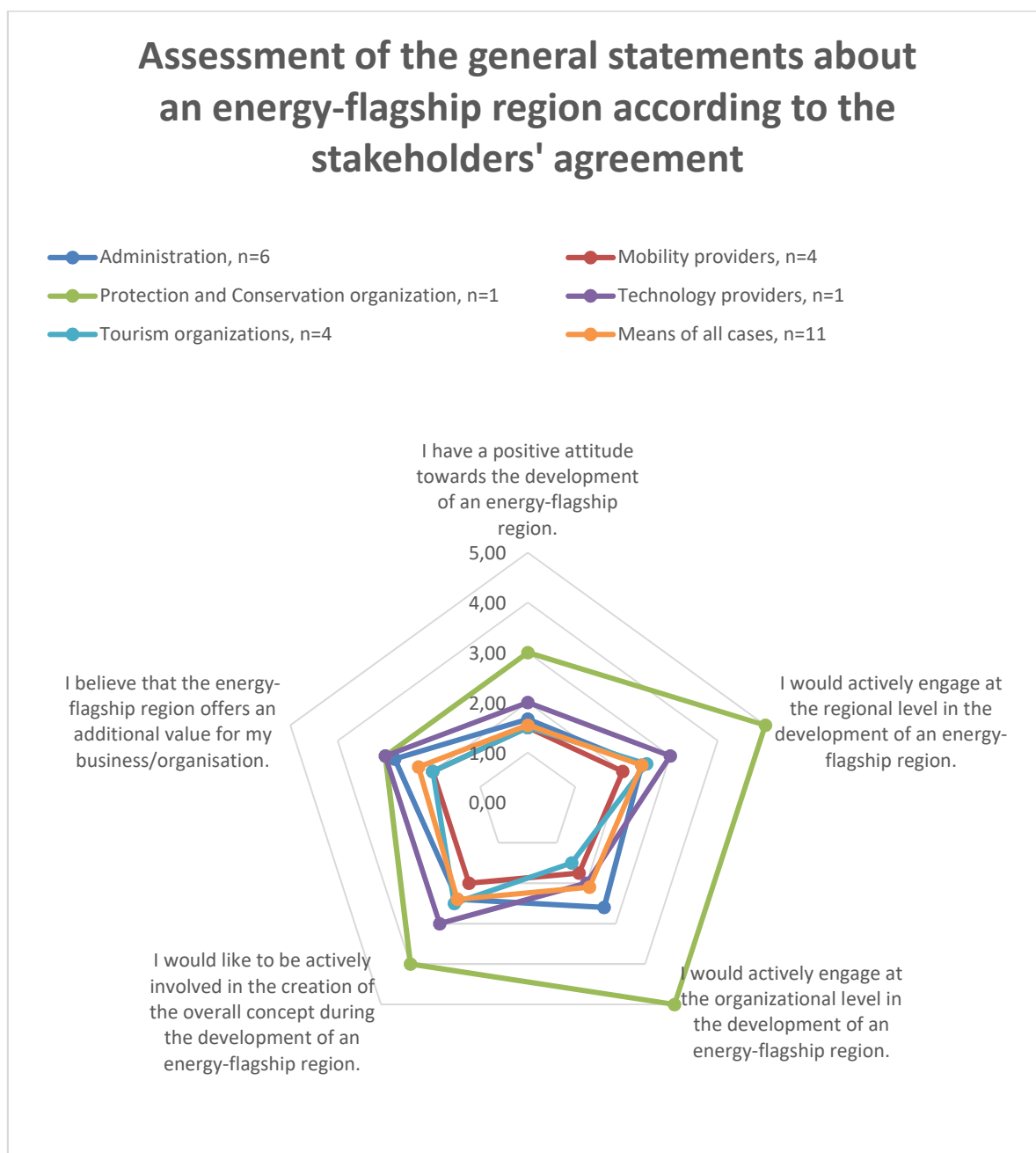
FIGURE 29: ASSESSMENT OF THE GENERAL STATEMENTS ABOUT AN ENERGY-FLAGSHIP REGION ACCORDING TO THE STAKE-HOLDERS' AGREEMENT (1: I FULLY AGREE, 2: I AGREE, 3: I RATHER AGREE, 4: I RATHER NOT AGREE, 5: I DO NOT AGREE)

5.1.2.14 Summary of the results of the structured questions

To sum up the results of the components that were mentioned above, the analysis shows very well that a project in which several stakeholder groups are involved, is difficult to implement since many different interests are encountered, leading to a conflict in interest. This became particularly apparent during the evaluation of the individual components which makes the interests of the stakeholder groups visible. Overall, the development of an energy-flagship region is important for each stakeholder. However, only three components receive great approval from

all stakeholders across the groups, which refer to environmentally friendly mobility, destination marketing and image as well as awareness raising and education of the public. Projects that deal with these three aspects must be included in an energy-flagship region within the LEADER-region Nationalpark Hohe Tauern and the willingness to contribute is rated as high, according to the participants. Since tourism is seen as the major driving force of the economy and the stakeholders state that their businesses and organizations are affected directly and indirectly by this flourishing sector, it ought to be incorporated in the concept of the energy-flagship region to ensure a successful implementation.

Components that seem to be least important are environmentally friendly winter technology and the support and protection of culture and cultural heritage. Other potential elements of an energy-flagship region show a broad variance in terms of importance, which implies that every business and organization has its own interests and internal agenda.

Generally, it can be said that the participants attribute a higher priority to the application of the individual components at the regional level than at the organizational one. Yet, the responsibilities within an energy flagship region are basically put at the regional level rather than at the organizational. This is also reflected in the commitment of the individual stakeholders which is evaluated as low. This is rather surprising, since an energy-flagship region is perceived as positive and the overall attitude towards it is enthusiastic. However, during the in-depth interviews it is stated that one disadvantage of an energy-flagship region is that its development and administration is time consuming and connected to high investments, which might explain the low willingness to engage in activities within it. The majority of the stakeholders already has more than one position and function and might encounter time constraints when being involved in the development of an energy-flagship region.

As has already been mentioned beforehand, the only stakeholder that is rather hesitant and takes on an opposing side towards the development of an energy-flagship region is the representative of the stakeholder group "Protection and conservation organization". Firstly, this stakeholder does not see his group as an active actor within the development of an energy-flagship region and secondly, the in-depth interviews reveal that this person does not believe, yet, that this project will be implemented to genuinely contribute to sustainable development. This statement is based on the belief that many projects have been implemented in this region to acquire the funding and for marketing purposes, but once the funding period ended, the project ended with it. During the interview with this particular person, a very strong commitment to the values of the national park are observed and it is stated that once the energy-flagship region is implemented and a long-term vision to achieve more sustainability is followed, the participation and engagement is not precluded.

5.1.3 Additional components of an energy-flagship region according to the participants' views

The responses to the question "Are there other components or areas that have not been listed, but would be important for you?" refer mainly to social and energy components of an energy-flagship region.

Stakeholders perceive that energy recovery is often left out, but consider it as an important aspect that offers great potentials. Energy recovery is further linked to closing the energy cycle. When developing an energy-flagship region, it is essential to not only reduce the energy use and increase the energy efficiency, closing the energy cycle should be a goal too. As part of this approach, energy efficiency measures should also be applied to the individual traffic and public transportation systems.

Apart from energy projects, a focus should be put on social issues. The extent of job offers for highly educated women is seen as insufficient and the sector of childcare needs to catch up. It is indicated that many women are struggling with combining their career and motherhood due to a lack of childcare services. Improvements in this area on weekends, bank holidays and school holidays are seen as essential to release some pressure off working mothers.

Moreover, children and adolescents should be included into the development of an energy-flagship region. Interview participants point out that they are the future generation that will decide upon the paths that the region will take in several years. Therefore, the education and awareness raising of this group must start early.

Another stakeholder group that is seen as important is that of the agricultural businesses and farmers, since they contribute to shaping the landscape image and provide the region with high quality products. Therefore, the inclusion of regional farmers can enhance regionality.

When talking about regionality, stakeholders emphasize on the regional resource potential and the benefits of the countryside. Based on scientific studies (such as the AMAS Höhenstudie[6]), the interview participants highlight the positive effects of the fresh mountain air and springs on the human health. Offers in the area of preventative health as well as for body, mind and soul should be increasingly developed and marketed.

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[6] AMAS Höhenstudie is a study that reflects on the advantages of the mountain air on the human organism.

5.1.4   Knowledge about sustainable projects and initiatives

5.1.4.1   Knowledge about sustainable projects and initiatives at organizational level

The stakeholders are aware of several projects that deal with renewable energy generation at the organizational level, which have become increasingly attractive for businesses as well as the public. This does not only refer to electricity, but also to heat generation. Participants list the implementation of hydropower plants, photovoltaic plants, solar energy plants for heating as well as air-heating and geothermal energy pumps. It is furthermore reported that businesses are working on becoming more energy efficient, since energy topics have taken centre stage and have attracted the businesses' attention due to cost saving potentials.

The Nationalpark management, Fahnen Gärtner and Senoplast are mentioned as businesses that introduced several sustainable initiatives. The interviews reveal that the rangers from the Nationalpark Hohe Tauern use electric bikes for their trips to set a positive example. The Nationalpark management has also installed an electric charger station at and a photovoltaic plant on the Nationalpark centre, and all Nationalpark buildings and exhibitions are equipped with heating systems that burn renewable resources. On top of that, one major activity of the Nationalpark is awareness raising and education.

Fahnen Gärtner and Senoplast especially stand out for their social commitment towards working mothers through the introduction of a corporate kindergarten and home-office options.

Another example that is introduced is the hotel Krallerhof in Leogang, outside the Nationalpark region. This hotel has implemented several sustainable measures and has become a flagship business through their commitment to environmental protection and renewable resource use. The following list of measures shows the environmental commitment of Krallerhof:

- Photovoltaic plants for power generation
- Connection to district heating with pellets
- Heating solely with regional wood
- Implementation of multifunctional electric chargers
- Development of first corporate 40°C hotel laundry service in Austria
- Introduction of electric cars for the hotel
- Composting of bio-waste
- Better isolation of the house to save energy
- Krallerhof is part of the Solarroute for electric cars (an inner alpine closed network of businesses that offer electric charger stations)
- Cogeneration plant for several businesses
- Employee house

Furthermore, the energy sufficient hut at the Postalm is introduced by interviewees to show that energy measures can even be applied in the remotest areas in the Alps. This hut offered biomethane vehicles, which have been out-of-operation since the funding period ended.

Several of the projects that have been mentioned above, have been developed and implemented through cooperation between different companies and institutions. Some interviewees even point out that there are already several existing cooperations, but there is still room for improvement.

5.1.4.2 Knowledge about sustainable projects and initiatives at regional level

Especially within the field of mobility, are the interviewees knowledgeable about initiatives such as the Nationalpark-Sommercard for public transportation systems within the Nationalpark region and E-Bob, an electric mobility project of the municipality Wald-Königsleiten. Another example of a mobility project is one which is currently in the planning phase and aims to connect the route from Fürth to Kaprun through a bus connection. On top of that, participants mention several skiing and hiking buses that were brought in to transport tourists from the hotels or assembly points to the cableway stations.

Interviewees furthermore, point out that there is an electric car-sharing system in place and a network of electric power stations in the region.

For nature lovers, the interviewees highlight that the LEADER-region Nationalpark Hohe Tauern offers extensive biking routes with uniform signs, year-round biking and trail running tracks as well as educational trails about topics such as energy and glaciers.

The Nationalpark management in particular engages in awareness raising activities and has founded the climate school which already has 42 partner schools within the region. Furthermore, several exhibitions are organized to educate people about the weather, the climate and its influence on glaciers.

To integrate health aspects in the region, interviewees report that the Tauern Health brand has been developed which offers special hotels and treatments for asthmatics and allergy sufferers. This concept was based on the "AMAS Höhenstudie" that indicated the benefits of the fresh Alpine air.

Most of these projects are mentioned in connection with existing cooperations at the regional level. Other projects that are identified by the participants are the photovoltaic plants in Neukirchen, bio-heating systems and the initiative to rehabilitate the Pinzgauer Lokalbahn.

5.1.5   Need for improvement

5.1.5.1   Need for improvement at the organizational level

According to the interview participants, monitoring and benchmark systems are not yet used by organizations and businesses. When these systems are applied broadly, then figures can be compared and efficient results can be achieved.

Furthermore, innovative and well-developed energy storage systems should be applied to increase energy efficiency especially within cableway companies and mobility fields.

Participants are certain that there is always room for improvements also at the organizational level, especially concerning energy related measures. The Nationalpark management and Nationalpark centre should act as a role model and be the first to implement new and innovative measures and initiatives, according to the interviewees. However, participants draw attention to the fact that the Nationalpark centre is lagging behind and only invests in technologies that have been proven and established in the market.

5.1.5.2   Need for improvement at the regional level

Interview participants are convinced that the field of mobility has to be improved significantly. Especially, the public transportation system must be developed further by expanding the routes, adjusting the frequencies of the schedule to the needs of the workforce and making the ticket prices more affordable. Additionally, the energy efficient and electric mobility is a promising field that could be applied not only within public transportation systems, but for private households too. According to the interviewees, issues of mobility are connected to regional planning, which should be based on existing infrastructure, hot spots and sights to enable a connection to public transportation systems.

A majority of the interview participants believe that a network or platform for knowledge exchange is missing. Overall, the region does not appear as coherent and is missing a long-term perspective. Creating a platform for exchange would create a network of stakeholders within the region that enables collaboration and cooperation. Projects, as well as cooperations, are not perceived as lasting. Usually, projects are implemented quickly to receive the funding and to market it to tourists, but then most of them die again.

Other areas that are seen as lagging are communication activities and marketing, support of innovative start-ups, awareness raising of the public, protection of ecosystems, energy efficient lighting and the application of smart city initiatives.

5.1.6 Conditions that make the LEADER-region Nationalpark Hohe Tauern suitable for an energy-flagship region

When asking the interviewees about existing conditions that would make the LEADER-region Nationalpark Hohe Tauern suitable for an energy-flagship region, the majority believes that the concept would be coherent with the values of the Nationalpark Hohe Tauern. Being a national park provides a solid foundation for the successful implementation of projects that aim for enhancing the sustainability. The region was able to preserve a large part of its nature and resources through the national park initiative, which provides the region with a great potential. Participants emphasize that this would not have been possible without the existence of the initiative. An intact regionality, in terms of use of regional supply chains and regional products, is another aspect that is seen as beneficial for the development of an energy-flagship region. Along with these characteristics comes a profound awareness for nature and environmental protection, according to the interview participants.

Five participants mention the LEADER management as favourable for the development of an energy-flagship region, since it has already established a network of stakeholders and is familiar with the funding system in Austria and project coordination. Furthermore, participants point out that the LEADER-region has similar goals as the concept of the energy-flagship region with respect to the use of renewable energy sources and the support of innovation.

Figure 30 summarizes the abovementioned aspects that have been named most often as aspects that make the LEADER-region suitable for an energy-flagship region.

One interviewee considers the fact that the LEADER-region Natonalpark consists of two model regions for climate and energy (KEM Oberpinzgau and KEM Nationalpark Hohe Tauern) as an advantage and is certain that it lays the foundation for a successful implementation of an energy-flagship region.

Another participant mentions the vast amount of motivated young people and the high innovative power within the region that would support the project. It is also said that the residents would show a great acceptance towards the energy-flagship region.

Taking the uniform structure of the businesses in the region into account, one interviewee is certain that it will facilitate a quick and straightforward implementation of principles and projects of the energy-flagship region.

FIGURE 30: CONDITIONS THAT MAKE THE LEADER-REGION NATIONALPARK HOHE TAUERN SUITABLE FOR AN ENERGY-FLAGSHIP REGION

5.1.7 Conditions that make the LEADER-region Nationalpark Hohe Tauern not suitable for an energy-flagship region

Many interviewees take the view that the public transportation system is not well developed, which complicates the creation of an energy-flagship region in the area of mobility, because there are only limited possibilities to expand the public transportation systems due to the conditions of the countryside (such as mountainous landscapes, low accessibility, etc). In addition to these restrictions, the participants believe that the public is lacking in willingness to use the public transportation services and is not ready for projects that deal with sustainability.

Another concern that many respondents raise referred to the difficulty to find people that represent, organize and develop projects within the LEADER-region Nationalpark Hohe Tauern. Even though the regional management and LEADER management are seen as beneficial for the development of an energy-flagship region, participants still postulate a rather negative reputation to them, because they lag in presenting the region coherently and keeping a long-term perspective. It is said that many projects are started, but barely any are implemented properly and once no further funding is available, the projects end. The interview participants further criticize that the majority of the projects are just used for marketing purposes rather than for bringing

change. Therefore, the interviewees doubt that there will be sufficient dedication to the values of the energy-flagship region.

Particularly, the complex and untransparent funding system in Austria is criticized by the stakeholders as well as the expert. It is said, that most projects are not implemented due to too high costs and a confusing application process for funding along with unclear offers. Furthermore, some participants and the expert feel that there is a lack in assistance when needing consultancy on available funding as well as the application process.

However, three participants are convinced that the region has more positive aspects that assist in developing an energy-flagship region than negative ones that prevent the LEADER-region Nationalpark Hohe Tauern from becoming an energy-flagship region.

A representation of the six most often named restrictions can be found below in Figure 31.

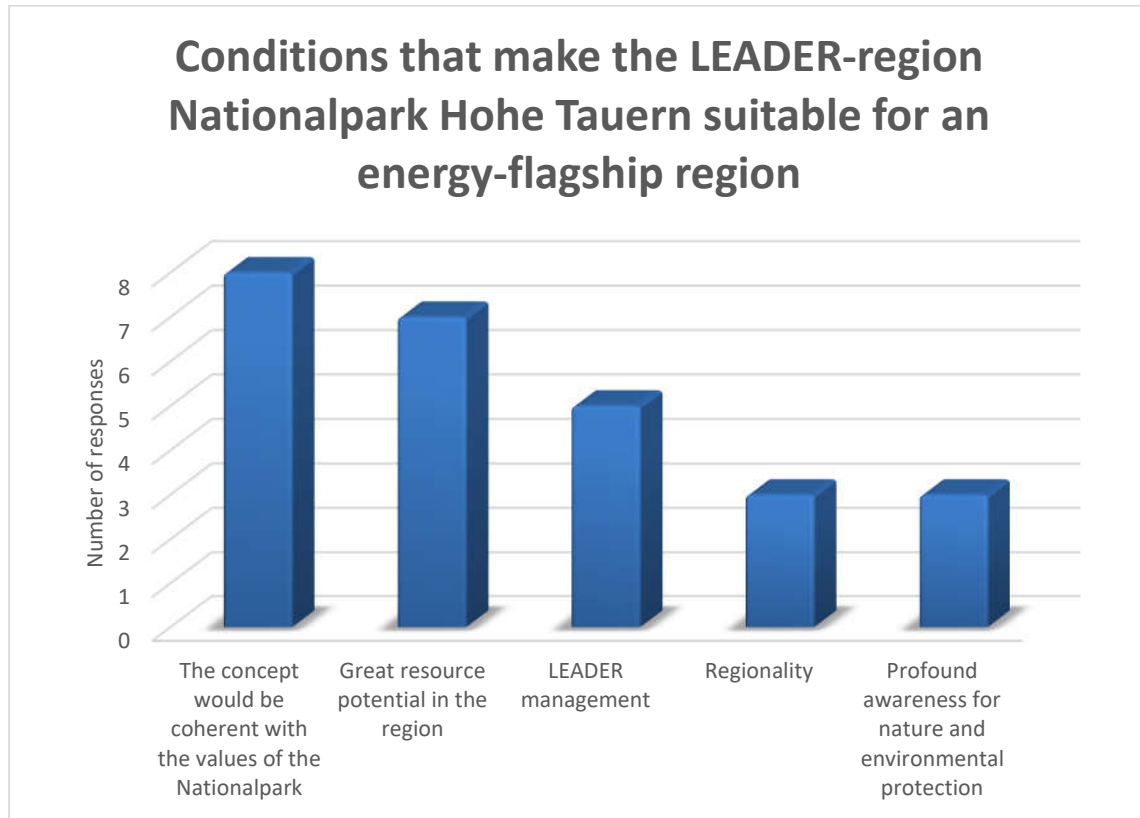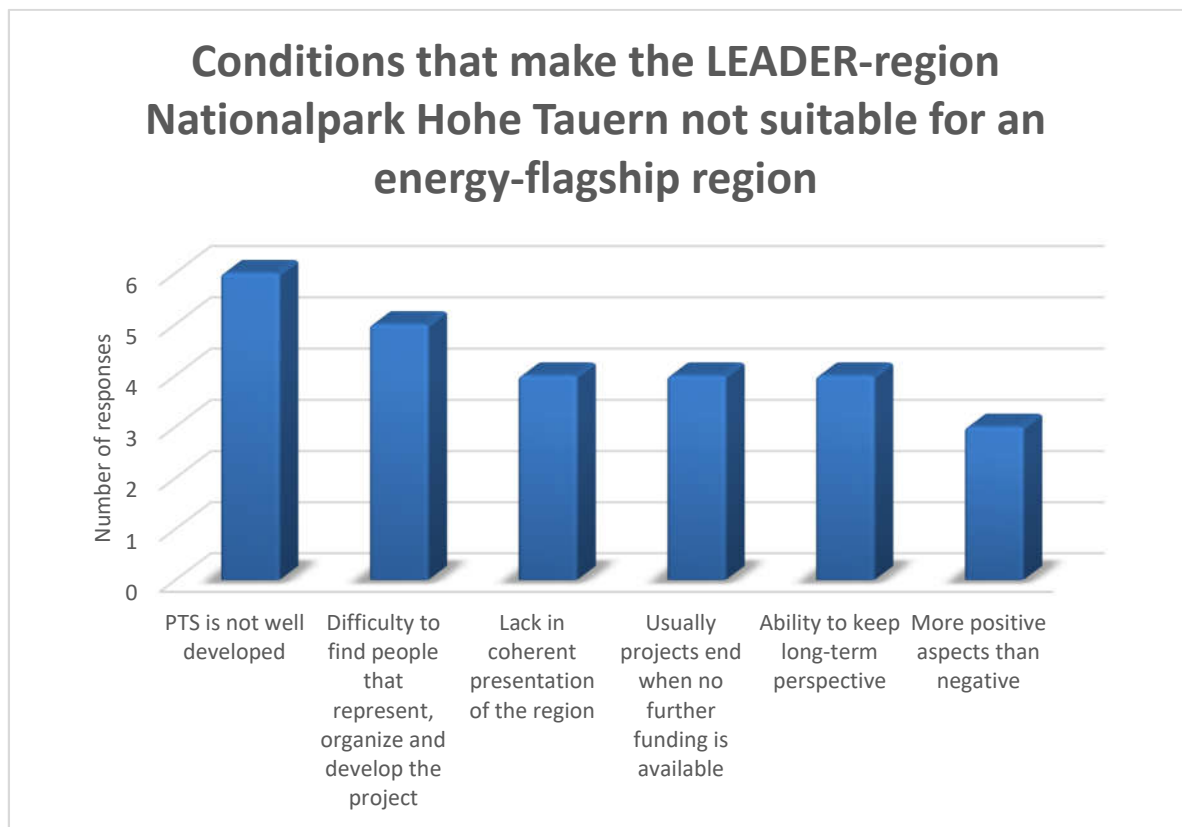## Conditions that make the LEADER-region Nationalpark Hohe Tauern not suitable for an energy-flagship region

FIGURE 31: CONDITIONS THAT MAKE THE LEADER-REGION NATIONALPARK HOHE TAUERN NOT SUITABLE FOR AN ENERGY-FLAGSHIP REGION

According to the interview participants, other reasons that make the LEADER-region Nationalpark Hohe Tauern not suitable for an energy-flagship region are:

▪ Tourism associations are not well connected

- Lacking communication and knowledge exchange between organizations
- Lacking financing options
- Complex bureaucracy at municipality, regional, provincial and federal level
- Lacking awareness for sustainability topics within the public
- Simple structured minds of people
- Capacity constraints of the municipalities
- Excessive agriculture that is not sustainable
- Long distance to metropolitan areas

5.1.8 Benefits of an energy-flagship region

5.1.8.1 Benefits for the region

As Figure 32 shows, the most prominent benefits refer to the image of the region and to benefits that concern residents and tourists according to interviewees' opinion. Specifically, the further development of the public transportation system would be beneficial for the region's residents.

Some participants state that through the creation of an energy-flagship region, the LEADER-region Nationalpark Hohe Tauern would attract national and international attention and gain a valuable USP. The interviewees argue that this, in turn, would increase the awareness for sustainability and enhance environmental protection. In addition to that, the LEADER-region might be able to increase tourist numbers through the new image.

The participants are certain that the energy-flagship region would not only enable the use of external know-how in the region and accelerate the development of innovative technologies, but it would also offer financial benefits through funding.

The expert, on the other hand, focuses more on the saving potentials, knowledge transfer and environmental benefits that an energy-flagship region would entail.
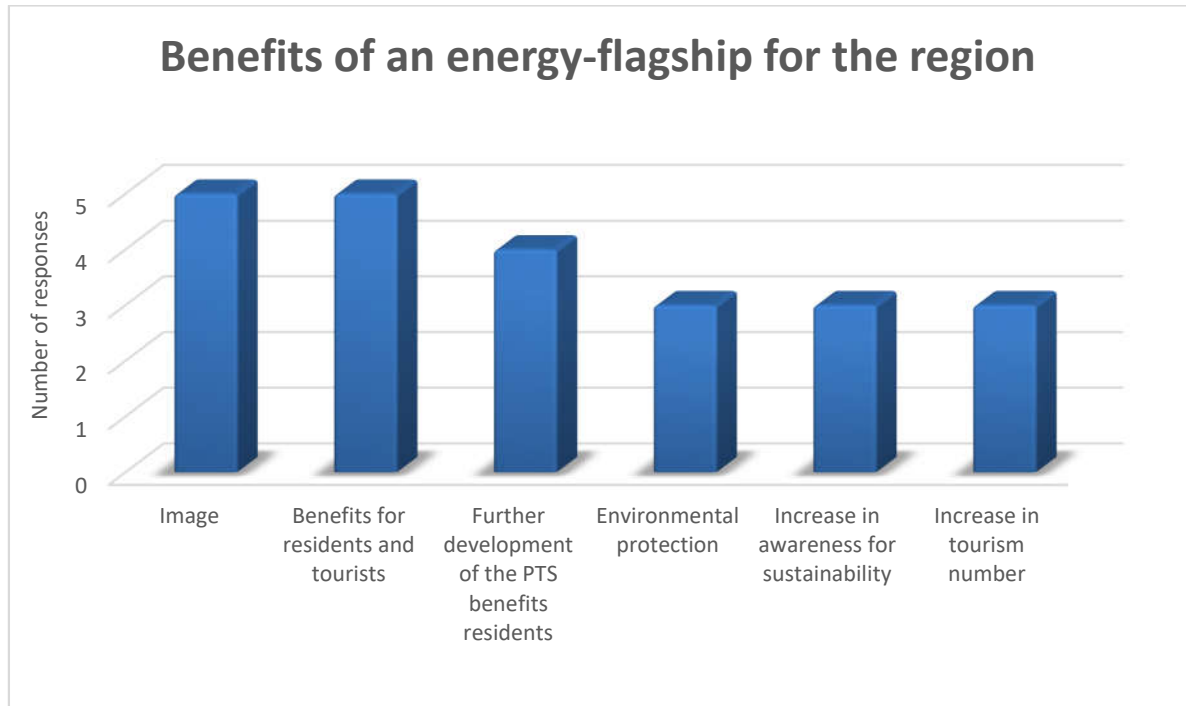
FIGURE 32: BENEFITS OF AN ENERGY-FLAGSHIP REGION FOR THE REGION

5.1.8.2 Benefits for the organizations/businesses

The participants believe that the individual organizations/businesses can benefit remarkably through the extensive regional marketing, and an active contribution in the development of the energy-flagship region would enhance the image of the company. Companies would further be able to increase their energy efficiency and reduce the energy use. The participants explain that this development, in combination with increased sales, would subsequently increase the profits.

5.1.9 Disadvantages of an energy-flagship region

5.1.9.1 Disadvantages for the region

A large part of the respondents claim that the creation of an energy-flagship region does not have any disadvantages. Other participants, nevertheless, identify the activities within an energy-flagship region as time consuming and connected to high investments. As has already been mentioned above, this statement might explain the low commitment that is observed during the evaluation of the structured questions above.

The participants further point out that it might be challenging to adhere strictly to the values of the energy-flagship region. Once such a region is instigated, the expert emphasizes, it should be taken seriously and must not be used solely for marketing purposes.

When planning and developing the concept for the energy flagship region, there is a risk of having false expectations according to a participant. The involved stakeholders have to be aware of the characteristics of the region and that only certain projects are feasible.

5.1.9.2 Disadvantages for the business/organization

Only two respondents answer this question and are certain that the company will face high investments, but other than that, no disadvantages were identified.

5.1.10 Relevant and involved stakeholders

5.1.10.1 General list of stakeholders

During the interview, the participants and the expert reveal information about stakeholders that are relevant for the development of an energy-flagship region and are affected by it. These are:

- Federal government
- Provincial government
- Municipalities
    - o Creation of a resort for energy related topics at municipality level
    - o Mayors
- Politicians
- LEADER management
- Regional management
- Management of the model regions for climate and energy
- Nationalpark management
- Ferienregion management
- Chamber of commerce
- Chamber of labour
- Chamber of agriculture
- Businesses and organizations
    - o Cableway companies
    - o Agricultural businesses
    - o Mobility providers
    - o Energy providers
    - o Technology providers
    - o Flagship organizations
    - o Organizations for emergency response
- Whole value chain
- Residents

- o   Young people (students, pupils, etc.)
- Future generations
- Tourism sector
  - o   Tourism associations
- Tourists
- AIT
- MODUL University Vienna
- Energy Changes
- Ecosystem and environment
- Media

5.1.10.2   Stakeholders that have to work together for the development of an energy-flagship region

To develop an energy-flagship region, the support of regional stakeholders is important. Thus, the interviewees are asked which stakeholders should work together in order to create an energy-flagship region. The results are depicted in Figure 33 below and show how many participants name the individual stakeholders. The results coincide with the opinion of the expert. It becomes apparent that the most important stakeholders seem to be the regional management, the tourism sector and the municipalities. However, businesses and organizations, tourism associations, the LEADER management, and the Nationalpark management are also often identified as essential for the development of an energy-flagship region. It is particularly interesting that the Nationalpark management is perceived as having a decisive role in the development process, since this stakeholder does not see the organization having an active role in the energy-flagship region as is revealed during the interview and the evaluation of the structured questions.

Other stakeholders that are mentioned are:

- Resort for energy related topics at municipality
- Technology providers
- Residents
- Organizations for emergency response
- Ferienregion management
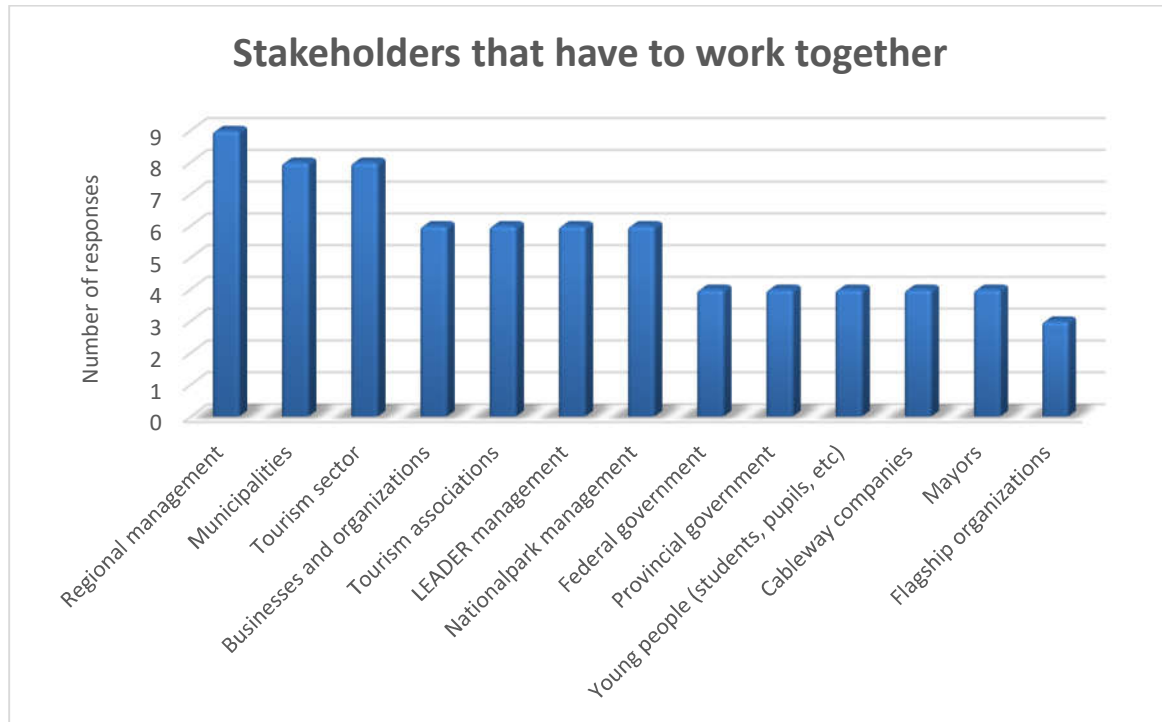
FIGURE 33: STAKEHOLDERS THAT HAVE TO WORK TOGETHER FOR THE DEVELOPMENT OF AN ENERGY-FLAGSHIP REGION

5.1.10.3 Areas of involvement

After identifying the main stakeholders, the interviewees are asked to describe the stakeholders' role and elaborate on the areas in which they should be involved. According to the opinion of the majority of the participants, stakeholders have to work closely together when developing and implementing the concept of the region. However, the interviewees point out that the responsibilities and duties depend on the type of each stakeholder, not every stakeholder will be involved in every process, since different stakeholders have different abilities and strengths. Another essential part that needs the collaboration of different stakeholders is the planning phase and the controlling of the project. The participants are also confident that networking and cooperating is beneficial for a successful implementation, especially if flagship organizations contribute and act as motivators to enhance the awareness and acceptance of businesses and the public. Other areas of involvement that are named are financing and politics.

When developing an energy-flagship region, the expert recommends forming a small group of relevant stakeholders of the region to elaborate on different aspects and components of the flagship region to create a concept that is coherent, authentic and winning. Once this is completed, the individual partner municipalities have to be informed and motivated by the representatives of this project. When establishing such a project, the expert further stresses that the crucial part is not only attributed to these particular people mentioned beforehand, but also to the public. "Only when the public is involved and lives the values of an energy-flagship region,

can the concept be implemented successfully", is the expert, Josef Essl (head of the Alpenkonventionsbüros und managing director of CIPRA Österreich) certain. Furthermore, the public has to understand that the energy-flagship region has the genuine intent to positively influence the development of the region towards increased sustainability and that it will not end when the funding period is over. Therefore, it is essential to create and develop projects for the future.

5.1.10.4 Coordination of projects and initiatives within the energy-flagship region

The interviewees agree that the respective projects and initiatives of an energy-flagship region ought to be coordinated, such that the overview is not lost and suggested setting an overall controlling body. The most suitable organization, according to the participants' view, is the LEADER management of the region Nationalpark Hohe Tauern. The participants can also imagine developing an energy-flagship region in cooperation with the LEADER-region Saalachtal, which is the neighbour region to the LEADER-region Nationalpark Hohe Tauern. To enable a constructive environment, a small and dynamic team should take over these responsibilities. Further organizations that are seen as relevant are the regional management of Pinzgau and the Nationalpark management. Again, the Nationalpark management is perceived as important by the stakeholders within the energy-flagship region, which contradicts the statements of the interview participant from this organization.

The expert agrees that an overall controlling body is beneficial; however, it should be exercised with caution since the bottom-up principle is seen as the key to a successful energy-flagship region. Once the concept and the subsequent instructions are applied top down, chances are high that the public as well as the businesses and organizations would be reluctant to implement the measures, since the motivation would be missing.

5.1.11 Information about the individual stakeholder groups

5.1.11.1 Role of individual stakeholder groups

The stakeholders are asked how they perceive the role of their respective stakeholder group and how it can contribute to the development of an energy flagship region.

The stakeholder group "Administration" sees itself as a networker and initiator that safeguards the region's values, raises awareness and shares experiences. In addition to that, they are responsible for the provision of grant funds which are an important aspect of the energy-flagship region. This perception reflects the outcome of the structured questions of chapter 5.1.2.

"Mobility providers" design the infrastructure, promote decarbonization and are involved in regional planning. Within an energy-flagship region this stakeholder group perceives itself as ben-

eficial since they can assist with their vast knowledge in conducting feasibility studies for mobility projects, provide consultancy during the planning and succour during the implementation phase. This does not only contribute to traffic avoidance, but also to safeguarding the region's values as well as raising awareness. This stakeholder group sets the focus, in the assessment of the structured questions, on these areas as well.

The stakeholder within the group "Technology providers" identifies their main strengths in the adjustment of technologies and the implementation of monitoring and benchmark systems in order to have a positive impact on the development of the businesses and industry sector through presenting the data and figures. This role of the group is not observed in the outcome of chapter 5.1.2, because monitoring and benchmark systems are not included in the list of potential components of an energy-flagship region. However, when these systems are mentioned within an element, the stakeholder attributed high importance to it.

Being a role model is an important aspect for the representative of the stakeholder group "Conservation and protection organization" and their main role, as their name suggests, is natural protection and conservation, as well as awareness raising and education. Within an energy-flagship region, however, this interview participant emphasizes on not being actively involved.

Stakeholders within the group "Tourism organizations" are responsible for the marketing and the communication to the tourist. Even though this stakeholder group attributes an importance to many components within an energy-flagship region, the commitment to destination marketing and image is the highest.

Out of 12 interviews, ten participants believe to be in a position that is and are already performing duties that are essential and beneficial for the development of an energy-flagship region. The two respondents that do not see themselves in such a position belong to the stakeholder groups "Administration" and "Tourism organizations".

5.1.11.2 Willingness to contribute to the development of an energy-flagship region

Ten participants respond to the question "Can you imagine taking on additional duties and responsibilities to contribute to the development of an energy-flagship region?" with a clear yes, whereas two interviewees from the group "Tourism organizations" answer with no. This result is quite contradictory to the results of the structured questions, which presents the overall commitment as low throughout the stakeholder groups. However, the results below show that the stakeholders are mostly willing to contribute in areas which overlap with their jobs and functions that they already have.

The stakeholder group "Administration" reveals to prefer to be involved in networking, initiating projects, marketing activities – especially, in projects that deal with tourism and mobility. Sharing their acquired expertise and assisting during the implementation phase is another function that this group would hold.

"Mobility providers" would like to contribute in areas of and decisions about public transportation systems and other mobility issues. Their contribution would start with developing the concept while offering their knowledge within the field, then they would assist in the implementation of the project, and finally raise awareness in regards to the flagship region.

Tourism stakeholders are interested in the topics of public transportation and mobility too, since it benefits the tourists. However, this group further expresses the wish to participate in awareness raising initiatives and marketing activities as well as contribute to natural protection and conservation. The willingness to contribute to the support and protection of nature is surprising, because this group showed little interest in this component during the assessment of the structured questions.

The most important functions for the group "Protection and conservation organization", when involved in the development of an energy-flagship region, refer to awareness raising and education, along with natural protection and conservation. Noteworthy here is that the representative of this group states that financial resources would not be reallocated to projects within the energy-flagship region, since it is needed for the main operations within a national park, such as leasing of forests.

The stakeholder group "Technology providers" would participate in the development of the concept and in the implementation phase at the organizational level. Furthermore, this group would help to raise awareness for topics that concern the energy-flagship region.

Other tasks that the stakeholders are willing to take on to participate in the activities within an energy-flagship region are discussing relevant topics in political committees and opinion-forming.

Two out of 12 interviewees cannot imagine and are not willing to take on responsibilities within an energy-flagship region and therefore, refuse to respond to this question.

5.1.12 Means of financing the projects

As can be seen in Figure 34, the majority of the interviewees believes that the financial means for the development of an energy-flagship region will be acquired from the federal and provincial funding system. The LEADER management and municipalities could also provide the necessary funds for the realization of such projects. The interviewees further state that a partial self-

financing of involved stakeholders is possible. Cableway companies, for example, are seen as innovative, as well as liquid, and are perceived as contributors to the cause of creating an energy-flagship region. An additional suggestion involves partially financing the projects through implementing taxes on guests.
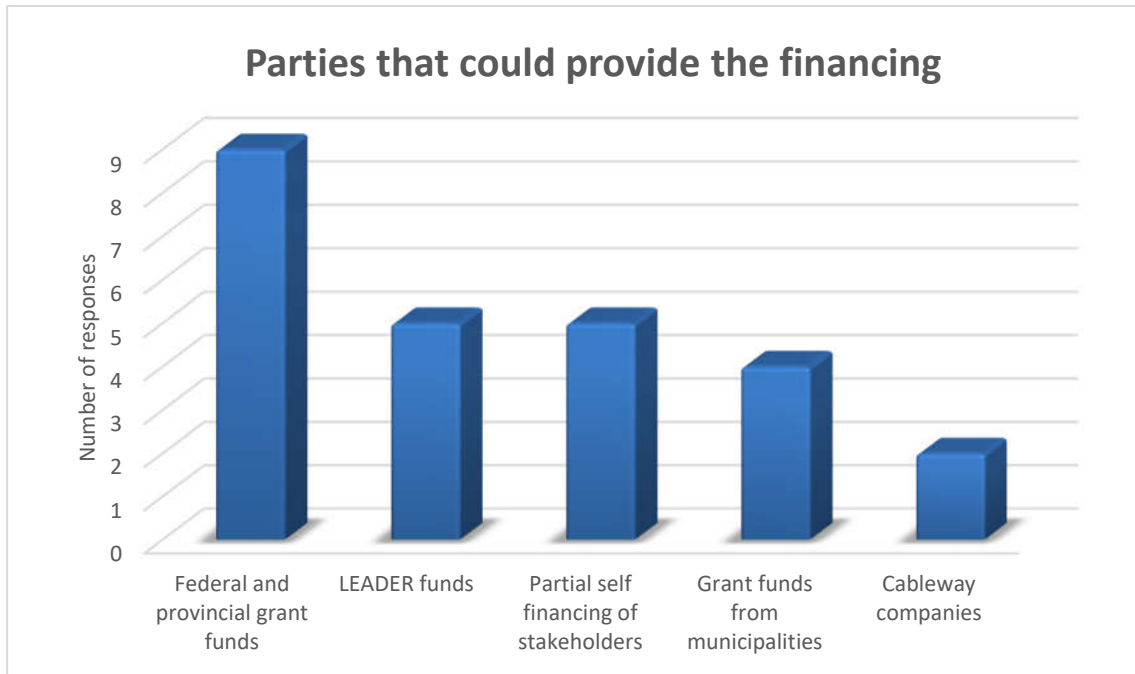

FIGURE 34: PARTIES THAT COULD PROVIDE THE FINANCING

6   DISCUSSION OF THE RESULTS

Generally, it can be concluded that the stakeholders have a positive attitude towards the development of an energy-flagship region and see the concept as a great fit for the Nationalpark Hohe Tauern. However, the participants indicate that the public might not be ready for this type of project, since they are not yet sufficiently knowledgeable about sustainability issues and a lot of awareness raising has to be accomplished beforehand. As an essential stakeholder, the public is either one of the main supporters or opponents, and the interview participants are convinced that an energy flagship region stands or falls with the position of the public towards it. The expert explains that the public is a vital stakeholder within the energy-flagship region, since the projects and initiatives are implemented by the residents and at the regional level, and in case the public does not support the values and concept of the flagship region, it will not be implemented successfully. Additionally, the interview participants are certain that stakeholders throughout the value chain have to be included to enable a successful implementation. Later, once the energy-flagship region is implemented, the participants state that cooperations between different sectors are also an essential component. These results support the fourth hypothesis that says that collaboration throughout the value chain as well as the involvement of the public are seen as crucial for a successful energy-flagship region.

When a number of stakeholder groups are involved in the idea and concept generation process, it is difficult to come to a common agreement, because the decisions are driven by the stakeholder groups' organizational interests and internal agendas. This tendency has also been observed in the course of the analysis: Most of the potential components of an energy-flagship region show a large variance between the individual stakeholder groups in terms of importance and are, thus, prioritized differently. The interview participants agree, however, that several innovative measures have to be combined in the concept to create a USP and gain a competitive advantage. The expert supports this view and sees it as essential to choose few components that are feasible within the region, presentable and innovative. Once these are implemented, further areas can be addressed and enhanced. But first, a common ground has to be found, because only then can a collective path be chosen. This also involves excluding components that seem to be least important, which are identified by the interview participants as environmentally friendly winter technology and the support and protection of culture and cultural heritage. The fact that all the participants agree on three elements (environmentally friendly mobility, awareness raising and education of the public, as well as destination marketing and image) is a sign that even though an interest conflict exists between the groups, this conflict is not as profound such that it gets in the way of finding a common ground. The second hypothesis thematised that every component of the energy-flagship region is perceived with a different importance by the individual stakeholder groups, which can also be observed within

the LEADER-region Nationalpark Hohe Tauern. The third hypothesis that predicted the most important aspects to be energy and mobility related does not apply to this region, since energy topics are rated as rather neutral.

Within the area of mobility, the participants emphasize on the expansion of the public transportation system, affordable tickets and the adjustment of the schedule towards the working population. Although there is a strong need for improvements, the stakeholders still acknowledge the fact that certain constraints exist in developing the regional public transportation system due to the characteristics of Alpine regions. Through addressing mobility, the region would be able to improve two areas that were listed as weaknesses in the SWOT analysis in chapter 2.2. First, the underdeveloped public transportation system would be expanded and improved, which would, in turn, positively influence the second weakness, the dependency on cars.

The second element, awareness raising and education of the public, is found as crucial since the inclusion of the public is perceived as essential for the successful implementation of an energy-flagship region and would enhance a long-term perspective. So far, a coherence and long-term perspective are lagging within the region, but are seen as beneficial for the development of an energy-flagship region, according to the participants. As stated in chapter 2.2, missing awareness for regional products and long-term perspective have been identified as weaknesses; whereas increased awareness for environmental protection was seen as an opportunity. By implementing awareness raising and education initiatives, these three aspects could be potentially transformed into strengths.

These issues are also addressed within the component "Destination marketing and image". A clear and authentic communication inside and outside the region, does not only carry the vision to the public, but enhances the image and attitude towards the concept of an energy-flagship region too. The Nationalpark brand is seen as a strength as well as an opportunity within the SWOT analysis of the region and destination marketing could further improve and enhance this brand's publicity.

An energy-flagship region would address the opportunities of technological development towards energy efficiency and increased energy savings as well as the potential for sustainable resource use. This would enable the LEADER-region Nationalpark Hohe Tauern to design its tourism more environmentally friendly, where it is currently classified as a threat for the region. The participants agree that tourism is the driving force of the region's economy and that the majority of businesses are affected either directly or indirectly by it. Therefore, tourism ought to be part of the energy-flagship region to ensure a successful implementation. Another threat is seen in brain drain, which would be dealt with when developing an energy-flagship region, since it would offer a potential for broader job offers. Even though a high potential in the region in

social, environmental and economic terms was identified, it is still regarded as a weakness because of a lack in initiatives. Overall, an energy-flagship region would tackle several aspects that have been listed within the SWOT analysis, influence them positively and benefit the region's tourists and residents in monetary and non-monetary terms.

The participants are convinced that its development is important for the LEADER-region Nationalpark Hohe Tauern, but see a challenge in finding people that can take on the responsibilities of representing, organizing and developing the concept and activities within the energy-flagship region. The expert specifies that only by creating a small group of engaged and highly motivated stakeholders, can a suitable concept be designed and carried to the individual municipalities to be implemented. These stakeholders can also take on the role of motivators and initiators. Again, a major part is attributed to the involvement of the whole value chain and the public, because only when the public supports the project, can it be implemented successfully and a long-term perspective be achieved.

As has been explained in chapter 4.3.1, stakeholders can possess one or more of the following attributes: power, legitimacy and urgency. According to these three classifications and the results of the interviews, a stakeholder graph was drawn that represents the view of the interview participants about actors that are involved or affected by the development of an energy-flagship region within the LEADER-region Nationalpark Hohe Tauern (as can be seen in Figure 35, page 139).

The participants describe a large part of the actors as discretionary stakeholders, which only possess the attribute of legitimacy, but lack power and an urgent claim within an energy-flagship region. The key persons of the overall controlling and managing body of the flagship region do not have to actively engage with this group, but can choose to do so to influence their attitude towards the project in a positive way. When looking closely at the graph, it can be observed that the lower part of the stakeholders is written in grey. This is due to the fact that these particular five actors have been identified in chapter 4.3.1.2 as stakeholders of an energy-flagship region, but are not named by the participants in the interviews. However, and since they are still seen as worthy to include in the graph, the grey colour has been used to signal the author's contribution.

To go more into detail and be able to elaborate on the process of classifying the individual stakeholders, the results of the in-depth interviews have been analysed thoroughly. During the interviews, tourists are mentioned as important contributors to sustainability; however, the participants believe that once the region has implemented the concept and values of the energy-flag-

ship region, tourists will follow the lead and adapt to the new circumstances. Furthermore, attention is drawn to the fact that an energy-flagship region will attract a different target group of tourists and visitors as well.

The initial project team, Austrian Institute of Technology GmbH (AIT GmbH in the graph), Modul University Vienna and Mitplan GesmbH, that have introduced the regional stakeholders to the concept of the energy-flagship region, are categorized as stakeholders with the attribute legitimacy. These institutions and organizations are said to be external actors that have a legitimate claim, but lack in urgency and power without the support of the region.

Agricultural businesses, media and technology providers are perceived as actors that should be included in the development process of the energy-flagship region and kept informed about the progress, but are still only classified with legitimacy. One would assume that technology providers are an essential part per se, but neither the statements of the interview participants nor the fact that none of the contacted organizations agreed to take part in the interviews implies that this stakeholder group possesses power or urgency.

The Chamber of Commerce, Chamber of Labour and Chamber of Agriculture do not have the power or urgency to change anything within and influence the project as long as regulations are adhered to and therefore, only possess legitimacy according to the interview participants.

Turning now to the next category, investors are appointed to be dormant stakeholders that only have power, since they can impose their will within the region due to their ability to invest money and stimulate the economy through it. These stakeholders might not have a legitimate relationship or an urgent claim towards the energy-flagship region and might implement projects that are against its values solely because of their monetary power.

In the literature and during the interviews, it is observed that there is a strong competition from resorts and skiing areas in other regions, which would be further fuelled by the creation of an energy-flagship region within the LEADER-region Nationalpark Hohe Tauern. This rivalry might be irritating for the region, but would stay largely overlooked due to these stakeholders' lack in power and legitimacy. Therefore, this stakeholder group "Competitor skiing regions" is identified as demanding stakeholders, which only have an urgent claim.

The fourth category of stakeholders, dominant stakeholders, are perceived to have the power to influence the project and possess a legitimate claim which gives them a strong influence in the project. It is often mentioned in the in-depth interviews that a project has to be organized according to the bottom-up principle. Residents, as well as organizations and businesses, are seen as essential when developing an energy-flagship region, since their attitude towards the concept can either lead to success or to failure. The expert states too, that it would be a fatal

mistake to apply the concept top-down. The interview participants further indicate that the support of the provincial government, district authorities and politicians is needed to realize such big projects and that these parties have the power to prevent them. Other actors that are identified to possess power and legitimacy are cableway companies, the Ferienregion management as well as tourism organizations. Particularly, cableway companies are mentioned often as motivators and drivers of innovation.

Another stakeholder group that is identified refers to dependent stakeholders which should not be disregarded, since negligence could entail severe consequences. The interview participants emphasize on the importance to take future generations into account, since it is their concern to enable a liveable life to their grandchildren and great-grandchildren. To make this vision come true, the ecosystem, as well as the environment, have to be represented genuinely to enable sustainable development. Other stakeholders within this group are energy and mobility providers. Energy providers are seen as having an urgent and legitimate claim, but lack power. Since the contacted energy providers denied to be a part in the study to provide more insights on their position, the view of the interview participants has been accepted.

Turning the attention to the core of the stakeholder graph, shows which actors are found to be the main contributors to the energy-flagship region, since they have an urgent and legitimate claim as well as the power to pursue their will. The interview participants additionally state, that these actors have to work together closely and collaborate in order to develop an energy-flagship region. This role is attributed to the regional management Pinzgau, the individual municipalities of the LEADER-region Nationalpark Hohe Tauern, the whole tourism sector, flagship businesses and organizations, the Federal Ministry of Agriculture, Forestry, Environment and Water Management, two model regions for climate and energy, the LEADER management as well as the Nationalpark management Salzburg. The Federal Ministry of Agriculture, Forestry, Environment and Water Management are added to this category since the energy-flagship region is a federal funding programme giving this actor an urgent and legitimate claim to enhance sustainable development as well as the monetary power to impose its will. Particularly, the latter two actors, the LEADER management and the Nationalpark management, are perceived as important as the stakeholders suggest appointing the responsibilities of the overall controlling body to either of the two. This is a very surprising result, since on the one hand, the representative of the stakeholder group "Protection and conservation organization" clearly states to have a rather opposing attitude towards the development of an energy-flagship region and on the other hand, the LEADER management has been very hesitant and reluctant to contribute during the stakeholder workshops, described in chapter 4.1.1, and did not agree to take part in the interviews. Yet, the concept and values of an energy-flagship region would match the LEADER management goals that aim for increasing the use of renewable energy in addition to enhancing the qualification, innovation and cooperation within the region. The development of environmentally

friendly mobility, sustainable energy generation and the use of proactive measures to tackle climate change are some more common goals. The unwillingness to contribute to the development of an energy-flagship region clearly contradicts the values and objectives of the LEADER management. Thus, a dichotomy can be observed within the region on how the stakeholders see not only the LEADER management, but also the Nationalpark management and how these two perceive their actual roles.

Overall, the majority of the stakeholders are found to possess legitimacy, which is a positive sign, since no actor is identified as a dangerous stakeholder that has power and an urgent claim, making that group coercive.

Even though the majority of the stakeholders have a positive attitude towards the development of an energy-flagship region and perceive it as important, the commitment to contribute seems low. This becomes especially apparent during the analysis of the structured questions which reveal that a higher priority is attributed to the application of the individual components at the regional level than at the organizational one, thus putting the responsibilities within an energy-flagship region at the former rather than at the latter. However, during the in-depth interviews 10 of the 12 interviewees state that they are willing to take on additional responsibilities to assist in the development of an energy-flagship region, but a closer look divulged that the areas of contribution highly overlap with the jobs and functions of the individual interview participants. The seventh hypothesis displayed this issue earlier and the results show that the expectations have proven to be correct. This is already an indicator that the sixth hypothesis that states that the stakeholders are interested and willing to contribute to the creation of an energy-flagship region, does not apply to the LEADER-region Nationalpark Hohe Tauern. One disadvantage of an energy-flagship region, which might enhance the reluctance, is that its development and administration are time consuming and connected to high investments, as per the interview participants. The majority of the stakeholders already has more than one position and function and might encounter time constraints when being involved in the development of an energy-flagship region.

Having a positive attitude towards the creation of the flagship region, but at the same time demonstrating low commitment, makes the realization of the project difficult since, as has been realized above, the contribution of the regional stakeholders is needed to successfully implement the energy-flagship region and establish a long-term perspective that goes beyond the funding period. So far, the interviewed stakeholders agree that environmentally friendly mobility, awareness raising and education of the public as well as destination marketing and image are key parts. This can be seen as a common ground and is a good basis for the development of an energy-flagship region, for it not only includes an environmental aspect, but also a social and economic one.
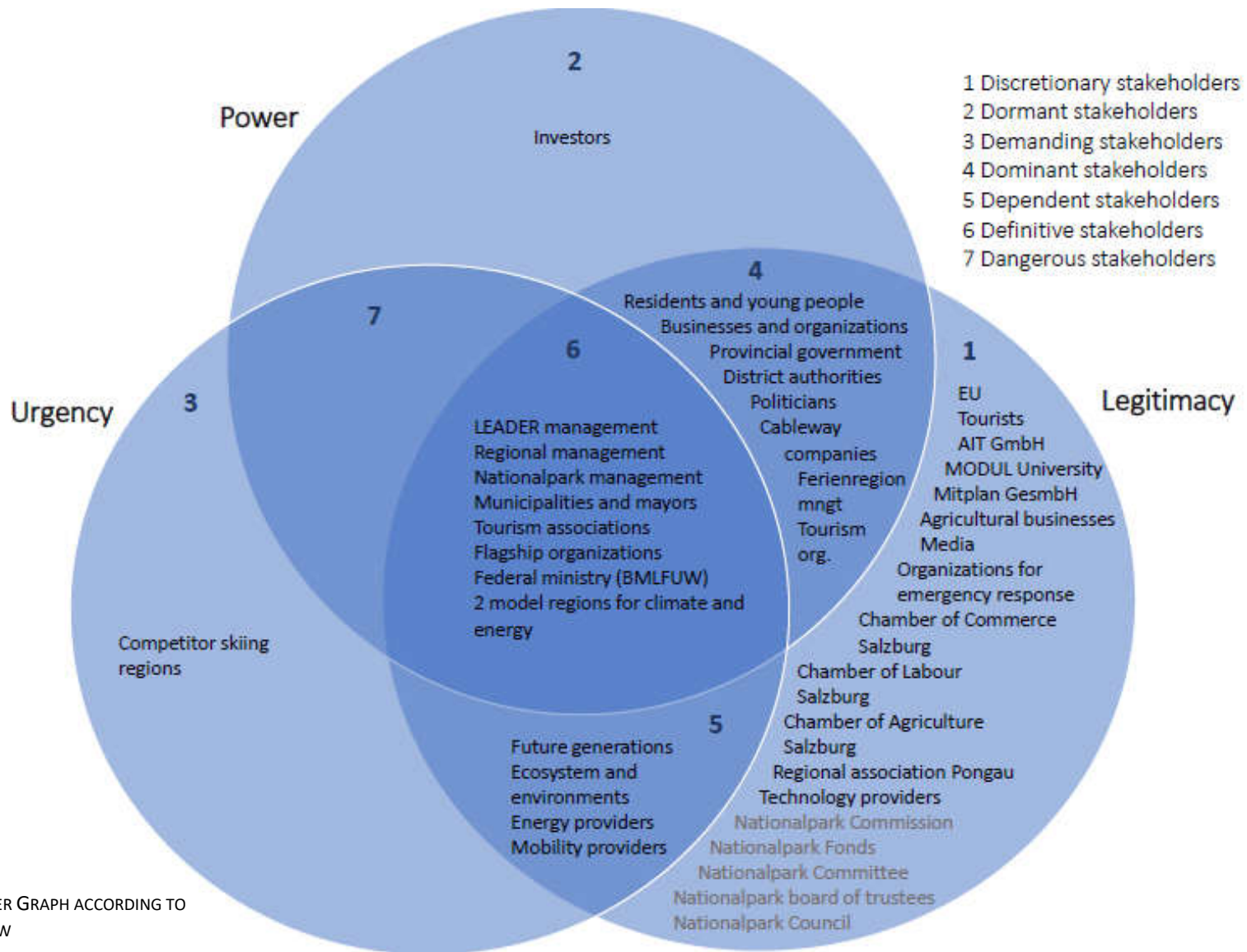
FIGURE 35: STAKEHOLDER GRAPH ACCORDING TO THE STAKEHOLDERS' VIEW

7   RECOMMENDATIONS

As already established above, the attitude towards the development of an energy-flagship region is positive and the interviews revealed three components that are a good basis for a concept that all the stakeholders agree upon. It was realized that creating an energy-flagship region that deals with environmentally friendly mobility, implements awareness raising and education measures and pursues an authentic destination marketing, would have a positive influence on some of the region's weaknesses and turn them into strengths, providing the region with a competitive advantage.

The other potential elements of an energy-flagship region show a broad variance in terms of importance, which reveals a conflict of interest among the stakeholder groups due to diverse motivations, points of view and internal agendas and is one of the challenges of multi-stakeholder participation. Kaner et al. (2007) correctly stated that "we can't change the fact that we are individuals with diverging points of view".

Including multiple stakeholder groups of the region in the brainstorming and development process for the concept of an energy-flagship region has benefits too, such as the increased the likelihood of a successful implementation. Biermann et al. (2007, p. 239) describe "multi-stakeholder partnerships as an innovative form of governance that addresses deficits of inter-state politics by bringing together key actors of civil society, governments and business". The interested parties have the chance to take part in personal meetings, workshops, online discussions and working groups and contribute in an inclusive and equitable setting to the project or issue in question (Adam et al., 2007). By involving a variety of stakeholder groups, different viewpoints are brought together, and knowledge and skills are shared among the participants, which allows a more comprehensive analysis as well as enhances the development of holistic approaches (Adam et al., 2007). Thus, multi-stakeholder partnerships are seen to provide the involved actors with a better understanding of alternative approaches and help to recognize the need for change (Kaner et al., 2007; Adam et al., 2007). Adam et al. (2007, p. 8) are convinced that "multi-stakeholder partnerships provide an important platform […] that promotes grassroots mobilisation and participation […] as it motivates both leaders and laggards". Every involved stakeholder should become an owner of the outcome and the responsibilities should be shared among the actors, including the willingness to develop and manage the project (Kaner et al., 2007; Adam et al., 2007). Only by achieving this and receiving the support of everyone can an agreement be made in a sustainable way (Kaner et al., 2007). Kaner et al. (2007) are certain that full participation, mutual understanding, inclusive solutions and shared responsibility will lead to stronger individuals, stronger groups and in the end to stronger agreements. As has already been mentioned above, involving a broad range of stakeholders entails challenges too such as competition

between stakeholder groups, conflicts of interest as well as unwillingness to take on additional responsibilities (Adam et al., 2007).

Some of these challenges are also observed in the course of the research as it is found that the areas of full participation as well as shared responsibility are lagging. Potential interview participants within the stakeholder groups "Energy providers" and "Technology providers" rejected to take part in the study. The LEADER management, which is seen as an essential actor within the region, has shown to be reluctant during the stakeholder workshops and also, has not been willing to participate in the interviews. Particularly, the latter and the energy providers would have been considered as the main contributors to the development of an energy-flagship region. As for the other area that has to be improved, shared responsibility: The interview participants perceive a higher importance in applying the measures and initiatives within an energy-flagship region at the regional level rather than the organizational one and thus, push away the responsibilities of contributing. The participants would only be willing to contribute in fields that can be integrated within their jobs. Therefore, it has been concluded that the overall commitment towards the creation of an energy-flagship region is low. Only if all stakeholders are committed and willing to be a part of the development and management process of the flagship region, can a long-term goal be set and the flagship region genuinely implemented. Hence, at this point, the development of an energy-flagship region is not recommended due to missing engaged and motivated contributors, which is an essential component in multi-stakeholder partnerships. Adam et al. (2007, p. 14) emphasize that a "multiple-stakeholder process has to ensure that all relevant stakeholders are included". Especially important is the involvement of key actors that "advocate for the common goals [...] is far more essential than the partnership itself", since it increases the positive attitude of all participants towards the process (Adam et al., 2007, p.15). Nonetheless, the participants have to perceive the common goal as legitimate and credible and believe in its benefits (Adam et al., 2007).

In order to enhance the commitment and make a development of an energy-flagship region possible, awareness raising measures have to be applied to trigger the need for change. For awareness raising campaigns to be effective, the underlying attitudes must be changed.

Zimbardo et al. (1991, p. 985) have defined attitudes as "an evaluative disposition toward some object based upon cognitions, affective reactions, behavioural intentions, and past behaviours [...] that can influence cognitions, affective responses, and future intentions and behaviours." Attitudes are, therefore, not directly observable, but influence the human's action and behaviour that can be observed (Simonson et al., 1996). Thus, and according to Vaughan et al. (2013), a change in behaviour can be triggered by a change in attitudes. To understand this process and derive strategies to change attitudes, the attention has to be directed towards the four previously mentioned components that form an attitude: affective responses, cognitions, behaviours and behavioural intentions (Zimbardo et al., 1991; Simonson et al. 1996). The affective re-

sponses involve sensations such as pleasure, anxiety or sadness (Simonson et al., 1996). Cognitions refer to the mental process and a person's knowledge, whereas the behavioural component describes the behaviour (Simonson et al., 1996). "Finally, the behavioural intention component involves the person's plans to perform in a certain way, even if sometimes these plans are never acted upon" (Simonson et al., 1996, p. 986).

To change the attitude, and subsequently the behaviour, of the regional stakeholders towards more commitment through awareness raising measures, the approach of the learning theories of attitude change is recommended.

Hovland et al. (1953) believe that a change in attitudes can be achieved if a new learning experience takes place. Persuasive communication can be an effective learning experience if a critical question is presented and the answer to it is provided at the same time (Simonson et al., 1996). The crucial stages that determine whether the attitude is changed refer to attention, comprehension and acceptance (Simonson et al., 1996). As can be seen in Figure 36, to accept the proposed message of a communication, the individual has to go through mental and sensational processes as well as rehearsals of the new and initial attitudinal responses (Hovland et al., 1953; Simonson et al., 1996). More specifically, "an individual must attend to and comprehend the communication before acceptance can occur. It is during the attending and comprehending phase that the individual has the opportunity to practice the recommended new opinion. Practice alone does not lead to acceptance, but when combined with incentives [monetary and non-monetary benefits] and recommendations imbedded in the communication, attitude change is likely" (Simonson et al., 1996, p. 990).
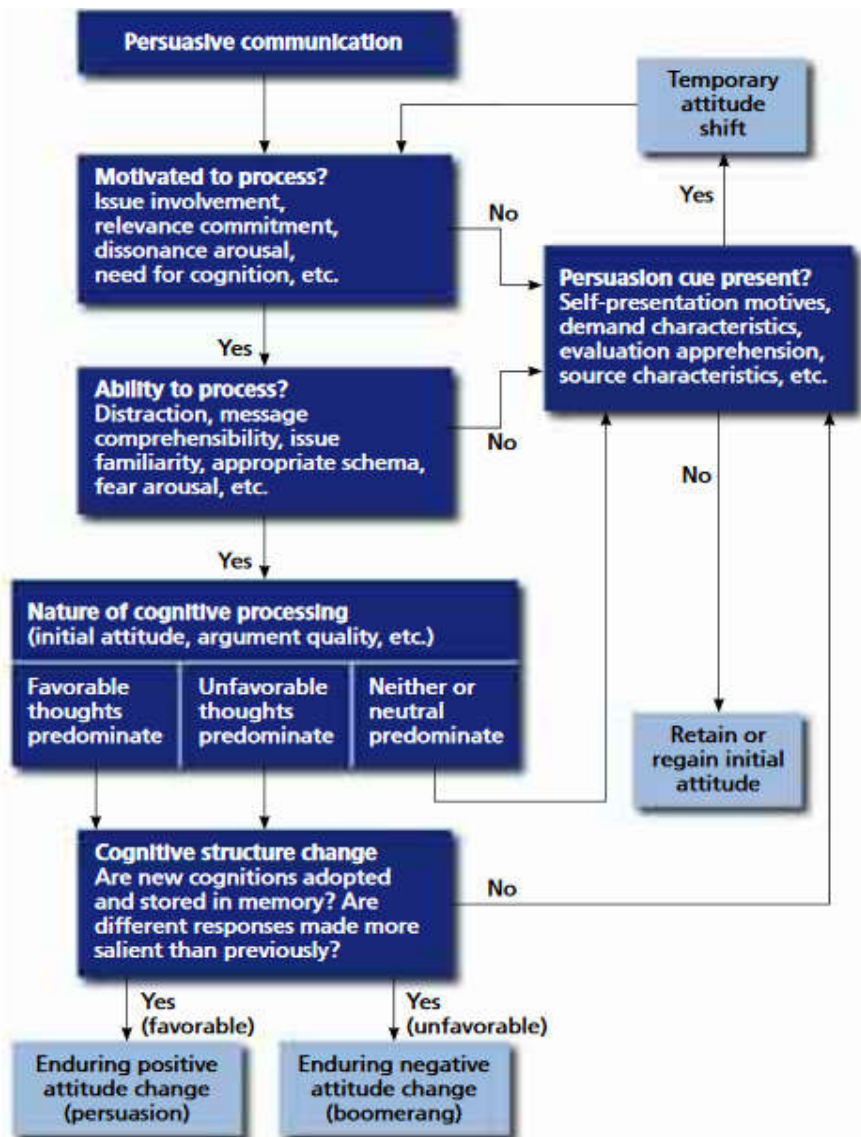
FIGURE 36: THE ELABORATION LIKELIHOOD MODEL OF PERSUASION (BELCH AND BELCH, 2003)

To enhance this process, the effectiveness of the message can be increased by carefully studying the three general variables that are involved in a communication (Hovland et al., 1953): the source (communicator), the message (communication) and the audience.

The communicator has to be chosen carefully such that the message influence is maximised (Belch and Belch, 2003, Hovland et al., 1953). Essential characteristics of the communicator are credibility, trustworthiness, attractiveness and likability, in addition to status. Experts, popular individuals and attractive people have been found more persuasive than others (Belch and Belch, 2003).

When designing the message, one has to consider the order of the arguments as well as whether to use one- or two-sided arguments (Belch and Belch, 2003, Hovland et al., 1953). Two-sided arguments can be used when the refutation is not too strong and the target audience is seen as intelligent (Belch and Belch, 2003, Hovland et al., 1953). However, more importantly is the type

of appeal that is employed (Belch and Belch, 2003, Hovland et al., 1953): logical arguments are most effective with cognitive based attitudes, whereas emotional arguments are used for affective ones. Furthermore, a positive atmosphere should be preserved, and in case negative and fear provoking topics are covered, concrete recommendations for action must be provided (Belch and Belch, 2003). In any way, the message should also be designed in a way to counteract pressure and should enhance a freedom to act (Belch and Belch, 2003). The final variable that must be evaluated, is the audience. Aspects such as persuasion degree, intelligence, self-esteem, personality as well as the position towards the issue have to be analysed and taken into account when designing a message to tailor it to the conditions (Belch and Belch, 2003).

Simonson et al. (1996), pp. 1009-1012) created six guidelines for designing a persuasive communication that aims for attitude change:

1. The audience is convinced easier and tend to have a positive reaction, when new and useful information is presented about a topic.
2. Attitude change is likely to occur when the message is realistic, stimulating and relevant to the audience.
3. Persuasive messages have a positive effect on the audience when the mediated situation is perceived as authentic and credible.
4. The audience is likely to react favourably to a message if they are involved actively, emotionally and cognitively.
5. "Audiences who experience purposeful emotional involvement or arousal during media-rich instructional situations are likely to change their attitudes in the direction advocated in the situation.
6. Learners who participate in situations where […] instructional situations are openly critiqued in an attitudinally appropriate way are likely to develop favourable attitudes toward the situations and toward the message" (Simonson et al., 1996, p. 1012).

7.1 Specific recommendations for the LEADER-region Nationalpark Hohe Tauern

When the awareness raising and education measures in the LEADER-region Nationalpark Hohe Tauern are designed according to these six principles, the commitment towards the development of an energy-flagship region can be increased. In addition, a regional supporter of the project must be found who is well-known within the region, credible, trustworthy and persuasive to help raise awareness and commitment. The message should not only include logical arguments, it should, furthermore, cater emotional aspects too, since it has been observed that the decisions for future development of the region are not only based on rational assumptions.

Josef Essl, who has been interviewed as an external expert, recommended additionally to use existing networks, such as Alliance in the Alps, to get insights about good-practice examples in

sustainable regional development and exchange knowledge. By doing so, awareness is raised subsequently and once the stakeholders from the LEADER-region Nationalpark Hohe Tauern see how sustainable measures and initiatives are implemented, the commitment might be increased as well.

The community network "Alliance in the Alps" consists of a variety of municipalities of seven Alpine states (Austria, Germany, Italy, France, Switzerland, Liechtenstein and Slovenia) and strives for sustainable development in the Alps, specifically in terms of an intact nature, a flourishing economy and social aspects, which concurs with what the LEADER-region Nationalpark Hohe Tauern is aiming for (Allianz in den Alpen, 2017). Additionally, the network advocates for knowledge and experience exchange beyond borders. The main goals are the development and protection of nature, environment and landscape, the creative design of municipalities as economic areas, strengthening the quality of life within the Alps as well as contributing to the implementation of the Alpine Convention (Allianz in den Alpen, 2017). The Alpine Convention is an international treaty of Alpine countries within the EU (including Austria) to promote a more sustainable development within the Alps (Allianz in den Alpen, 2017).

The LEADER-region Nationalpark Hohe Tauern could benefit from the experience and expertise in the area of project planning, implementation and financing from other municipalities as well as from the support with similar challenges, because mutual and unbureaucratic communication beyond borders is seen as an essential component of this network (Allianz in den Alpen, 2017). Symposia and workshops are regularly held to bring together interested stakeholders to exchange new approaches and methods to achieve sustainable development and fulfil its strive for innovation (Allianz in den Alpen, 2017). Allianz in den Alpen (2017), furthermore, attributes an importance to being involved in the political arenas and states that interest unions are represented at the national as well as transnational and European level to ensure that municipality and Alpine issues are adequately considered in the negotiations and policy processes.

The main action fields of Alliance in the Alps deal with the social, environmental and economic dimensions of sustainable development, which also correspond to the addressed topics within the interviews (Allianz in den Alpen, 2017):

- Quality of life in the Alps
- Natural protection and landscaping
- Social capacity for action
- Demographic transition
- Inclusion of the public and youth
- Integration
- Regional value creation and local supply
- Mobility and traffic
- Sustainable tourism

- Climate change and energy
- Living in sustainably built houses
- Regional planning
- Agriculture and food

To sum up, since the commitment to contribute has been rated as low, the development of an energy-flagship region is not recommended at this point of time. To begin with, awareness has to be raised among the regional stakeholders through carefully designed measures and initiatives. When pursuing this path and aiming for changing attitudes, the main message has to be adapted towards the target audience taking into account their position towards an energy-flagship region, their intelligence and their persuasion degree. Having a regional stakeholder, who is credible, trustworthy and well-known, as a supporter enhances the likelihood to change the attitudes of relevant actors towards increased commitment. Another possibility is to get familiar with the network Alliance in the Alps, which pursues the target of sustainable development in the Alps through cross-border collaboration and knowledge exchange in fields that would be also relevant to the LEADER-region Nationalpark Hohe Tauern.

8 CONCLUSION

The main aim of this study was to determine how stakeholders within the LEADER-region Nationalpark Hohe Tauern imagine a sustainable energy-flagship region and what they are willing to do to achieve it. The relevant regional stakeholders have been categorized into "Tourism organizations", "Technology providers", "Administration", "Energy providers", "Protection and conservation organization" and "Mobility providers".

The analysis of the in-depth interviews has revealed that three components have received great approval from all the stakeholders and must be a part of the energy-flagship region, according to stakeholders' view. These refer to environmentally friendly mobility, awareness raising and education and destination marketing and image. The other potential elements have shown a broad discrepancy in terms of importance, which reflects a conflict of interest that can occur in multi-stakeholder partnerships.

Even though the overall attitude towards an energy-flagship region is very positive and the concept is seen to be a great fit to the values of the Nationalpark Hohe Tauern, the willingness to contribute and the commitment barely go beyond responsibilities that can be included in the stakeholders' jobs and functions and has been rated as low. To make a multi-stakeholder partnership work, all relevant actors must be included in the process, but the contacted stakeholders within the groups "Energy providers" and "Technology providers" set a clear sign of their disinterest and unwillingness by not taking part in the interviews. Furthermore, the LEADER management, which is perceived as a key actor by the interview participants, refused to participate and has, thus, continued the reluctant attitude towards the project that has already been observed during the stakeholder workshops. Another actor that has been hesitant and rather opposing the project, but is seen as essential contributor by the interviewees, is the Nationalpark management, because they do not believe that the project will be implemented genuinely and taken seriously by the regional stakeholders. The participants further specified that the public might not be ready and that a long-term perspective for the regional development is missing. Therefore, projects usually only last for the funding period and then die.

Unless the commitment to participate in the development and management of the energy-flagship region is improved, its creation is not recommended. Nevertheless, with awareness raising measures and education initiatives, more stakeholders could become more motivated to contribute. For these measures and initiatives to be effective, the core message has to be tailored to the target group in terms of cognitive and affective aspects. The communicator of the message has to be chosen carefully too, to ensure a high persuasion degree.

The external expert, Josef Essl, recommended another possibility to enhance commitment: The community network "Alliance in the Alps" could provide the LEADER-region Nationalpark with good-practice examples and support the region with knowledge about issues that concern the

project development, implementation and financing. Knowledge exchange, as well as support of external experts that understand the characteristics and conditions of an Alpine region, might further reduce the barriers.

To sum up and answer the research question "How do potential stakeholders imagine a sustainable energy-flagship region and what are they willing to do to achieve it?", the stakeholders have agreed within the interviews on the three abovementioned components, which are a good basis for the creation of a concept for the energy-flagship region, yet until now, the commitment is too low to actually develop and implement an energy-flagship region successfully. However, with awareness raising and education measures, as well as knowledge exchange, this challenge might be overcome.

9 LIMITATIONS

Every research paper has to, a certain extent limitations, which the researcher should be aware of in order to deal with them properly.

When conducting a qualitative research, several authors (Boyce et al., 2006; Creswell, 2014; Kvale et al., 2009; Patton, 2002) see the lack of generalization due to a too small sample as the main limitation. Additionally, the results might be biased, since the sample cannot be selected at random (Boyce et al., 2006). Since the research design of this study is based on the stakeholder theory, the approach of the geographical footprint, use of media and past experience has been used to select the stakeholders. Furthermore, stakeholders that might have an interest in the project have been included. For a multi-stakeholder participation, the most relevant stakeholders have to be chosen. However, even though it was heavily relied on reliable media sources and prior experience within the region, a subjective judgment cannot be fully eliminated.

Another limitation refers to a lack of participants within the stakeholder groups "Energy providers" and "Technology providers". The point of view of these groups would have provided the researcher with additional beneficial information, but the disinterest and unwillingness to participate in the interviews can be considered as an additional observation of their attitude towards the project.

When conducting personal or telephone interviews, Malhotra et al. (2007) draws attention to the possibility that the interview participants answer in a socially desirable way rather than an honest one. The pressure for individuals within a community to be socially acceptable is very high; thus, the researcher has to look out for indicators for this phenomenon and question opinions through probing (Malhotra et al., 2007). Furthermore, this bias can be reduced by offering anonymity, creating a comfortable atmosphere as well as being empathic.

The final limitation refers to the potential for interviewer bias that might occur due to omitting questions, changing research questions during the interview, probes and language (Malhotra et. al., 2007; Boyce et. al., 2006).

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APPENDIX 1: INTERVIEW GUIDE

1. The LEADER-region Nationalpark Hohe Tauern is characterized by a strong tourism sector. Especially, winter tourism is booming. How would you define a sustainable energy-flagship region for your region? How do you imagine such a region in areas of sustainability, energy and mobility?

2. Please assess the following components according to importance for your industry sector (Traffic light system: Red = not important, Yellow = neutral, Green = important):

Potential components of an energy-flagship region	🟥	🟨	🟩
Use of renewable energy			
Increased energy efficiency			
Reduced energy consumption			
Cooperations within the region			
Tourism has to be the driving force of the economy			
Diverse tourism offer			
Support and protection of nature			
Environmentally friendly mobility			
Reduced car use			
Sustainable initiatives for hotels			
Authentic and clear communication within and outside the region (destination marketing)			
Awareness raising and education of the public			
Support and protection of culture and cultural heritage			
Modification of tourist behaviour			
Environmentally friendly winter technology			

TABLE 7: POTENTIAL COMPONENTS OF AN ENERGY-FLAGSHIP REGION

3. Are there other components or areas that have not been listed, but would be important for you?

4. In which areas do projects and initiatives already exist…

4a. … at the organizational level?

4b. … at the regional level?

5. In which areas are they lagging behind…

5a. … … at the organizational level?

5b. … at the regional level?

6. Please assess the following statements (1: I fully agree, 2: I agree, 3: I rather agree, 4: I rather not agree, 5: I do not agree, 6: no answer):

Statements about an energy-flagship region	1	2	3	4	5	NA
Renewable energy:						
The use of renewable energy is important for my business/organisation, because I want to become a sustainable flagship business/organisation.						
The use of renewable energy is important in public areas (public buildings, social facilities, etc.), if the development of an energy-flagship region is pursued.						
There are already plans for the use of renewable energy within my business/organisation that will be implemented within the next 3 years.						
I support the use of renewable energy at the regional level.						
I support the use of renewable energy at the organizational level.						
I would like to participate in the area "use of renewable energy" during the development of an energy-flagship region.						
An important pilot project of the energy-flagship region should deal with the use of renewable energy.						

Increased energy efficiency:	1	2	3	4	5	NA
Increased energy efficiency is important for my business/organisation, because I want to become a sustainable flagship business/organisation.						
Increased energy efficiency is important in public areas (public buildings, social facilities, etc.), if the development of an energy-flagship region is pursued.						
My business/organization is already equipped according to the latest energy efficiency guidelines.						
My business/organisation has already plans to increase the energy efficiency.						
I support increased energy efficiency at the regional level.						
I support increased energy efficiency at the organizational level.						
I would like to participate in the area "increased energy efficiency" during the development of an energy-flagship region.						
An important pilot project of the energy-flagship region should deal with increased energy efficiency.						

Reduced energy use:	1	2	3	4	5	NA
Reduced energy use is important for my business/organisation, because I want to become a sustainable flagship business/organisation.						
Reduced energy use is important in public areas (public buildings, social facilities, etc.), if the development of an energy-flagship region is pursued.						
My business/organisation has already plans to reduce the energy use.						
I support reducing the energy use at the regional level.						
I support reducing the energy use at the organizational level.						
An important pilot project of the energy-flagship region should deal with reducing the energy use.						

Cooperations within the region:	1	2	3	4	5	kA
I see cooperations within the region between different sectors as an essential component of a successful energy-flagship region.						
There are already existing cooperations at the regional level to become more sustainable.						
According to my knowledge, there are barely any cooperations between sectors to increase sustainability.						
There are already cooperations at the organisational level to operate more sustainably.						
My business/organisation cooperates with other businesses/organisations from different economic sectors to become more sustainable.						
I like to establish contacts to enable cooperations.						
As part of the development process of an energy-flagship region, I would assist in establishing cooperations.						

Tourism:	1	2	3	4	5	NA
An essential driving force of the economy is the tourism in the LEADER-region Nationalpark Hohe Tauern.						
My business/organisation benefits directly from tourism.						
My business/organisation benefits indirectly from tourism.						
Tourism has to be included in the concept to create a successful energy-flagship region.						
Even tourism organizations and related businesses should be designed more sustainably as part of the energy-flagship region.						
If you are a tourism business/organisation: My business/organisation has already implemented measures to make the business/organisation more environmentally friendly.						
If you are a tourism business/organisation: My business/organisation is interested in obtaining a sustainability certificate (Austrian Eco-label, EMAS, ISO 14001) for tourism businesses/organisations.						
A diverse tourism offer is essential for an energy-flagship region.						
The LEADER-region Nationalpark Hohe Tauern already has a very diverse tourism offer.						

Support and protection of nature:	1	2	3	4	5	NA
The support and protection of nature is important for my business/organisation, because I want to become a sustainable flagship business/organisation.						
The use of renewable energy is important at the regional level, if the development of an energy-flagship region is pursued.						
I support the protection of nature at the regional level.						
I support the protection of nature at the organisational level.						
I would like to participate in the area "support and protection of nature" during the development of an energy-flagship region.						
An important pilot project of the energy-flagship region should deal with the support and protection of nature.						

Environmentally friendly mobility:	1	2	3	4	5	NA
Environmentally friendly mobility is important for my business/organisation, because I want to become a sustainable flagship business/organisation.						
Increased energy efficiency is important in public areas (public transportation systems, business cars, shuttle busses, etc.), if the development of an energy-flagship region is pursued.						

There are already plans concerning environmentally friendly mobility within my business/organisation that should be implemented.						
I support environmentally friendly mobility at the regional level.						
I support environmentally friendly mobility at the organizational level.						
I would like to participate in the area "environmentally friendly mobility" during the development of an energy-flagship region.						
An important pilot project of the energy-flagship region should deal with environmentally friendly mobility.						

Destination marketing and Image:	1	2	3	4	5	NA
Authentic and clear communication within the region is an essential component of a successful energy-flagship region.						
Authentic and clear communication outside the region is an essential component of a successful energy-flagship region.						
The image of an energy-flagship region has a positive influence on the region.						
The image of an energy-flagship region has a positive influence on my business/organisation.						

Awareness raising and education of the public:	1	2	3	4	5	NA
For an energy-flagship region, awareness raising and education of the public on the topic sustainability is essential to positively modify their behaviour.						
I would participate at information events as a representative of my business/organisation to show how sustainable initiatives and aspects can be implemented in real world businesses.						
I support awareness raising and education of the public on the topic of sustainability at the regional level.						
I support awareness raising and education of the public on the topic of sustainability at the organisational level.						
I am willing to be actively involved in education and information events for the public to the topic of sustainability.						

Modification of tourist behaviour:	1	2	3	4	5	NA
The modification of tourist behaviour towards more sustainability is an essential component of a successful energy-flagship region.						
My business/organisation is involved in sustainably modifying tourist behaviour, because I want to become a sustainable flagship business/organisation.						
My business/organisation would assist in sustainably modifying tourist behaviour in an energy-flagship region.						
I support the modification of tourist behaviour at the regional level through marketing and awareness raising measures.						
I support the modification of tourist behaviour at the organisational level through marketing and awareness raising measures.						

Environmentally friendly winter technology:	1	2	3	4	5	NA
To create an energy-flagship region, it is essential to include winter technology too.						
The use of environmentally friendly winter technology is for my business/organisation very important, since I want to become a sustainable flagship business/organisation.						
There are already plans for the implementation of environmentally winter technology within my business/organisation that will be implemented within the next 3 years.						
Sustainable energy production and electric mobility are essential components of winter technology.						

I support the use of environmentally friendly winter technology at the regional level.						
I support the use of environmentally friendly winter technology at the organisational level.						
I would like to actively contribute in the area of "environmentally friendly winter technology" to the development of an energy-flagship region.						

General statements about an energy-flagship region:	1	2	3	4	5	NA
I have a positive attitude towards the development of an energy-flagship region.						
I would actively engage at the regional level in the development of an energy-flagship region.						
I would actively engage at the organizational level in the development of an energy-flagship region.						
I would like to be actively involved in the creation of the overall concept during the development of an energy-flagship region.						
I believe that the energy-flagship region offers an additional value for my business/organisation.						

TABLE 8: STATEMENTS ABOUT AN ENERGY-FLAGSHIP REGION IN THE INTERVIEW GUIDE

7. Which existing conditions (Attitude and willingness of the public, willingness of the most important actors, financing options, compliance with regional marketing and vision of the region, etc.) would make the LEADER-region Nationalpark Hohe Tauern suitable for an energy-flagship region?

8. Which existing conditions (Attitude and willingness of the public, willingness of the most important actors, financing options, compliance with regional marketing and vision of the region, etc.) would make the LEADER-region Nationalpark Hohe Tauern not suitable for an energy-flagship region?

9. Which benefits does an energy-flagship region have…

9a. … for your business/organisation?

9b. … for the region?

9c. … for the public?

10. Which disadvantages does an energy-flagship region have…

10a. … for your business/organisation?

10b. … for the region?

10c. … for the public?

11. To develop an energy-flagship region, the support of regional stakeholders is important. Which stakeholders would have to work together in your opinion?

12. In which areas (political, implementation, development area etc.) should these stakeholders be involved? How do you perceive their role?

13. How do you perceive the role of your stakeholder group? And what can your stakeholder group contribute to the development of an energy-flagship region?

14. Are you already in a position or do you already perform duties that are essential and beneficial for the development of an energy-flagship region?

14a. Can you imagine taking on additional duties and responsibilities to contribute to the development of an energy-flagship region?

14b. Which additional value does this duty and responsibility provide your business/company with?

15. In which areas and decisions would you like to be involved?

16. Are there already existing cooperations between regions and stakeholder groups and how do these cooperations look like?

16a. … at the organizational level?

16b. … … at the regional level?

17. How can the respective projects and initiatives be coordinated, such that the overview is not lost?

18. These projects are connected to investments. Who could finance these projects?

19. What are you willing to do to make the energy-flagship region come true?

APPENDIX 2: ADDITIONAL QUESTIONNAIRE FOR SELF-COMPLETION

Please assess the following statements (1: I fully agree, 2: I agree, 3: I rather agree, 4: I rather not agree, 5: I do not agree, 6: no answer):

Statements about an energy-flagship region	1	2	3	4	5	NA
Renewable energy:						
Projects concerning renewable energy have already been implemented during the past three years in my business/organisation.						
Increasing the market share of photovoltaic plants in the region is an important step towards the development of an energy-flagship region.						
Increasing the market share of wind energy in the region is an important step towards the development of an energy-flagship region.						
Increasing the market share of hydropower in the region is an important step towards the development of an energy-flagship region.						
Increasing the market share of bioenergy in the region is an important step towards the development of an energy-flagship region.						
Increasing the market share of geothermal energy in the region is an important step towards the development of an energy-flagship region.						
The use of renewable energy should be put increasingly on the regional political agenda.						
Personally, I have already set specific actions privately to use renewable energy.						

Increased energy efficiency:	1	2	3	4	5	NA
Architects, engineers and agents of the housing sector should be specifically trained in energy efficiency to comply to the latest requirements.						
Personally, I have already set specific actions privately to increase the energy efficiency.						

Reduced energy use:	1	2	3	4	5	NA
My business/organisation has already implemented measures to reduce the energy use.						
Personally, I have already set specific actions privately to reduce the energy use.						

Cooperations within the region:	1	2	3	4	5	NA
Cooperations between different sectors should be put increasingly on the regional political agenda to facilitate the development of an energy-flagship region.						
The existing cooperations at the regional level could be further extended.						
The existing cooperations at the organizational level could be further extended.						

Tourism:	1	2	3	4	5	NA
Only when tourism is part of the energy-flagship region can the behaviour of tourists be positively modified towards sustainability.						
Making tourism more sustainable has a measurable positive impact on the environment.						
The tourism in the region should be directed towards and changed into soft tourism.						

It is essential for an energy-flagship region that tourism respects and protects natural and cultural heritage.						
It is essential that especially protected zones in the national park stay untouched from tourism.						
A monitoring system should be introduced for hotels to measure and record the energy consumption.						
A monitoring system should be introduced for hotels to measure and record the resource use.						
Hotels and other accommodations should communicate clearly that sustainability plays an important role in its business.						
Hotels should focus on regionality (regional products, partnerships with regional farmers, etc.).						
To remove pressure off the nature, it is essential to have a diverse tourism offer.						
To reduce seasonality, it is essential to have a diverse tourism offer around the year.						
If you are a tourism business/organisation: My business/organisation has already implemented a monitoring system to measure the energy consumption.						
If you are a tourism business/organisation: My business has already implemented a monitoring system to measure the resource use.						

Support and protection of nature:	1	2	3	4	5	NA
An essential part of an energy-flagship region is the support and protection of nature.						
The support and protection of nature should be put increasingly on the regional political agenda.						
Personally, I have already set specific actions privately to support and protect the nature.						

Environmentally friendly mobility:	1	2	3	4	5	NA
Projects concerning environmentally friendly mobility have already been implemented during the past three years in my business/organisation.						
Personally, I have already set specific actions privately to use environmentally friendly mobility (Electric cars, use of public transportation system, carpooling).						
Environmentally friendly mobility should be put increasingly on the regional political agenda.						
Electric cars are environmentally friendly only if the electricity comes from renewable energy sources.						
When talking about electric cars, the use of renewable energy sources is inseparably connected to it.						
The public transportation system has to be extended in the region to reduce individual traffic by cars.						
Projects in the area of environmentally friendly mobility should contribute to reduce the use of cars of residents and tourists.						
Electric mobility is an important aspect of an energy-flagship region.						

Destination marketing and image:	1	2	3	4	5	NA
The energy-flagship region has a positive influence on the quality of life of the residents.						
The image of the energy-flagship region would increase tourist numbers.						
The image of the energy-flagship region would be visible far beyond borders (even internationally).						

Awareness raising and education of the public:	1	2	3	4	5	NA
Only if the public lives the values of an energy-flagship region can the flagship region be implemented successfully.						
Awareness raising and education of the public on topics such as sustainability should be put increasingly on the regional political agenda.						
Personally, I attend further trainings (seminars, workshops, information events, etc.) to get to know about new ways of how to operate more sustainably in order to become a flagship business/organisation.						

Modification of tourist behaviour:	1	2	3	4	5	NA
Only through the support of tourists can an energy-region be implemented successfully in touristic regions.						

Environmentally friendly winter technology:	1	2	3	4	5	NA
Projects concerning environmentally friendly winter technology have already been implemented during the past three years in my business/organisation.						
If you are a winter technology business/organisation: My business/organisation is interested in a sustainable certification for winter technology (cableways, slope preparation, etc.).						
The use of environmentally friendly winter technology should be put increasingly on the regional political agenda.						
An important pilot project of the energy-flagship region should deal with environmentally friendly winter technology.						
Winter technology providers should communicate clearly, that sustainability plays an important role in the business/organisation.						
To protect the sensitive nature of the national park, further skiing areas that are created through merging of skiing regions should not be exploited.						

Support and protection of culture and cultural heritage:	1	2	3	4	5	NA
An essential part of an energy-flagship region is the support and protection of culture and cultural heritage.						
The support and protection of culture and cultural heritage is important for my business/organisation, because I want to become a sustainable flagship business/organisation.						
The support and protection of culture and cultural heritage is important at the regional level, if the development of an energy-flagship region is pursued.						
The support and protection of culture and cultural heritage should be put increasingly on the regional political agenda.						
I support the protection of culture and cultural heritage at the regional level.						
I support the protection of culture and cultural heritage at the organisational level.						
I would like to participate in the area "support and protection of culture and cultural heritage" during the development of an energy-flagship region.						
An important pilot project of the energy-flagship region should deal with the support and protection of culture and cultural heritage.						

General statements about an energy-flagship region:	1	2	3	4	5	NA
I have a positive attitude towards an energy-flagship region.						
I am against the development of an energy-flagship region.						
The development of an energy-flagship region does not affect me.						

TABLE 9: STATEMENTS ABOUT AN ENERGY-FLAGSHIP REGION IN THE ADDITIONAL QUESTIONNAIRE FOR SELF-COMPLETION