



Potential Effects of Proposed Power Plants on Tourism in Skagafjörður, Iceland



April 2016

Authors: Georgette Leah Burns and Laufey Haraldsdóttir

Apríl 2016 © Georgette Leah Burns and Laufey Haraldsdóttir

Publisher: Ferðamáladeild Háskólans á Hólum

The cover picture is of Austurdalur. Credit: Viking Rafting

Print: Háskólaprent

ISBN: 978-9935-9316-0-3

Table of Contents

List of Tables and Figuresiv
List of Photographsv
1.0 Introduction and Background1
2.0 Methods
2.1 The Questionnaire
2.2 The Interviews
3.0 Results
3.1 Results from the Questionnaires7
3.2 Results from the Interviews
4.0 Conclusion
5.0 Acknowledgements
6.0 Bibliography
7.0 Appendix



Photograph 2: Horse riding in Austurdalur. Credit: Evelyn Ýr Kuhne

List of Tables and Figures

Table 1: Origin of questionnaire data – business type and language
Figure 1: Distribution of gender7
Figure 2: Age of respondents
Figure 3: Nationality of respondents
Figure 4: Location of overnight stays
Figure 5: Travel companions
Figure 6: Mode of transport9
Figure 7: Occupation of respondents
Figure 8: How descriptive do you find the following words for this area?
Figure 9: Satisfaction with nature and stay in the area12
Figure 10: What did you do/plan to do during your stay?
Figure 11: Length of stay (days)13
Figure 12: Prior visitation
Figure 13: Number of visits14
Figure 14: Desirability of road improvement15
Figure 15: Important factors for travellers in the area15
Figure 16: Importance of wilderness16
Figure 17: Do structures affect wilderness experience?
Figure 18: Influence of infrastructure on perceptions of wilderness
Figure 19: Effect of power plants and infrastructure on decision to visit
Figure 20: Attitudes to power plant types and locations
Figure 21: Importance of the region for rest and escape from daily life
Figure 22: Opinions about structures and facilities in the area

List of Photographs

Photograph 1: Austurdalur. Credit: Viking Raftingi
Photograph 2: Horse riding in Austurdalur. Credit: Evelyn Ýr Kuhneiii
Photograph 3: Stone wall paddock at Ábær, Austurdalur. Credit: Evelyn Ýr Kuhnev
Photograph 4: Convergence of East and West Glacial Rivers, Austurdalur. Credit: Viking Rafting
2
Photograph 5: Austurdalur. Credit: Evelyn Ýr Kuhne6
Photograph 6: Rafting and Kayaking in Austurdalur. Credit: Viking Rafting22
Photograph 7: Hikers crossing Fossá, Austurdalur. Credit: Bjarni Maronsson24
Photograph 8: Horse riding tour in Merkigil, Austurdalur. Credit: Bjarni Maronsson28
Photograph 9: East Glacial River crossing, Austurdalur. Credit: Gísli Rúnar Konráðsson
Photograph 10: East Glacial River and Hörkná. Picture taken from Hörknármúli, Austurdalur.
Credit: Gísli Rúnar Konráðsson
Photograph 11: Hut in Austurdalur. Credit: Viking Rafting
Photograph 12: Fossá in Austurdalur. Credit: Gísli Rúnar Konráðsson



Photograph 3: Stone wall paddock at Ábær, Austurdalur. Credit: Evelyn Ýr Kuhne

1.0 Introduction and Background

The report informs part of the third phase of the Icelandic government's project called The Master Plan for Nature Protection and Energy Utilization. The government project started in 1999, led by the Ministry of Industry, Energy and Tourism in co-operation with the Ministry for the Environment. It was initially called The Master Plan for Geothermal and Hydropower Development. Phase 1 of the project ran from 1999 to 2003 and phase 2 from 2004 to 2010 (Sæþórsdóttir and Ólafsson 2010a: 334).

In this third phase, The National Energy Authority (Orkustofnun) introduced 83 options for generating power in Iceland. The steering committee for the Master Plan prioritized evaluation and ranking of 26 options. Two of the 26 are wind turbines and the remaining 24 are either hydro or geothermal power plants (Verkefnisstjórn 3. áfanga, 2016).

Both tourism and power generation are very important for the Icelandic economy. As Iceland increasingly engages with power intensive industry, such as alumina smelters, the demand for electricity grows. Foreign tourist numbers are also rapidly increasing in Iceland (Óladóttir 2015) and the natural features exploited for power generation are also often the features the tourists come to see. The value of natural places as sites for recreation for Icelanders is also important.

For over forty years the potential for the generation of hydroelectric power from the Austari (east) and Vestari (west) Jökulsá rivers in Skagafjörður has been investigated (Morgunblaðið 1975). The earliest proposal included construction of a power plant at Villinganes, north of where the east and west glacial rivers converge (Morgunblaðið 1975, Photograph 4). The potential impacts of this plant on tourism in the area were reported on by Rögnvaldsson in 2000. Currently, three proposals, at two locations in Austurdalur (Villinganes and Skatastaðir), are under consideration in the third phase of the Master Plan:

- 1. Villinganes Power Plant (R3108A Villinganesvirkjun)
- 2. Skatastaðir Power Plant C (R3107C Skatastaðavirkjun C)
- 3. Skatastaðir Power Plant D (Villinganes + Plant C) (R3107D Skatastaðavirkjun D)

The tourism sector in Skagafjörður is developing rapidly and the value of tourism in the region is high. A study by Sæþórsdóttir and Ólafsson (2010a) gave Skagafjarðardalir a tourism value of 7.80 out of 10, behind top ranking Jökulsárgljúfur (9.60) and ahead of lowest ranking Auðkúluheiði (4.52). The Icelandic Tourist Board reports an approximately 20% annual increase in number of foreign visitors entering the country over the last five years (Óladóttir 2015) and

records from tourism businesses in Skagafjörður show an increase in visitor numbers during that time (Byggðasafn Skagfirðinga 2010; Byggðasafn Skagfirðinga 2015). Forty one tourism businesses were registered in Skagafjörður in 2012 (Ferðamálastofa 2012) and by 2015 this had more than doubled to 99 (Arinbjarnarson 2015). In addition, all of the tourism operators interviewed in this study expressed a certainty of increased number of tourists both at their business and in the area.

The region in which the power plants are proposed is important for different types of tourism activities; including rafting, horse riding, hiking and jeep tours. Half day rafting tours currently make use of both the East and West rivers, with longer (three day) tours starting higher up the valley (Austurdalur) in the East River. Road connection to Sprengisandsleið is through Vesturdalur and to Kjalvegur is through Mælifellsdalur and Gilhagadalur. Varmahlíð is the town closest to the proposal sites.

One hydroelectric power station currently exists on the north western edge of the highlands near the end of the Kjalvegur Mountain Road in the Blöndudalur Valley, 40km by road from Varmahlíð. Blönduvirkjun commenced operation in 1991 and includes an underground station, a 56km² reservoir, dams and power lines.

The aim of this research is to understand the potential impacts of the three power plants, Villinganes Power Plant, Skatastaðir Power Plant C and Skatastaðir Power Plant D, on tourism and recreation in the region. To do this we investigated what type of tourism exists in the area, why travellers visit the area, and the attitudes of travellers and tourism operators toward the power plant proposals.

The project was funded by the Icelandic Ministry for the Environment and Natural Resources and conducted by researchers from the Department of Rural Tourism at Hólar University College as part of a wider project managed by the University of Iceland.



Photograph 4: Convergence of East and West Glacial Rivers, Austurdalur. Credit: Viking Rafting

2.0 Methods

Data were collected during the second half of 2015 through questionnaires with tourists and interviews with tour operators. This provided information about the status of tourism in the potentially affected area and, importantly, what factors attract tourists to the region.

As researchers began data collection for this study, news about local municipality leaders signing a declaration of intent and a cooperation agreement for an alumina smelter in Skagaströnd (at Hafursstaðir in Skagabyggð) aired on national television and radio (Arnarsdóttir 2015). The first four interviews were conducted in the three days before this announcement, and three on the day after it. Distribution of questionnaires also commenced the day after. Researchers did not raise the topic of the smelter in the interviews or when discussing the three power plant proposals relevant to this study with questionnaire or interview respondents. However, the timing of this announcement and our study commencing was considered by some informants to be more than a coincidence. Consequently, we lost the trust of being neutral researchers in the eyes of some informants. This no doubt influenced our results and how much some people were willing to tell us, but is something over which we had no control.

2.1 The questionnaire

The questionnaire contained 26 questions and was available for completion in four languages: Icelandic (Appendix A), English (Appendix B), French (Appendix C) and German (Appendix D). Questionnaires were distributed during July 2015 at locations in Skagafjörður near the proposed power plant sites and also at local tourism businesses. Simultaneous, a similar questionnaire was distributed at five other regions in Iceland during the summer of 2015. The findings from the other regions are not reported on here. The locations in Skagafjörður were (n = the number of respondents at each site):

- A hotel in Varmahlíð (n24)
- The N1 in Varmahlíð (n2)
- A mixed activity (mainly horse riding) tourism business 1 km south of Varmahlíð (n8)
- A horse riding business 5 km north of Varmahlíð (n12)
- A mixed activity (mainly rafting) tourism business 11 km south of Varmahlíð (n36)
- A guesthouse 11 km south of Varmahlíð (n16)
- A camping ground 11 km south of Varmahlíð (n8)
- A rafting business 15 km south of Varmahlíð (n70)

- ➤ A horse riding business 20 km south of Varmahlíð (n=33)
- > At Hildarsel hut in Austurdalur (n=17)

Many of these locations were places travellers returned to after taking part in activities in the region including rafting, horse riding, hiking and angling trips. 223 valid responses were collected.

The researchers explained the purpose of the study to the respondents. This included showing respondents a map of the area (Appendix E and F), with either Icelandic or English text, and explaining details of the three power plant proposals. The researchers stayed with the respondents while the questionnaire was completed and collected it immediately afterwards.

Table 1, below, lists the six business types included in the questionnaire data collection, and the number collected in each of the four language choices. The largest number of responses was gathered from visitors at rafting (31.4%) and horse riding (23.8%) businesses. Guests at accommodation facilities (20.2%) and hiking in the area (7.6%) were also surveyed. English was the most common language chosen to fill out the questionnaire (44.8%), followed by German (31.4%), Icelandic (19.3%) and French (4.5%).

	Icelandic	English	French	German	Total
Store (N1)	2				2
Accommodation (Hotel/Guesthouse/Camp ground)	12	12	1	20	45
Rafting business	6	48	4	12	70
Horse riding businesses		16		37	53
Mixed tourism business (includes accommodation, rafting, angling but not horse riding)	6	24	5	1	36
Hikers at a hut in Austurdalur	17				17
Total	43	100	10	70	223

Table 1: Origin of questionnaire data – business type and language

When considering these results it is important to note that only 17 of the 223 questionnaires were completed at a site where the power stations or reservoirs would be constructed (a hut in Austurdalur). Visitor numbers to the large inland area in which the three proposals are situated are widely dispersed, compared with the concentration of visitors found in more well-known tourist destination in the south of Iceland for example. This is in part due to limited accessibility (which is an attraction in itself, as indicated in the results below).

An exception to this is the Laugarfell mountain cabins beside the potential Bugslón reservoir (see maps in Appendix E and F) that receive visitors traveling by jeeps and bikes, but also hikers and horse riders, and will be affected by the reservoir. Data from visitors at these cabins would have been a useful addition to the report, but to collect this was beyond the scope of the project budget.

Having researchers wait at sites in Austurdalur for visitors to arrive is unlikely to have provided a large enough questionnaire response rate in the time frame available for this method of data collection. Instead, the decision was made to target visitors who had been into the areas (such as those on three day rafting tours or long horse riding tours) as much as possible.

Consequently, most of the respondents had been into Austurdalur (approximately 80%). For those who hadn't, such as those surveyed at a hotel in Varmahlið, their opinions where then based on information provided by the researchers about the power plant projects and not based on any first hand experience of the areas which would be affected by the power plants. This does not diminish the validity of the responses. Knowing opinions of these visitors and whether the power plants would influence their decision to visit the wider area is very relevant to the study.

Results were compiled using version 22 of the IBM Statistical Package for the Social Sciences (SPSS). Figures were made using Microsoft Excel for Mac 2011 version 14.6.0.

Although 223 valid questionnaires were collected, on a small number of occasions the respondent did not answer all 26 questions. Therefore, the percentages presented in these results are based on the number of respondents who completed each of the individual questions.

2.2 The Interviews

Interviews with 20 tourism operators were conducted between July and November 2015. Interviewees were purposefully chosen. They included operators with businesses closest to the proposed power plant sites, those expected to be most affected (such as rafting, hiking and horse tour operators) as well as other prominent businesses in the Skagafjörður region.

Consequently, 14 of the 20 tourism operators run their businesses, or organize tours near the rivers or the proposed sites. Of the remaining six operators, three run their businesses a short distance north of Varmahlíð and three are based further north in Skagafjörður.

An interview schedule was designed before the interviewing commenced. It was used as a guide to ensure all interviewees were asked the same questions (Appendix G and H). For each interview, the interviewer travelled to the business of the tourism operator at a day and time that was convenient to them. The interviewees were given a letter of consent (Appendix I and J), which they signed before the interview took place. The interviews were recorded on a mobile phone and on a recorder, and then transcribed.

Five of the interviews were conducted in English, one was conducted in both English and Icelandic and the remaining 14 were conducted in Icelandic. The interview texts were transcribed in the language in which they were recorded and the Icelandic texts were then translated into English for the purpose of comparative analysis.



Photograph 5: Austurdalur. Credit: Evelyn Ýr Kuhne

3.0 Results

In this section, results from first the questionnaires and then the interviews are presented and discussed.

3.1 Results from the Questionnaires

Of the 223 respondents, 58% were female and 42% were male (Figure 1). The slightly higher percentage of females may be attributed to horse riding being a major attraction in the area, and the majority of travellers who go horse riding are female.



Figure 1: Distribution of gender

Ages of respondents ranged from 14 to 81. The age bracket 25 to 40 contained the most responses (33%) followed by over 55 (27%) and 41-55 (23%) (Figure 2). The average age was 42 and the median 41, with a standard deviation of 17.



Figure 2: Age of respondents

Just over half the respondents (54%) originated from Europe. Origin of the other half was divided amongst Iceland (18%), other Nordic countries (12%), North America (11%) and the rest of the world (5%) (Figure 3).



Figure 3: Nationality of respondents

Many non-Icelandic visitors found open-ended questions asking where they were staying difficult to answer due to their lack of knowledge of place names. When their identified locations are grouped according to region, it can be seen that 45% had stayed the night before answering the questionnaire in Skagafjörður and 63% would be staying in Skagafjörður on the night they completed the questionnaire (Figure 4). Where questionnaires were conducted at accommodation facilities (20.2%, n=45), the respondents were usually staying there for at least one night.



Figure 4: Location of overnight stays

Most of the respondents were travelling with family members or friends (73%). 17% were on organised tours. Least common was travelling alone (6%) or with colleagues (3%) (Figure 5).



Figure 5: Travel companions

Of the 54% of respondents travelling by car, 22% were in private cars (therefore likely to be Icelandic) and 32% in rental cars (therefore likely to originate from another country). 21% were travelling by bus, either by coach in an organized group or by the national bus company Straeto. Some of the visitors were on horse riding tours or hiking in the area at the time they completed the questionnaires, which explains the responses of 16% travelling by horse and 8% on foot. 1% travelled by bicycle (Figure 6).



Figure 6: Mode of transport

The most commonly represented occupation of respondents was professional, followed by students and those in managerial/clerical or service positions. Working at home and unskilled were the lowest represented occupations (Figure 7).



Figure 7: Occupation of respondents

The demographic data presented in Figures 1 to 7 creates a profile of the 'average' visitor to the area most likely to be a professional, 41 year old female from Europe, travelling in a rental car with friends or family and staying overnight in the local area.

Expressing opinion on a five point Likert scale, most respondents agreed, or strongly agreed, that four words were highly favored for describing the area: natural (97%), beautiful (97%), quiet (96%) and impressive (95%). Opinion was more divided about the word "accessible", though 77% still agreed, or strongly agreed, that it was an appropriate descriptor for the area (Figure 8).



Figure 8: How descriptive do you find the following words for this area?

An open-ended question allowed respondents to describe in their own words what drew them to the region. Frequently occuring in the quotes are words related to the natural state of the area: it being "untouched" and "undeveloped". The rivers are also frequently mentioned:

"Un-changed, natural, unspoilt and untouched by human activity"

"The untouched nature, wilderness + natural beauty"

"The beautiful nature and that it's that little developed"

"nature, nature, nature"

"The nature + River"

"Landscape, nature

"The untouched nature"

"The untouched nature and level 4 waters"

"The natural beauty and the remoteness of the river/area"

"Pristine natural beauty"

"The emptiness and the space"

"The large, untouched flowing rivers"

Respondents reported extremely high levels of satisfaction with their experience of tourism in the area. 92% were satisfied, or very satisfied, with the nature in the area and 91% were satisfied, or very satisfied, with their stay in the area (Figure 9).



Figure 9: Satisfaction with nature and stay in the area

The most popular visitor activity in the area was bathing in a natural hot spring (n123), which respondents may have also chosen to indicate they had been, or intended to go, to a swimming pool. Rafting (n117), walking (n115), horse riding (n110) and viewing geological phenomenon (n109) were also very popular activities (Figure 10). For the 98 respondents who included the time they spent walking in the area, their average time was 11.7 hours and the median time was 4.0 hours, with a standard deviation of 19.5 hours.



Figure 10: What did you do/plan to do during your stay?

Respondents were asked if they came to do/see/visit anything in particular in the area. Very few visitors said "no" and the "yes" responses most frequently stated rafting, horse riding and experiencing nature as their particular interest in the area.

"We came for the rafting"

"The East Glacier River"

"Horse riding in the nature

"All of the beautiful nature"

Visitors staying for just a few hours and up to one day (25%), two to four days (34%) and five to seven days (30%) were fairly evenly distributed in the results. The percentage reduced considerably at eight to 14 days (8%) with only 3% staying longer than 14 days (Figure 11). This result, of ³/₄ of the respondents staying in the area for more than one day, was unexpectedly high. Respondents may have thought the question was asking how long they were staying in Iceland. However, respondents on long hiking or riding tours, and those on three day rafting tours, would have been staying for multiple days in the area, thus the results may still be an accurate reflection of the length of visitor stay in the area.



Figure 11: Length of stay (days)

Most of the respondents (81%) were first time visitors to the region (Figure 12). Of those who had visited before (19%), the percentage was fairly evenly spread between those who had visited once before (33%), those who had visited two to four times before (21%) and those who had visited five to ten times (38%). The percentage reduced considerably at ten or more times (8%) (Figure 13). This followed a pattern noted by interviewed horse riding tour operators in particular, who reported multiple repeat visitation by their guests.



Figure 12: Prior visitation



Figure 13: Number of visits

Improving roads was not strongly supported. 39% of respondents thought improving the roads in the area was undesirable or very undesirable and only 21% considered road improvement to be desirable or very desirable. 40% chose to remain neutral on this topic (Figure 14).



Figure 14: Desirability of road improvement

Respondents were asked to indicate how important 15 factors were for them while they were travelling in the area. All 15 were considered more important than unimportant, though many (such as "camping where you don't see or hear other travellers") received a very high neutral score (47%). "To enjoy unspoiled nature" and "to enjoy peace" stood out for their extremely high "very important" or "important" percentages (97% and 96% respectively). Far less important is the provision of picnic benches and tables, and designed footpaths (Figure 15).



Figure 15: Important factors for travellers in the area

The importance of wilderness, or unspoiled nature, was strongly identified. Only 1% of respondents thought that wilderness was not part of the attraction of the area. 5% had no opinion and wilderness, or unspoiled nature, was part of the attraction for 94% (Figure 16). In addition, 85% of respondents visited the area to experience wilderness/unspoiled nature. 8% said experiencing wilderness was not part of their reason to visit and 7% had no opinion (Figure 16).

	■ Yes ■ No ■ No opinion			
Do you think wilderness/unspoiled nature is part of the attraction of this area?	94%		5%	
Did you visit this area to experience wilderness/unspoiled nature?	85%	8%	7%	

Figure 16: Importance of wilderness

Opinions on whether unseen structures affected wilderness experiences were divided. 17% said the structures would not affect them at all. 22% expected a little effect and 24% expected to be affected to some extent. 17% expected much affect and 16% expected very much effect. In total, 89% said that the structures would have some effect of their experience of wilderness (Figure 17).



Figure 17: Do structures affect wilderness experience?

Figures 16 and 17 demonstrate that perception of wilderness or unspoiled nature is critical to the value of this area as a destination for travellers and that the presence of structures, even ones that are unseen but known about, distracts from this value.

Respondents were provided with a set of options to choose from to indicate what infrastructure did not negatively affect their perception of wilderness. They were instructed to choose as many of the options as they felt appropriate. Results showed that the presence of mountains huts and trails were far less likely to disrupt wilderness values than radio masts or power plants (Figure 18).



Figure 18: Influence of infrastructure on perceptions of wilderness

68-77% of respondents agreed or strongly agreed that any of the power plant proposals and associated infrastructure would negatively affect their decision to visit the area. 15-24% were neutral, leaving only 5-7% with no opinion (the majority in each part) or positive/strongly positive about the effect on their decision to visit (Figure 19).



Figure 19: Effect of power plants and infrastructure on decision to visit

Further, most respondents indicated that the presence of the constructions would reduce, or even remove, their desire to come to the area. Comments included:

"This would prevent me from coming back to visit and invest in an Iceland holiday"

"Would not go - Would find another country for a wilderness experience"

"Become an industrial zone & hence zero interest in visiting the region"

"This is not the nature I'm looking for in Iceland, I have this in Germany"

"I came to Iceland to get away from those things"

"I came mostly for the rafting, I would not have visited Iceland if there wasn't any rivers"

"I would NOT visit the area"

"It would fully remove my desire to visit the area"

"Makes the rafting we did impossible/less attractive, which was our main reason to come"

"It'd be a technology impact on the nature, I'd not feel like it's something I want to see"

"Rivers would be destroyed and the nature would not be natural"

"Very negative, this area would then lose its special feature"

"The area would not be any more natural!"

"Places that attract tourism will be less. And most of the attractions shows the beauty of the nature"

"It would be horrible, the unspoiled nature would be destroyed"

Respondents were mainly negative about any type of power plant or associated infrastructure in any location. The combined somewhat negative and very negative scores ranged from 39% for geothermal power in the lowlands to 67% for power lines and hydropower in the highlands. Neutral scores, where the respondent either had no opinion or declined to share it, were also high, ranging from 24% for hydroelectric power in the lowlands to 41% for geothermal power in the lowlands.

In general, respondents were slightly less negative towards power plants and associated infrastructure in the lowlands than in the highlands, but the difference (12% for power lines, 7% for geothermal, 5% for wind farms and 3% for hydro) was minimal. Similarly, 2% were more in

favour of reservoirs in the highlands than in the lowlands: a percentage too small to be considered significant (Figure 20).



Figure 20: Attitudes to power plant types and locations

89% of respondents agreed or strongly agreed that they chose destinations like this so they can rest and recover. The same number (89%) agreed or strongly agreed that they choose destinations like this for reasons of escapism and to put their worries aside (Figure 21).

	Strongly agree	Somewhat agree	Neutral	Somewhat disagr	ee Strongly disagree		
(a)		66%			23%	6%	4%
(b)		66%			23%	6%	4%

Figure 21: Importance of the region for rest and escape from daily life

The most negatively perceived structures or facilities in the area were power lines (61%), reservoirs (60%), hydro power plants (59%) and wind turbines (56%). The most positively

perceived were mountain huts (70%), gravel roads and campsites (53%) and toilets (52%). Neutral scores were high, ranging from 22% for mountain huts to 37% for radio masts (Figure 22).



Figure 22: Opinions about structures and facilities in the area

3.2 Results from the Interviews

A wide range of business types were represented in the 20 interviews conducted in Skagafjörður. Several were multifaceted businesses combining, for example, horse riding with accommodation. These business types and numbers are listed below according to their main activity:

~	Hotels, farm holidays or other accommodation	5
✓	Horse riding	4
✓	Hiking trails and tours, including historical	3
✓	River rafting	2
✓	Horse shows	1
✓	Handicraft	1
✓	Travel agency	1
✓	Museum	1
✓	Boat trips, sea angling, bird watching	1
✓	Jeep tours	1

Annual visitor numbers at each of the tourism businesses varied considerably, ranging from an estimation of 7000 per year at one place to only 50 at another. All operators reported a noticable growth in numbers in recent years.

Visitor activities at each business obviously varied according to the type of business. However, according to interviewees, the main activities in the areas most effected by Villinganes Power Plant, Skatastaðir Power Plant C or Skatastaðir Power Plant D were rafting, horse riding, hiking and jeep tours.

Several of the tourism business operators described their visitors as "adventure tourists". These are a type who look for adventure, exhilaration and excitment in their recreational experience (Weber 2001). This is perhaps particularly true of the visitors who take part in rafting or horse riding activities. Operators running hotels or managing tourism agencies were more likely to describe their visitors as "mixed" both in terms of their perceived type and the recreational activities in which they chose to engage. However, common to most visitors, according to the tourism operators, was an interest in nature and thus they could also be classified as "nature tourists" (Mehmetoglu 2005).

Some businesses said their guests were mostly Icelanders, others said their guests were 99% non-Icelanders. Others reported a 50/50 mix. This demonstrates that the area is a destination for both foreign and local tourists. The rafting companies reported a change over the last few years from a majority of Icelanders to a majority of non-Icelanders. These companies also receive a lot of school groups, mainly at the start of the season before the Icelandic school year ends.

"Anywhere between 20 and 30 different schools will come. Most of them will be Icelandic schools from all over the country and then in previous years we've had schools from the Faroe Islands, we've had schools from Greenland, Denmark as well just coming through on school trips"

"Nature" was the most commonly stated key attraction to the area:

"The beauty of nature and the quietness"

"Nature first and foremost"

"Unspoilt nature"

Other attractions included rafting, horse back riding and history. The rivers and Austurdalur valley were also frequently mentioned:

"The rivers first and foremost. Other activities in the neighborhood, including Austurdalur which is getting very popular"

"The valley itself and its story. The canyons, the fresh water side rivers and the glacier rivers - it is special. All this is in harmony"

The places that tourists visited also varied according to the type and location of each business. Businesses located closer to the reservoirs and power station sites, those accomodating tourist going to or coming from the highlands above Skagafjörður, and those that took visitors into Austurdalur as part of their organised tours, such as rafting, horse riding and hiking, were more likely to report visitation to this region. Those further from the sites, and less specialised businesses such as accommodation services, also mentioned museums, hot springs and other well known tourist attractions in the broader Skagafjörður region as popular places for their guests to visit.



Photograph 6: Rafting and Kayaking in Austurdalur. Credit: Viking Rafting

When asked why the area was special, the words most frequently used included: not crowded, river rafting, nature and vegetation, rural, and open space. This was common to all businesses, regardless of their type and distance from the proposed power plant sites.

"The landscape of the canyon and the river running through it is our big attraction, to be riding alongside a glacial river"

"Absolutely world class in the east river canyon"

"Laugarfell is definietly an absolute pardise. The reservoir [Bugslón] would change the landscape a lot"

Opinions on accessibility of the area had strong similarity. Only two operators declared that accessability to Austurdalur should be improved with better roads. While some said accessability to Austurdalur could be better, most of those also acknowledged that the types of tourists visiting the region were happy with the level of accessibility that exists. Unpaved roads permit access for hikers and horse riders to the northeast part of the valley past Merkigil, and four weel drivers as well, across the canyons just south of Merkigil, to the church at Ábær. South of Ábær there are no roads. The fact that the roads into the valley are not very good was stated by some as an advantage to maintaining the tourism values of the area, and was seen by tourists as part of the adventure.

"People that are going to Austurdalur don't neccessary want fine roads to there. It is a special type of tourists"

"It is not desirable to make the valley accessable for all kinds of traffic. Then the attraction that pulls tourists to the valley is gone"

"It would be great to have better roads into the area, but with the rivers gone or the rafting gone it doesn't really matter, you wouldn't be going there to see the scenery once the dams are there"

A road going to the highlands through Vesturdalur already exists and many operators thought that road should be made better to increase accessibility to the highlands for smaller cars and therefore more variable types of tourists. Thus, there was support from some operators to upgrade and maintain exisitng roads through Vesturdalur but not to 'open up' access to Austurdalur.

When asked about the future of the area and tourism development, most respondents were very positive and saw a lot of potential for both growth and diversity while avoiding the overcrowding issues already apparent in the south of Iceland.

"Would like to see slow travel develop - people stay more nights and do more. Should target adventure tourists and develop small businesses"

"It has been a big change in the past few years how many [tourists] say they have come here because of the area being so sparsely populated [...] it seems like tourists are coming here because they want to avoid hotels and accommodation without personal contact with their hosts. They have booked their accommodation according to that all around [Iceland], through booking, Airbnb and farm holidays. They are looking for this certain concept"

All operators agreed there could be more tourism use in the area and that more tourists could be catered for. To achieve this, more accommodation and recreation opportunities in Skagafjörður would be required. Suggestions were made by most operators that the existing businesses could work together more through coordinated efforts in marketing and packing tours.

"We have everything ... we just need to make it work a little better"



Photograph 7: Hikers crossing Fossá, Austurdalur. Credit: Bjarni Maronsson

Operators varied in their opinion on whether the existing infrastructure in the area was suitable, for both current and future tourism. While many said "the current infrastructure is fine" and "more roads would be horrible", as described above, others said that it would be acceptable to improve the roads slightly and maintain them better. Infrastructure is about far more than roads however and dicussions about infrastructure with operators also identified the need for more accommodation and toilet facilities, bridges and signs in the local area. On a wider scale, several operators also advocated the construction of an international airport in Sauðárakrókur or Akureyri to allow foreign tourists improved access the northern regions of Iceland.

When asked what infrastructure tourists wanted, operators replied:

"Hikers, horsebackriders and nature tourists want to have it simple"

"The tourists that go to Austurdalur want untouched nature and simple infrastructure (tracks, cabins)"

"A big part of the experience from the valley is the simple infrastructure there and the (still) unspoild nature"

"It is not an attraction as soon as you have a better road up there. They [roads] would destroy the attraction"

Thus, the operators had clear visions for the type of infrastructure that would be good for their business but at the same time considered that most tourists would be happier without more infrastructure.

When asked about their opininon of the power stations, four of the 20 operators interviewed were in favour of power stations and 16 were against. The strength of these convictions varied; for example, from those "completely against it" to those who said they were "not really against them at all, it's just a question of whether we need them". The perception of need was mentioned frequently. If a need for the local community could be proven, then opinion toward the power plants was more likely to be positive. However, the perceived need for more electricity was often associated with foreign businesses, such as the proposed alumina smelter at Hafursstaðir in Skagabyggð (Elliott 2015), and then the opinion of the interviewee was more likely to be negative.

The perceived impact of the power stations on individual business depended largely on how closely the business was aligned with the region in which the stations and reservior would be built, as well as the operators opinion of the power stations. The rafting companies and operators who took tours into Austurdalur saw the most serious impacts:

"That will kill everything"

"It will ruin everything we have build up here for 27 years"

Others recognised an indirect impact even if their own business was not directly effected:

"Yes, both directly as we get guests from the river rafting businesses - and indirectly"

"It would definitely have a high impact on my business even though I'm not operating directly on these two rivers ... it's just such a big post in the tourism landscape in Skagafjörður ... it should have an impact on, well, on most people in tourism because people who come rafting they tend to buy something else as well, they stay in a hotel or a guesthouse or go horseback riding the day after, or eat at a restaurant or whatever. Would also negatively impact fish and thus fishing in the river ... [and] ... do a lot of damage"

"No direct effect. BUT indirect as it all hangs together. All tourism services in the area are dependent on each other. Would affect the image of Skagafjörður in a negative way"

While a couple of operators mentioned a possible positive impact in the form of better roads, only one operator, whose business is located the furthest from the proposal sites, saw no direct or indirect impacts.

Discussing why and how the power stations would effect their business, comments ranged from some foreseeing complete destruction and the business having to close, to the need to change the way they operate:

"These rivers are the biggest attraction for the valleys ... The powerlines will destroy our business completely ... The lines will destroy our riding possibilities, or damage it endlessly"

"I think we are destroying one of the best pearls that we have here in that area. Because there are so many people depending on that place ... I would have one attraction less, and it is the main one"

Most interviewees thought the presence of the power stations would have a negative effect on future tourism development. A lot of these concerns were based around the perception that the stations would destroy the natural environment, thus remove a key attraction for tourists and cause suffering for operators reliant on the area and the river as a resource.

"Skagafjörður is privileged by having the best rafting river in the country. If it is destroyed it will most certainly affect tourism in the area"

"The image of Skagafjörður as tourism destination will be damaged"

"Need to change marketing. You would be riding alongside a dam basically, which doesn't have the same attraction ... I think it will effect tourism in the area in a big way. ... the thing about North-West Iceland is that it's quite untouched, and it's rural ... but accessible at the same time. ... This thing will just ruin that idea I think. ... It is said to be the best rafting river in Europe, and it's something that you shouldn't sacrifice for extra power ..., because this is something that's unique"

Less negative opinions were expressed by the four operators in favour of the power stations who thought tourism was flexible enough to find new attractions.

"Tourism will adjust to a different situation"

"The nature of Austurdalur as such will not be affected, just the river. As a freshwater river it will be more beautiful"

"I think it is not so bad for tourism"

Without the power stations, most operators saw increased potential for tourism in the area, particularly in rafting, hiking and horse back riding.

When asked which future they preferred, six of the 20 interviewed said they preferred a future without the power stations. One was unwilling to answer, one was uncertain, one said it did not matter and one said a power plant would have a positive impact on tourism in Skagafjörður as a whole. The remaining ten did not answer the question directly but their responses to this and other questions suggest they would prefer a future without (see quotes above).

Those who prefered a future without the power stations said they felt this way because:

"From a business perspective it kills everything. Dams are a symbol of everything that is bad for a river environment"

"Nature tourism is the future for Icelandic tourism"

"For the sake of the valley - the rivers, nature - everything"

"It is about how we define our region [as residents as well as a tourism destination]"

Final questions asked operators to consider other power options and also asked their opinion of power lines. Most also saw power lines as negative for tourism and preferred those situated below ground rather than above.

"Power lines are negative for tourism also. They damage the view."

"I think the companies that ... those companies that make a profit from [selling] electricity ... they have the capacity to see that this [power lines] is put underground"

The one exception to the widespread dislike of power lines said:

"They have never disturbed me The old small ones are even nice - go well in the landscape. And the big ones - people stop seeing them after awhile".

Not many operators had thought of other power options in the region, but sea tide, solar power plants and wind farms were mentioned. Most of the operators did not have strong opinions on wind farms but a few mentioned visual impact and noise as a negative impact. Many were in favor of wind farms over hydroelectric power plants and interviewees who thought wind farms were better than hydroelectricty did so because the wind farms were reclaimable and did not permanently destroy the landscape.

"I'm a fan of windmill farms. If I had to choose something to bring more power in, I would choose the windmills, ... they've done it quite nicely in Denmark, in the UK, and it's just not so much disruption on nature as this proposal, which is just the main concern I think. How can we get more power without destroying something that cannot be undestroyed then?"



Photograph 8: Horse riding tour in Merkigil, Austurdalur. Credit: Bjarni Maronsson

4.0 Conclusion

From analysis of the questionnaire data, the following key themes emerged:

- 1. The nature and a perception of unspoiled wilderness were key reasons the majority of visitors came to the area and the construction of any of the proposed power plants and their associated infrastructure would deter people from visiting.
- 2. The majority of visitors were extremely satisfied with the existing nature in the area and their experience of it.
- 3. Bathing in hot springs, rafting, hiking, horse back riding and viewing natural phenomena were activities experienced by most visitors.
- 4. Visitors to the region valued highly their ability to enjoy unspoiled nature and peaceful surroundings while resting and escaping the demands of daily life. The presence of mountain huts and trails were not seen as a threat to this. Power plants and their associated infrastructure were seen as a threat, with the majority of visitors expressing negative attitudes to all types regardless of their location.
- 5. The perception that the tourism experience in Iceland should be different from experiences in other places was strongly conveyed. Having power plants in the Skagafjörður region was seen as something that would distract from Iceland's current 'difference' which is a key reason for tourists to visit the area.

From analysis of the interview data, the following themes emerged:

- 1. All of the interviewees are of the opinion that the area can cope with more tourists and that the possibilities for more tourism in the area are diverse.
- 2. Most of the operators mention nature first when asked about the key attraction in the area.
- 3. All interviewees think that a power plant in the rivers will impact the rafting in a very negative way.
- 4. Most of the operators are very much aware that the two rafting businesses are responsible for drawing a lot of tourists, who otherwise would not visit the region, into Skagafjörður. These tourists then eat, sleep, buy souvenirs and participate in recreational activities in addition to rafting. Thus, the presence of the rafting as an attraction in the region is linked to the success of other local businesses. For this reason, a power plant in the river system is expected to have a big impact on the future of tourism in Skagafjörður by most operators interviewed.

- 5. Differences in opinion are notable between those who live and run tourism business in the southern part of Skagafjörður (near the rivers) and those who live further north north of Varmahlíð and in Sauðárkrókur. Thus, different opinions between interviewees fits a pattern of their location: the closer to the power plant sites the more opposed the tourism operators are.
- 6. Few considered increased accessibility to Austurdalur, to the rivers or power plant sites, in the form of roads, an important benefit for tourism. Instead, better access to the valley mouth, better air transport to the northern part of the country, and better roads to and within Skagafjörður were considered of greater tourism benefit. Many commented that the current accessibility of Austurdalur (unpaved roads and trails) contributed to keeping large number of tourists from the area and this was positive because it made the area and visitor experience of it more "special".
- 7. Overall, interviewees showed concern that the power plants and their associated infrastructure would damage the environment and the rivers. Many commented that the rivers, particularly the east river, is increasingly becoming know as one of the best white water rafting rivers in Europe. As rafting was considered a central tourism attraction in the area, in turn bringing customers to other businesses such as hotels, potential loss of this was a concern to most:

"The rafting is the key to get them up here"

"The two rivers create a combination of a very, very special area"

"I think it will effect tourism in the area in a big way"

"It's just too much of a risk, we would lose too much"

"This is just too risky ... this is just too big to sacrifice"



Photograph 9: East Glacial River crossing, Austurdalur. Credit: Gísli Rúnar Konráðsson

5.0 Acknowledgements

We would like to thank Hólar University College, the Icelandic Seal Center and the University of Iceland for academic support. This includes map making by Ása Margrét Einarsdóttir and questionnaire design by Anna Dóra Sæþórsdóttir. Visual images of Austurdalur were supplied by Evelyn Ýr Kuhne, Viking Rafting, Bjarni Maronsson and Gísli Rúnar Konráðsson - thank you for your willingness to share these with us. We are also grateful to Dr Ian Bytheway for generating the figures, to Egill Björn Thorstensen for assisting us with collecting data, and to both Egill and Anna Vilborg Einarsdóttir for transcribing interviews. Finally, enormous thanks to all the participants who willingly gave up time in their vacation, or out of their work day, to answer our questions.



Photograph 10: East Glacial River and Hörkná. Picture taken from Hörknármúli, Austurdalur. Credit: Gísli Rúnar Konráðsson
6.0 Bibliography

Arinbjarnarson. H. 2016 Nl-vestra_11apr_laufey. Exel sheet. Personal correspondence via email.

- Arnarsdóttir, E.S. 2015 Chinese to Fund New Smelter in Northwest Iceland. Iceland Review On Line. http://efehzqyv.icelandtourist.is/news/2015/07/03/chinese-fund-new-smelternorthwest-iceland.
- Byggðasafn Skagfirðinga 2010 Ársskýrsla Byggðasafns Skagfirðinga 2010. On Line. http://www.glaumbaer.is/static/files/Skjol/Arsskyrslur/10-arsskyrsla.pdf
- Byggðasafn Skagfirðinga 2015 Ársskýrsla Byggðasafns Skagfirðinga 2015. On Line. http://www.glaumbaer.is/static/files/Skjol/Arsskyrslur/15-arsskyrsla-lok.pdf
- Elliott, A. 2015 Northwest Iceland Signs Contract for New Aluminum Smelter. *Iceland Review*. On Line. <u>http://icelandreview.com/news/2015/06/14/northwest-iceland-signs-contract-new-aluminum-smelter?language=en</u>.
- Ferðamálastofa 2012 Handbókin 2012. Akureyri: Ferðamálastofa
- Mehmetoglu, M. 2005 A case study of nature-based tourists: Specialists versus generalists. *Journal* of Vocation Marketing, 11(4): 357-369.
- Morgunblaðið 1975 Rannsóknir í Skagafirði: Villinganesvirkjun dygði án orkuferks iðnaðar nyrðra. *Morgunblaðið*, 23 August 1975. p13.
- Óladóttir, O. Þ. 2015 2015 Tourism in Iceland in Figures 2015. Reykjavik: Icelandic Tourism Board
- Rögnvaldsson, G. 2000 *Áhrif væntanlegrar Villinganesvirkjunar á ferðaþjónustu í sunnanverðum Skagafirði.* Hólum í Hjaltadal: Hólaskóli – Ferðamálabraut.
- Sæþórsdóttir, A.D. & Saarinen, J. 2015 Changing ideas about natural resources: tourists' perspectives on the wilderness and power production in Iceland. *Scandinavian Journal of Hospitality and Tourism*, DOI: 10.1080/15022250.2015.1108866
- Sæþórsdóttir, A.D. & Saarinen, J. 2015 Challenges due to changing ideas of natural resources: tourism and power plant development in the Icelandic wilderness. *Polar Record*, Cambridge University Press. doi:10.1017/S0032247415000273
- Sæþórsdóttir, A.D. 2012 Tourism and Power Plant Development: An Attempt to Solve Land Use Conflicts. *Tourism Planning & Development*, 9(4): 339-353.
- Sæþórsdóttir, A.D., Hall, C.M. & Saarinen, J. 2011 Making wilderness: tourism and the history of the wilderness idea in Iceland. *Polar Geography*, 34(4): 249-273.

- Sæþórsdóttir, A.D. and Ólafsson, R. 2010a Nature tourism assessment in the Icelandic Master Plan for geothermal and hydropower development. Part I: rapid evaluation of nature tourism resources. *Journal of Heritage Tourism*, 5(4): 311-331.
- Sæþórsdóttir, A.D. and Ólafsson, R. 2010b Nature tourism assessment in the Icelandic Master Plan for geothermal and hydropower development. Part II: assessing the impact of proposed power plants on tourism and recreation. *Journal of Heritage Tourism*, 5(4): 333-349.
- Statistics Iceland 2016 *Tourist Accomodation 2015*. Statistical Series 5 April 2016, 101(8). ISSN 1670-4770. On Line. http://www.statice.is/publications/publication-detail?id=56280
- Thórhallsdóttir, T. E. 2007a Environment and energy in Iceland: A comparative analysis of values and impacts. *Environmental Impact Assessment Review*, 27: 522-544.
- Thórhallsdóttir, T. E. 2007b Strategic planning at the national level: Evaluating and ranking energy projects by environmental impact. *Environmental Impact Assessment Review*, 27: 545–568.
- Verkefnisstjórn 3. áfanga verndar- og orkunýtingaráætlunar 2016 (mars). Drög að lokaskýrslu. On Line. http://www.ramma.is/media/verkefnisstjorn-gogn/RA3-Lokaskyrsla-DROG-160331.pdf
- Weber, K. 2001 Outdoor Adventure Tourism: A review of research approaches. Annals of Tourism Research, 28(2): 360-377.



Photograph 11: Hut in Austurdalur. Credit: Viking Rafting

7.0 Appendix

Appendix A: Questionnaire in Icelandic Appendix B: Questionnaire in English Appendix C: Questionnaire in French Appendix D: Questionnaire in German Appendix E: Map of the region with Icelandic text Appendix F: Map of the region with English text Appendix G: Interview Schedule in Icelandic Appendix H: Interview Schedule in English Appendix I: Letter of consent in Icelandic Appendix J: Letter of consent in English



Photograph 12: Fossá in Austurdalur. Credit: Gísli Rúnar Konráðsson

Appendix A: Questionnaire in Icelandic



Könnun meðal ferðamanna í Skagafirði

Könnun fra mansaka á áltrjúm szatnafisrikjanama Skatastahavirkjum (C og D) og Villinganesvirkjunar á ferðamennsku á svaðinu (sjá meðfylgjundi kort og lýsinga). Verkefnið er unnið á regum Hálaskóla og Háskóla Llands vegna Kammalatilunar (Jatilun um verul og orkunyitingu landsvæða). Það tekur um 10-15 minitur að svara sparinignnum. Dakka þír korlega fyrir þástiökunal

Hversu lýsandi finnst hér eftirfarandi orð fyrir svæðið á meðfylgjandi korti

1. Hversu lysan	mjög	frekar	hvorki né	frekar	mjög	.,
1 Náttúrulegt			□3	□4	D 5	Manngert
2 Kyrrt	1		3	4	D 5	Hávært
3 Aðgengilegt	D 1	D 2	3	4	D 5	Óaðgengilegt
4 Fallegt	1	2	3	4	D 5	Ljótt
5 Áhrifamikið	D 1	D 2	3	4	D 5	Áhrifalítið

2. Hvað heillar þig við svæðið? _

	mjög óánægð(ur)	óánægð(ur)	hvorki né	ánægð(ur)	mjög ánægð(ur)
1 Dvölina á svæðinu			□3	4	D 5
2 Náttúru svæðisins			□3	1 4	D 5
 Hvað gerðir þú/ Vinsamlega merktu j 			dvöl þinn	i stendur?	
□1 Gönguferð	klst	🗖 6 Veiða			
□2 Hestaferð		🗖 7 Flúða			
□3 Ökuferð			mig í heit		
🗖 4 Skoða fugla		🗖 9 Skoð	a jarðfræð	ifyrirbæri	
□5 Skoða plöntur		🗖 10 Ann	að:		
5. Var eitthvað sem	þú komst til	að sjá/gera ö	ðru fremu	115	
🗖 1 Já, hvað?				□2	Nei
6. Hvað dvelur/dva	lldir þú lengi	á svæðinu?			
mín.		klst	næ	tur	
7. Hefur þú ferðast				ve oft?	□2 Ne

8. Hversu æskilegt eða óæskilegt þú telur vera að bæta vegi á þessu m slóðum? mjög æskilegt □1 mjög óæskilegt **D**5 frekar æskilegt hlutlaus frekar óæskilegt **D**2 □3 □4

9.	Hversu mikilvæg	eru eftirfarandi	atriði fyrir b	ig á ferðalagi	bínu um svæðið?

	alls ekki	ekki	hvorki	mikil-	mjög
	mikilvægt	mikilvægt	né	vægt	mikilvægt
1 Merktar gönguleiðir		D 2	3	\square_4	D 5
2 Lagðir göngustígar	1	1 2	3	1 4	5
3 Göngubrýr	1	2	3	4	5
4 Að hægt sé að njóta kyrrðar	□ 1	1 2	3	1 4	5
5 Að hægt sé að upplifa óraskaða náttúru	D 1	2	3	4	D 5
6 Áningarstaðir (bekkir og borð)	1	1 2	3	1 4	5
7 Að það séu fáir aðrir ferðamenn	1	2	3	4	5
8 Að ekki sjáist ummerki um utanvegaakstur	□ 1	1 2	3	1 4	5
9 Að geta gengið án þess að sjá mannvirki		□2	□3	□4	Π5
(önnur en fjallaskála)					
10 Að ekki sjáist ummerki eftir aðra		\square_2	□3	□ 4	Π5
ferðamenn	ш.	<u> </u>			_
11 Að skoðunarverðir staðir séu merktir		2	3	\square_4	5
12 Skipulögð tjaldsvæði		1 2	□3	\square_4	5
13 Að mega tjalda hvar sem er innan svæðisins	1	1 2	3	1 4	5
14 Að geta tjaldað þar sem þú verður ekki var		-	-	-	-
við aðra	U 1	2	□ 3	4	5
15 Að verða ekki fyrir ónæði af flugumferð	D 1	D 2	□3	□ 4	D 5

10. Finnst þér víðerni/ósnortin náttúra vera hluti af aðdráttarafli svæðisins?

🗖 1 Já 🗖 2 Nei 🗖 0 Enga skoðun

11. Komstu á þetta svæði til að upplifa víðerni/ósnortna náttúru?

□1 Já □2 Nei □0 Enga skoðun

12. Hafa nálæg mannvirki, sem þú veist af en sérð ekki, áhrif á upplifun þína á víðernum/ósnortinni náttúru?

engin	lítil	einhver	frekar mikil	mjög mikil	enga skoðun
D 1		3		D 5	

18. Hvað finnst bér um eftirtalin mannvirki á svæðinu?

13. Hvað má vera til staðar af neðangreindu án þess að hugtakið víðerni/ósnortin náttúra glati merkingu sinni? Vinsamlega merktu við fleira en eitt atriði ef við á

		0	0			
	Ekkert		🗖 8 Raflínu	ır		
\square_2	Fjallaskálar		🗖 9 Fjarski	ptamöstur		
□3	Hótel		🗖 10 Virkja	nir		
\square_4	Vegir		🗖 11 Miðlu	inarlón		
D 5	Vegslóðar		12 Vindr	nyllur		
	Girðingar		🗖 13 Lagði	r göngustíg	ar	
D 7	Þjónustumiðs	töðvar	□14 Stígar	myndaðir	af umferð manna	og dýra

-	14. Hvaða áhrif myndu eftirtaldar virkjanir og virkjunarmannvirki hafa á áhuga þinn á því að ferðast um svæðið?								
	mjög neikvæð	frekar neikvæð		frekar jákvæð	mjög jákvæð	enga skoðun			
1 Skatastaðavirkjun	D 1	D 2	□3	\square_4	D 5	D 0			
2 Miðlunarlón (Bugslón, 26,3 km ²)	D 1		D 3	\square_4	D 5	D 0			

3 Villinganesvirkjun	D 1	D 2	D 3 D 4	D 5	•
4 Miðlunarlón (1,7 km²)		D 2	3 4	D 5	D 0
5 Raflínur		D 2	3 4	D 5	D 0

15. Lýstu nánar áhrifunum sem fyrrnefnd virkjunarmannvirki hefðu á áhuga þinn á því að ferðast um svæðið _

	mjög neikvætt	frekar neikvætt	hvorki né	frekar jákvætt	mjög jákvætt
1 Frekari uppbyggingar vatnsaflsvirkjana á hálendinu	D 1	D 2	□3	□ 4	D 5
2 Frekari uppbyggingar vatnsaflsvirkjana á láglendi	□ 1	□2	□3	□4	D 5
3 Jarðvarmavirkjana á hálendinu	1		3	D 4	D 5
Frekari uppbyggingar jarðvarma- virkjana á láglendi	D 1	D 2	□3	\square_4	D 5
5 Vindmylla á hálendinu	1		□3	4	5
vindmylla á láglendi		D 2	3	\square_4	D 5
Uppistöðulóna á hálendinu	1		□3	4	D 5
Uppistöðulóna á láglendi			3	\square_4	
Frekari lagningar raflína á hálendinu		D 2	□3	4	D 5
0 Frekari lagningar raflína á láglendi	1		3	1 4	5
17. Hversu sammála/ósammála ertu	ı eftirfaraı mjö ósamı	ig .	ingum? nmála hlut	laus samm	mj ála samr
Ég kem á staði eins og þennan til þess að komast í burtu frá daglegu amstri o leggja áhyggjurnar til hliðar		1 [1 2	J ₃ □4	

 Hvað finnst þér um eft 	irtalin ma	unnvirki á	svæðinu?			
	mjög	frekar	ásættan-	frekar	mjög	veit ekki
1 Óuppbyggðir malarvegir	óæskileg	óæskileg	leg	æskileg	æskileg	
2 Uppbyggðir malarvegir					5 □5	
3 Vegir með bundnu slitlagi					5 5	
					5 □5	
4 Heilsársvegir			3			
5 Akbrýr á vatnsföllum		D 2	D 3		D 5	
6 Vatnsaflsvirkjanir		2	D 3		D 5	0
7 Jarðvarmavirkjanir		2	D 3		D 5	0
8 Uppistöðulón		2	D 3		D 5	0
9 Raflínur	D 1	2	3	4	D 5	0
10 Vindmyllur	1	D 2	D 3	4	D 5	0
11 Hótel	□ 1	D 2	3	4	D 5	0
12 Fjallaskálar	1	D 2	□3	\square_4	D 5	
13 Tjaldstæði			3	\square_4	D 5	
14 Verslanir/veitingastaðir			□3	\square_4	D 5	
15 Bensínstöðvar			□3	\square_4	D 5	
16 Salerni			□3	\square_4	D 5	
17 Matsala	1	D 2	3	4	D 5	
18 Gestastofa	1	D 2	3	4	D 5	
19 Fjarskiptamöstur			3	4	5	
 Hvar býrðu (póstnúm Hvar muntu gista næ Hvar gistir þú síðustu Mað hvarjurn farðari 	stu nótt? 1 nótt?					
24. Með hverjum ferðast	· _	0		sa sem eiga i	10	
□1 Ein/n á ferð □3 Ættingjum/vinum □5 Vinnu-/klúbbfélögum	🗖 4 Í	leð fjölskyl skipulagðri Ørum, hve	i hópferð			
25. Hvernig ferðast þú? 🛛	insamlega .	merkið við a	ulla kosti sem	eiga við		
□ 1 Á eigin bíl □ 4 Á mótorhjóli □ 7 Ríðandi	🗖 5 H	bílaleigub jólandi ðruvísi, hv		Í hópferð Gangandi	abíl	
26. Við hvað starfar þú?						
🗖 1 Nemandi 🗖	2 Skrifstof	u-/þjónus	tustörf			
□3 Ófaglærð/ur □	4 Eftirlaun	aþegi				
5 Stjórnunarstörf	6 Sérhæfð	tækni- og	iðnaðarstör	f		
🗖 7 Heimavinnandi 🛛	8 Sérfræði	ngur (lækn	ir, lögfræði	ngur, kenna	ri, o.s.frv.)	
9 Annað:						

Appendix B: Questionnaire in English



Survey on tourism in Skagafjörður

This survey is a part of a research on the effects of hydro power plants at Skatastabir (C and D) and Villinganes on tourism in the area (see mag and description). The research is led by Holar University College and the University of Ledand, and is a part of governmental project called The Master Plan for Conservation of Nature and Utilization of Energy. It takes approx. 10-15 min. to fill out the questionnaire.

Thank you very much for your participation!

1. How descriptive do you find the following words for this area (see map)?

	very	somewhat	neither/nor	somewhat	very	
1 Natural			□3	4	D 5	Developed
2 Quiet		D 2	□3	\square_4	D 5	Loud
3 Accessible		2 2	□3	4	D 5	Inaccessible
4 Beautiful		2 2	□3	4	D 5	Ugly
5 Impressive			□3	4	D 5	Unimpressive

2. What fascinates you in the area?

	very dissatisfied	dissatisfied	neither/ nor	satisfied	very satisfied
1. Your stay in the area		D 2	□3	4	D 5
2. The nature in the area	1	D 2	□3	1 4	D 5
4. What did you do/pl Mark more than one if		ring your sta	y?		
□1 Walk hours		🗖 6 Fishir	ıg		
2 Horseback riding		□7 River	rafting		
□3 Go for a drive		🗖 8 Bathe	e in a natur	al hot sprin	g
4 Bird watching		9 View	geological	phenomena	1
□ 5 Observe vegetation		1 10 Othe	er:	-	
5. Did you come to do	/see/visit a	nything in p	articular i	n the area	
□1 Yes, what?					2 No
6. How long are you p	lanning to s	tay in the ar	ea?		
min.	he		ni	ahta	

7.	Have you been in this area before?	□1 Yes, how often?	🗖 2 No

8. Would you consider it desirable or undesirable to improve roads in this area? very desirable desirable neutral undesirable very undesirable \square_1 **D**2 □3 **D**5

14. Would the following power plants and power infrastructure affect your decision to visit the area?

,						
	very negative	somewhat negative	no effect	somewhat positive	very positive	no opinior
1 Hydropower plant by Skatastaðir			□3	□4	D 5	\square_0
2 Reservoir (Bugslón 26,3 km ²)	1 1	D 2	□3	4	D 5	\square_0
3 Hydropower plant by Villinganes	D 1		□3	1 4	D 5	\square_0
4 Reservoir (1,7 km ²)	1 1	D 2	□3	4	D 5	\square_0
5 Power lines			□3	4	D 5	D 0

your desire to visit the area?

16. Please state how positive or negative your attitude is to the following:	
--	--

	very negative	somewhat negative	neutral	somewhat positive	very positive
1 Further development of hydro power plants in the Highlands	D 1	D 2	□3	4	D 5
2 Further development of hydro power plants in the lowlands	1 1	2	D 3	4	D 5
3 Geothermal power plants in the Highlands	D 1	2	3	4	D 5
4 Further development of geothermal power plants in the lowlands	D 1	2	3	4	D 5
5 Wind farms in the Highlands	1	2	3	4	5
6 Wind farms in the lowlands	D 1		□3	1 4	5
7 Reservoirs in the Highlands	D 1		□3	1 4	5
8 Reservoirs in the lowlands	D 1		3	1 4	5
9 Further construction of power lines in the Highlands	1	2	D 3	4	D 5
10 Further construction of power lines in the lowlands	1 1	2	□3	4	D 5
17. What is your opinion on the following	ng stateme	nts?			
	strongly disagree		neutral	somewhat agree	strongly agree
 I go to places like this to escape the demands of daily life and to put my worries aside 	D 1	D 2	□3	□4	D 5

 I go to places like this to be able to rest and recover ("recharge my batteries") 	1 2	□3	□4	D 5
---	-----	----	----	------------

9. How important are the following factors for you while travelling in this area?

	not at all important	not important	neutral	important	very important
1 Marked walking routes			□3		D 5
2 Designed foot paths			3	4	5
3 Walk-ways (footbridge)		2	3	4	5
4 To enjoy peace		1 2	□3	4	5
5 To enjoy unspoiled nature			3	4	5
6 Picnic places (benches and tables)			3	4	5
7 To have few other tourists around		2	3	4	5
8 That there is no trace of off-road driving			□3	4	D 5
 To walk without seeing structures (other than huts) 		□2	□3	□ 4	D 5
10 To see no trace of others having being there			3		5
11 Special markings on places of interest			□3	4	D 5
12 Campsites with facilities (toilets, trash cans etc.)	D 1	□2	□3	□4	D 5
13 To camp wherever you want within the area		2	3	4	5
14 To camp where you don't hear or see other travellers	D 1		□3	□4	□5
15. Not to be disturbed by air traffic			□3	4	5

10. Do you think wilderness/unspoiled nature is part of the attraction of this area?

□1 Yes □2 No □0 No opinion

11. Did you visit this area to experience wilderness/unspoiled nature?

□1 Yes □2 No □0 No opinion

12. Do nearby structures you know of, but you don't see, affect your wilderness experience?

not at all	little	to some extent	much	very much	no opinion
		3	\square_4	D 5	

13. In your opinion which of the following may be present in an area for it be

considered widerness:	iviare, more inan one ij appropriate
1 Nothing	□8 Power lines
2 Mountain huts	9 Radio masts
□ 3 Hotels	10 Power plants
4 Roads	11 Reservoirs
□ 5 Tracks by vehicles	12 Wind turbines
6 Fences	□ 13 Designed footpaths
□7 Visitor centres	□14 Trails made by walkers and/or animals

18. Please rate your opinion on the following structures/facilities in the area:

io. Tieuse fute your op.		iono ining ot	ructures	/ memico m					
	very inappropriate	inappropriate	neutral	appropriate	very appropriate	no opinion			
1 Gravel roads			□3		D 5				
2 Built-up gravel roads		D 2	D 3	4	5	D 0			
3 Asphalt roads		D 2	□3	4	D 5	D 0			
4 Roads passable year rou	nd 🗖1	2	D 3	4	D 5	D 0			
5 Bridges across rivers	1	D 2	3	4	5	D 0			
6 Hydro power plants	D 1	D 2	□3	4	D 5	D 0			
7 Geothermal power plan	ts 🗖 1	D 2	3	4	5	D 0			
8 Reservoirs	1	D 2	3	4	5	D 0			
9 Power lines		D 2	3	4	5	D 0			
10 Wind turbines	1	2	□3	4	D 5	D 0			
11 Hotels		1 2	□3	4	D 5	D 0			
12 Mountain huts		D 2	□3	4	D 5	D 0			
13 Campsites		D 2	3	4	5	D 0			
14 Shops/restaurants		1 2	□3	4	D 5	D 0			
15 Gas stations		D 2	□3	4	D 5	D 0			
16 Toilets			D 3	4	D 5				
17 Cooked food for sale		1 2	□3	4	D 5	D 0			
18 Visitor centre		D 2	□3	4	D 5	D 0			
19 Radio masts		D 2	□3	4	D 5				
19. Gender 🗖 1 Fem	ale 🗖 2 M	ale 20.	Age:	years					
21. Nationality:			_						
22. Where are you staying tonight?									
23. Where did you stay last night?									
24. With whom do you	ı travel? Ma	rk more than on	e if approp	briate					
□1 By myself	🗖 2 H	amily membe	ers						
□ 3 Relatives/friends		An organized							
□5 Work or club mates	0								

25. How are you travelling? Mark more than one if appropriate □1 In a private car □2 In a rent-a-car a By bue

Br maphvate car	2 In a rent-a-cai	L Dy Dus
□4 Motorcycle/ATV	□5 On bicycle	□6 On foot
□7 On horseback	■8 Other, what	

26. What is your occupation?

v. w mat is your occupation?
 Vertical and the system of the sys

Appendix C: Questionnaire in French



SONDAGE POUR LA REGION DE SKAGAFJÖRÐUR

Ce questionnaire fait partie de recherches concernant les impacts des centrales hydroëldestriques à Skatastabir (C et D) et Villinganes sur le tourisme dans la région (se reporter à la carte et la de description). Les redorbes sont dirigées par l'Universit de Holar et l'Universit é d'Islande dans les cadre d'un portes gonernemental appelé le Plan Directeur pour la Préseration de la Nature et l'Utilisation de l'Energie. Prévoyez 10 à 15 minutes pour remplir le questionnaire. Merci beaucoup pour votre participation!

1. À votre avis, dans quelle mesure les mots suivants décrivent-ils cette région

(voir la carte)?						
	très	un peu	ni l'un/ ni l'autre	un peu	très	
1 Naturel		2	□3	\square_4		Construit
2 Tranquille		D 2	3	4	D 5	Bruyante
3 Accessible		2	□3	\square_4	D 5	Inaccessible
4 Beau		2	□3	4	D 5	Laid
5 Impressionnante			D 3	4	D 5	Terne

2. Qu'est-ce qui vous attire dans la région? _

	très insatisfaisant	insatisfaisant	ni l'un ni l'autre	satisfaisant	très satisfaisant
1 Le séjour			□3	4	D 5
2 Le site naturel			□3	4	D 5
4. Qu'avez-vous	prévu de faire	durant votre s	séjour? Coo	ber toutes les rép	onses valables
□1 Randonnée	heures	□6 Pêc	he		
□2 Balade à cheval		🗖 7 Raf	fting		
□3 Un tour en voi	ture	🗖 8 Se l	baigner dans	s une source c	haude
4 Ornithologie		🗖 🤉 Ob	server les pl	hénomènes gé	ologiques
☐5 Observer la véş	gétation	🗖 10 Au	itre:		
5. Désiriez-vous	visiter quelqu	e chose de pa	rticulier da	ns la région?	
🗖 1 Oui, quoi?				_ 2	Non
6. Combien de t	emps pensez-v	ous passer da	ins ce secte	ur?	
mir	L	heures	n	uit/nuits	
7. Êtes-vous dé	à venu(e) ici?	🗖 1 Oui,	combien de	fois?	□2 Non
 Serait-il à vot cette région? 	re avis souhait	able ou non d	'améliorer	la qualité de	s routes dar
		avis neutre			

du tou

9. Quelle importance accordez-vous aux facteurs suivants au cours de votre voyage dans la

région ?					
	sans		indifférent		grande importance
	importance	_	-	_	*
1 Sentiers balisés		D 2	□3	\square_4	D 5
2 Sentiers aménagés			3	\square_4	D 5
3 Ponts pour piétons		D 2	3	\square_4	D 5
4 Jouir de la tranquillité		D 2	3	4	D 5
5 Sentir la nature intacte		D 2	3	1 4	D 5
6 Places de picnic (tables et bancs)		D 2	3	4	D 5
7 Peu de touristes		D 2	3	4	D 5
8 Ne pas voir de traces de pneus en dehors des pistes	Π1	D 2	□3	D 4	□5
 Pouvoir marcher sans apercevoir de constructions (autres que des refuges) 	Π1	D 2	□3	D 4	□5
10 Ne pas voir les traces de voyageurs précédents		D 2	3	\square_4	D 5
11 Sites intéressants bien indiqués		D 2	3	\square_4	5
12 Campings bien équipés (toilettes, poubelles, etc.)		D 2	□3	□ 4	□5
13 Pouvoir camper n'importe où dans la région		D 2	3	4	D 5
14 Pouvoir camper loin des autres voyageurs		D 2	3	\square_4	D 5
15 Ne pas être dérangé par le trafic aérien		D 2	□3	D 4	□5

10. La notion de nature intacte/sauvage augmente-t-elle l'attrait des sites? □1 Oui □2 Non □0 Sans opinion

11. Avez-vous décidé de visiter cette région afin de ressentir la nature intacte/sauvage?

□1 Oui □2 Non □0 Sans opinion

12. Les structures dont vous savez qu'elles sont proches mais qui ne sont pas visibles influencent-elles votre expérience de la nature sauvage?

Pas du tout	Un tout petit peu	Dans une certaine mesure	Beaucoup	Enormément	Sans opinion						
	13. Lesquels des éléments suivants lesquels peuvent exister sans compromettre la notion de « nature sauvage »? <i>Cocher tontes les réponses valables</i>										
□ 2 Refi □ 3 Hôt □ 4 Rou □ 5 Pist □ 6 Clôi	ites es	ntagne	■ 8 Lignes éle ■ 9 Mâts d'an ■ 10 Centrales ■ 11 Lac de b: ■ 12 Éolienne ■ 13 Sentiers a ■ 14 Sentiers hommes et du	tenne : électriques urrage s uménagés formés suite au p	passage des						

18. Que pensez-vous des infrastructures suivantes dans la région?

	très	inapproprié	neutre	approprié	très	sans
	inapproprié	mappiopia	mente	approprie	approprié	opinion
1 Routes en terre non rehaussées	□ 1	D 2	□3	4	5	D 0
2 Routes en terre rehaussées	1	1 2	3	4	5	0
3 Routes goudronnées	1	D 2	□3	4	5	D 0
4 Routes carrossables toute l'année	1	D 2	□3	4	5	D 0
5 Ponts carrossables sur les cours d'ea	u 🗖 1	1 2	□3	4	5	D 0
6 Centrales hydroélectriques	1	D 2	□3	4	5	D 0
7 Centrales géothermiques	1	D 2	□3	4	5	D 0
8 Lac de barrages	D 1	1 2	3	4	5	D 0
9 Lignes électriques	1	1 2	□3	4	5	D 0
10 Éoliennes	1	1 2	□3	4	5	D 0
11 Hôtels	1	1 2	□3	4	5	D 0
12 Refuges de montagne	1	2	□3	4	5	0
13 Terrains de camping	1	2	□3	4	5	0
14 Boutiques/restaurants	1	2	□3	4	5	0
15 Stations-service	1	2	□3	4	5	0
16 Toilettes	1	D 2	□3	4	5	D 0
17 Vente d'Aliments cuits	1	D 2	□3	4	5	D 0
18 Centres d'accueil	□ 1	2	□3	4	5	D 0
19 Mâts d'antenne	□ 1	2	□3	4	5	D 0

19. Sexe 1 Féminin 2 Masculin 20. Âge:_____ ans

21. Nationalité:

22. Où passerez-vous la nuit prochaine?

23. Où avez-vous séjourné la nuit dernière? _

Avec qui voyagez	-vous ? Coc	her toutes les réponses valables	
□1 Seul		2 Famille	
□ 3 Partenaire/amis		Tour organisé	
□5 Collègues/club		Autres, qui?	
25. Comment voyage	z-vous? Co	cher toutes les réponses valables	
1 Voiture privée		2 Voiture de location	□3 Car/bus
4 Moto/ Véhicule tou	t terrain	□5 Vélo	□6 À pied
□7 Cheval		■8 Autres, comment ?	-
26. Votre profession?			
□1 Étudiant	🗖 2 Burea	u/secteur du tertiaire	
□3 Non qualifié(e)	🗖 4 Retrai	té	
□5 Cadre	□6 Form	ation professionnelle/techni	ique
□7 Personne au foyer	□8 Profe	ssion libérale (médecin/avo	cat/professeur etc.)
9 Autres:			

14. Est-ce que la présence de ces infrastructures à proximité de votre itinéraire influerait sure votre décision de visiter la région ?

D3

 \square_4

 \square_2

	tres négatif	négatif	effet	positif	positif	pas
1 Centrale hydraulique de Skátastaðir	D 1	D 2	□3	1 4	5	\square_0
2 Lac de barrage (Bugslón 26,3 km²)			□3	4	5	D 0
3 Centrale Hydraulique de Villinganes			□3	4	5	D 0
4 Lac de barrage (1,7 km ²)	1	D 2	□3	4	5	D 0
5 Lignes électriques			D 3	4	5	D 0

envie de visiter la région: _

16. Veuillez indiquer si votre attitude à propos des déclarations suivantes est positive ou négative:

	très négative	négative	neutre	positive	très positive
1 Extension de l'aménagement des centrales	□ 1		□3	□4	D 5
hydroélectriques dans les Hautes Terres 2 Extension de l'aménagement des centrales	D 1	D 2	□3	□ 4	D 5
hydroélectriques dans les Basses Terres 3 Centrales géothermiques dans les Hautes Terres	D 1	□2	□3	□4	D 5
4 Extension de l'aménagement des centrales géothermiques dans les Basses Terres	D 1	1 2	□3	□4	D 5
5 Éoliennes dans les Hautes Terres	D 1	D 2	□3	4	D 5
6 Éoliennes dans les Basses Terres	D 1	D 2	□3	4	5
7 Lac de barrages dans les Hautes Terres	1	1 2	3	4	5
8 Lac de barrages dans les Basses Terres	1	D 2	3	4	5
9 Nouvelles lignes électriques dans les Hautes Terres	1	2	□3	1 4	D 5
10 Nouvelles lignes électriques dans les Basses Terres	□ 1	2	□3	1 4	D 5
17. Que pensez-vous des déclarations suiv	vantes?				
	Pas d'accord du tout	Pas d'accord	Neutre	D'accord	Tout à fait d'accord
 Je voyage dans des lieux comme celui-ci pour oublier les tracas de la vie quotidienne et mettre mes soucis de côté 	D 1	D 2	□3	□4	□5
2 Je voyage dans des lieux comme celui-ci pour me reposer ("recharger mes batteries") 🗖 1		□3	□4	D 5

Appendix D: Questionnaire in German



TOURISTIK – UMFRAGE – SKAGAFJÖRÐUR

 Diese Umfrage ist Teil einer Studie über die Auswirkungen ron Wasserkenflandagen in Skatastabir (C und D) und Villingunes auf den Tourismus in diesem Gebiet (siehe Karte und Beschreihung). Die Studie wird von der Hechschule Hölar und der Universität Island durchgefischt und gebört que einem Rejerungsprocket names, J2Per Masterplan für Naturschutz, und Energienutzung". Das Antfüllen des Fragebogens dauert at. 10 – 15 Minuten. Vielen Dank für Ibre Teilnabmet!

 1. Wie gut beschreiben die folgenden Begriffe dieses Gebiet (siehe Karte)? schr etwas weder noch etwas schr

 1 Natürlich
 1
 2
 3
 4
 5
 Künstlich

 2 Solil
 1
 2
 3
 4
 5
 Laut

 2 Zupärelich
 1
 2
 3
 4
 5
 Laut

3 Zugänglich	1	2	3	4	D 5	Unzugänglich		
4 Schön		D 2	3	4	D 5	Hässlich		
5 Beeindruckend	□ 1	D 2	3	4	D 5	Unbeeindruckend		
2. Was finden Sie an diesem Ort interessant?								

3. Wie zufrieden oder unzuf	rieden sind Si	e mit der	n Folgen	den?	
	sehr unzufrieden	unzufr ieden	weder noch	zufrieden	sehr zufrieden
1. Ihr Aufenthalt in der Gegend		D 2	□3	\square_4	5
2. Die Natur in der Gegend		D 2	3	4	D 5
 Was haben Sie in dieser G Kreuzen Sie, wenn zutreffend, m 			nöchten	Sie macher	1?
1 Wandern Std.	🗖 6 F	ischen			
2 Reiten	🗖 7 F	liver raftin	ng		
3 Autofahren	D 8 I	n einer Q	uelle bade	n .	
4 Vögel beobachten				schauspiele	
5 Pflanzen erkunden	□ 10	Anderes:			
5. Sind Sie hierher gekomme besichtigen?	n um etwas E	Bestimmt	es zu tur	oder zu	
🗖 1 Falls ja, was?				🗖 2 Ne	ein
5. Wie lange wollen Sie in di	eser Gegend I	oleiben?			
Min.	Std.		_Nacht/	Nächte	
. Waren Sie bereits einmal	hier?	1 Ja, wie	oft?	(2 Nein
 Würden Sie es für wünsch Straßen in diesem Gebiet 			inschens	wert halter	, dass die
sehr wünschenswert wünschens	wert wede	er noch		:ht enswert	gar nicht wünschensw

9. Wie wichtig finden Sie das Folgende für Ihre Reise in dieses Gebiet?

	sehr unwichtig	unwichtig	neutral	wichtig	sehr wichtig
1 Markierte Wanderwege			D 3	D 4	
2 Angelegte Wanderwege		D 2	3	4	D 5
3 Fußgängerbrücken		2	3	4	5
4 Ruhe und Stille			3	1 4	D 5
5 Unberührte Natur zu erleben		D 2	3	4	D 5
6 Picknick-Stellen (Tische und Bänke)		D 2	3	4	D 5
7 Wenige andere Besucher		2	3	4	5
8 Keine Fahrspuren außerhalb der Wege		D 2	3	4	D 5
9 Wandern, ohne auf Bauwerke zu stoßen (außer Berghütten)	D 1	D 2	□3	□4	D 5
10 Keine Hinweise auf andere Besucher			3	4	D 5
11 Kennzeichnung interessanter Orte			3	4	D 5
12 Organisierte Zeltplätze (Toiletten, Papierkörbe etc.)	D 1	D 2	□3	□4	D 5
13 Überall Möglichkeit zum Zelten zu haben		2	3	4	5
14 Zelten, ohne Nachbarn zu haben			□3	□4	D 5
15 Nicht vom Fluglärm gestört zu werden			□3	4	D 5

10. Finden Sie, dass unberührte Natur/Wildnis zu der Attraktion dieses Gebiets gehört?

□1 Ja □2 Nein □0 Keine Meinung

11. Haben Sie diese Gegend besucht, um unberührte Natur/Wildnis zu erleben?

12. Wirken sich nahegelegene Bauwerke, die nicht sichtbar sind, von deren Präsenz Sie jedoch wissen, auf die Erfahrung in der Wildnis aus?								
überhaupt nicht	wenig	einigermaßen	viel	schr viel	keine Meinung			
	D 2	□3	\square_4	D 5	D 0			

^{13.} Was darf in einer Gegend vorhanden sein, ohne dass sie das Attribut unberührte Weite verliert? Krenzen Sie, wenn zutreffend, mehr als eine Antwort an

□1 Nichts	■8 Stromleitungen
2 Berghütten	9 Antennenmasten
□ 3 Hotels	□10 Kraftwerke
□4 Stra en	11 Stauseen
□5 Fahrpisten	12 Windkraftanlagen
□6 Zäune	□ 13 Angelegte Wanderwege
7 Dienstleitungszentren	14 Pfade durch Wanderer oder Nutztiere

14. Hätte die folgende Energieinfrastruktur in der Nähe Ihrer Reiseroute Einfluss auf Ihre Entscheidung, das Gebiet zu besuchen?

□3

 \square_4

D2

 \Box_1

auf fille Entscheldung, das Geblet	auf fille Entscheldung, das Gebiet zu besuchen?									
	sehr negativ	eher negativ	kein Einfluss	eher positiv	sehr positiv	keine Meinung				
1 Wasserkraftanlage von Skatastaðir	D 1	D 2	□3	1 4	D 5	D 0				
2 Der Stausee Bugslón (26,3 km²)	D 1	D 2	□3	\square_4	D 5	D 0				
3 Wasserkraftanlage von Villinganes	D 1	D 2	□3	\square_4	D 5	D 0				
4 Ein Stausee (1,7 km ²)	D 1	D 2	D 3	1 4	D 5	D 0				
5 Stromleitungen	D 1	D 2	□3	\square_4	D 5	D 0				

 Bitte beschreiben Sie, inwieweit die zuvor genannten Bauwerke Ihren Wunsch, das Gebiet zu besuchen, beeinflussen w
ürden? ______

16	Bitte geben Sie an, wie positiv oder negativ Ihre Einstellung gegenüber folgenden
10.	bitte geben sie an, wie positiv oder negativ nite Einstenung gegenüber folgenden
	Projekten ist

r tojekten ist.					
	schr negativ	negativ	weder noch	positiv	sehr positiv
1 Weiterentwicklung der Wasserkraftanlagen			3		5
im Hochland					
2 Weiterentwicklung der Wasserkraftanlagen im Tiefland		D 2	□3	4	D 5
3 Geothermiekraftwerke im Hochland			3	4	D 5
4 Weiterentwicklung der		□2		\square_4	Π.
Geothermiekraftwerke im Tiefland	ш.				
5 Windkraftanlagen im Hochland		D 2	3	4	
6 Windkraftanlagen im Tiefland		D 2	3	\square_4	D 5
7 Stauseen im Hochland	1	1 2	3	4	D 5
8 Stauseen im Tiefland	□ 1	1 2	3	4	D 5
9 Weiterausbau der Stromleitungen im Hochland			□3	□4	□5
10 Weiterausbau der Stromleitungen im Tiefland		D 2	□3	□4	D 5
17. Inwieweit stimmen Sie den folgenden	Aussagen	zu?			
	stimme	stimme		stimme	stimme
	überhaupt	teilweise		teilweise	voll und
	nicht zu	nicht zu	neutral	zu	ganz zu
1 Ich gehe an Orte wie diesen, um dem	_	_	_	_	_
Alltag zu entfliehen und meine Sorgen für einen Moment zu vergessen		D 2	D 3	□ 4	D 5
2 Ich gehe an Orte wie diesen, um zur Ruhe zu kommen und mich zu erholen ("meine Energie aufzutanken")	Π1	1 2	□3	□4	D 5

18. Was halten Sie von dem Erstellen folgender Anlagen in diesem Gebiet?

						ohne
	sehr dagegen	dagegen	neutral	dafur	sehr dafur	Meinung
1 Schotterwege			D 3	4	D 5	
2 Erhöhte Schotterwe	ge 🗖 1		3	4	5	D 0
3 Asphaltierte Straßen			□3	4	5	
4 Ganzjahresstraßen			□3	4	5	
5 Autobrücken			□3	4	5	
6 Wasserkraftanlagen	D 1		3	4	5	D 0
7 Geothermiekraftwer	ke 🗖 1		3	4	5	
8 Stauseen			3	4	5	
9 Stromleitungen	D 1		3	4	5	D 0
10 Windkraftanlagen	D 1		3	4	5	
11 Hotels			3	4	5	
12 Berghütten			3	4	5	
13 Zeltplätze			3	4	5	
14 Geschäfte/Restaur	ants 🗖 1	2	□3	4	5	
15 Tankstellen			3	4	5	
16 Toiletten			3	4	5	
17 Gekochtes Essen			3	4	5	
18 Touristenzentren		2	□3	4	5	
19 Funkmasten	D 1		□3	4	5	
19. Geschlecht	1 Weibl.	🗖 2 Männl.	20.	Alter:	Jahre	

^{21.} Woher kommen Sie?

^{22.} wo werden sie neute ubernaenten. _____

23. Wo haben Sie gestern übernachtet?					
24. Mit wem reisen Sie? Kreuzen Sie, wenn zutreffend, mehr als eine Antwort an					
□1 Ich reise allein □	Mit meiner Familie				
3 Mit Verwandten/ Freunden 4 Mit einer organisierten Reisegruppe 5 Mit Arbeits-/Klubkollegen 6 Mit anderen, mit wem?					
25. Wie reisen Sie? Kreuzen Sie, wenn zutreffend, mehr als eine Antwort an					
□1 Mit dem eigenen Auto □2 I	Mit einem Mietwagen 3 Mit einem Reisebus				
4 Motorrad/ Allradfahrzeug 5 1	Mit dem Fahrrad 🛛 🗖 6 Zu Fuß				
□7 Zu Pferde □8 A	🗖 8 Auf andere Art, wie?				
26. Was ist Ihr Berufsbereich?					
□1 Student □2 Büro- und Dienstleistungssektor □3 Ungelernter Beruf					
□4 Ruhestand □5 Geschäftsführung	□6 Technische Fachkraft				
□7 Hausfrau □8 Experte (Arzt, Rechtsanwalt, Architekt, Lehrer, etc.)					
🗖 a Andora bitta addišnost					

^{22.} Wo werden Sie heute übernachten? _



Appendix E: Map of the region with Icelandic text



Appendix F: Map of the region with English text

Appendix G: Interview Schedule in Icelandic

Viðtalsrammi fyrir ferðaþjónustuaðila v. Skatastaðavirkjunar og Villinganesvirkjunar í Skagafirði

(Vera með kort sem hægt er að teikna inná. Jafnvel annað kort sem sýnir framkvæmdirnar).

Starfsemi á svæðinu:

- Hvaða starfsemi eruð þið með á þessu svæði?
- Hvað eru margir í ferðunum, í einu, á ári? Fjöldatala mikilvæg
- Hvað er gert, hvað er skoðað?
- Hvers konar ferðamenn, hverjar eru þeirra kröfur?
- Hvaða staðir eru skoðaðir, hverjir þeirra eru mikilvægastir, hafa mest aðdráttarafl fyrir ferðamenn?
- Skrifa inn á kortin hvaða leiðir þeir fara o.s.frv.
- Hvaða sérstöðu hefur svæðið sem ferðamannastaður?
- Hvernig þykir þér aðgengi að svæðinu vera?
 - o Mætti það vera betra?

Framtíðin

- Hvaða framtíðarmöguleika sérð þú á svæðinu?
- Hvernig sérðu fyrir þér að ferðaþjónusta á svæðinu þróist á næstu árum
- Er svæðið vannýtt að hálfu ferðaþjónustunnar? Hvaða tækifæri eru vannýtt?
- Gætu fleiri ferðamenn komið á svæðið? Þolir svæðið fleiri ferðamenn? Af hverju?
- Hvers konar mannvirki eru viðeigandi þarna?
- Hverjar telur þú vera óskir ferðamenna sem munu koma hingað í framtíðinni?
 - Aðgengi?Innviðir (gisting, veitingar, afþreying)?

Fyrirhugaðar virkjanir (Skatastaðavirkjun/Villinganesvirkjun)

- Hefur þú kynnt þér virkjanahugmyndirnar (hægt að skýra eitthvað með kortum ef ekki).
- Hver er skoðun þín á virkjununum (hverrar fyrir sig, <u>Skatastaðavirkjun</u> og Villinganesvirkjun)
- Raflínur
- Hvaða áhrif myndi virkjunin hafa á ferðaþjónustu (þína eigin/eigið fyrirtæki? annarra? og upplifunina sem verið er að bjóða upp á? Ímynd Skagafjarðar)
- Mundu aðrir kostir til orkuframleiðslu (en þessar virkjanir) koma til greina hér á svæðinu, að þínu mati?

Framkvæmdir – eða ekki

- Hvernig telur þú að ferðamennska myndi þróast á svæðinu ef engin virkjun yrði reist?
- Hvernig telur þú að ferðamennska myndi þróast á svæðinu með virkjun?
- Hvor kosturinn hugnast þér betur rökstyðja svarið?
- Er eitthvað sem þú vilt bæta við?

Undirstrika nafnleysi (útskýra).

Spyrja hvort megi koma til baka með <u>spurningarlista</u> fyrir ferðamenn

Appendix H: Interview Schedule in English

Interview frame for tourism operators regarding power plant proposals at Skatastaðir and Villinganes in Skagafjorður

Business / activity in the area:

- What kind of business do you run in the area?
- How many visitors (in your tours, at you place at each time/ in a year)?
- What do they do while they are here?
- What kind of tourists do you get and what are their demands?
- What places are they looking at, what are the most important ones, what is the attraction for travellers?
- Show on a map where they go
- What makes this place special as a destination for travellers?
- How is the accessibility of the area?
 - o should it be better?

Future

- What possibilities do you see (in the area) for the future?
- How do you see the tourism industry developing in the next years?
- Could the area be used more by the tourism industry? How?
- Could more travellers come into the area? Can the area tolerate more travellers? Why?
- What kind of infrastructure is suitable in this area?
- What do you think future travellers would prefer to have here regarding access and infrastructure (accommodation, restaurants/catering, activities?)

The power plant proposals

- Are you familiar with the power plant proposals? (explain shortly if they are not)
- What is your opinion on each of them?
- Would the power plants have impact on you/your company? If yes, how?
- What impact would these power plants have on tourism? (your own business, others, travellers experience)?

No power plant

- How do you think tourism will develop with the power plants?
- How do you think tourism will develop without the power plants?
- What do you prefer why, argue for it?

Appendix I: Letter of consent in Icelandic

Háskólinn á Hólum Ferðamáladeild



Rannsókn á áhrifum fyrirhugaðra virkjana við Villinganes og Skatastaði í Skagafirði á ferðamennsku

Rannsókn þessi, sem fram fer sumarið 2015, er á vegum Háskólans á Hólum og unnin fyrir Umhverfisráðuneyti. Rannsóknin í Skagafirði er hluti af stærri rannsókn, sem fram fer á landsvísu og stýrt af Háskóla Íslands.

Tilgangur rannsóknarinnar er að kanna viðhorf ferðaþjónustuaðila til fyrirhugaðra vatnsvirkjana í Skagafirði, við Skatastaði og Villinganes. Upplýsingarnar verða nýttar til að meta áhrif slíkra framkvæmda á ferðamennsku á svæðinu.

Framkvæmd rannsóknarinnar er í höndum rannsakenda við Háskólann á Hólum sem munu heimsækja þig og eiga við þig viðtal. Í viðtalinu verður þú beðin að lýsa fyrirtækinu og viðhorfum þínum til virkjanakosta í Skagafirði.

Viðtalið verður tekið upp, en nafnleyndrar gætt eins og kostur er. Aðeins rannsakendur og verkefnisstjóri verkefnisins munu hafa aðgang að upptökunum.

Upplýsingar úr viðtalinu verða nýttar í skýrslu til Umhverfisráðuneytisins og í fræðilegar greinar skrifaðar af rannsakendum við Háskólann á Hólum og Háskóla Íslands.

Þátttaka í rannsókninni er frjáls og þú getur hætt þátttöku í verkefninu hvenær sem er á rannsóknartímanum.

Nánari upplýsingar um verkefnið veitir Dr. Leah Burns, deildarstjóri ferðamáladeildar Háskólans á Hólum í síma 8630308 eða <u>leah@holar.is</u>.

Bestu þakkir fyrir þátttökuna 😊

Upplýst samþykki:

Ég staðfesti hér með að ég skil upplýsingarnar hér að ofan og samþykki að taka þátt í rannsókninni:

Dagsetning:

Staður:

Undirskrift þátttakanda:

Appendix J: Letter of consent in English



Háskólinn á Hólum Ferdamáladeild

Study about the impact of proposed power plants at Skatastaðir and Villinganes on tourism

This study is conducted by Hólar University College for the Icelandic Ministry of Environment during summer 2015. The study in Skagafjorður is part of a larger research project conducted on a national basis managed by the University of Iceland. The purpose of the study in Skagafjorður is to examine tourist operators perceptions of the proposals for hydroelectric power generation at Skatastaðir and Villinganes. The information will be used to evaluate the impact of proposed power plants in the region.

The study is conducted by researchers at Hólar University College who will visit you and conduct an interview. During the interview you will be asked to describe your tourism business and your opinion of the power plant proposals

The conversation will be recorded but every effort will be made to ensure the interviewee remains anonymous. Only investigators and the project manager of the study will have access to the recording.

The information will be used to prepare a report for the Ministry of the Environment, and in academic publications by researchers at Hólar University College and the University of Iceland.

Your participation is voluntary and you can chose to discontinue at any time during the research process.

For further information about the project please contact Dr Leah Burns, Head of the Tourism Department at Hólar University College, on 8630308 or leah@holar.is. Thank you for your participation ©

Informed consent:

I confirm that I understand the above information and agree to participate in the study:

Date:

Location:

Signature of participant: