

DEMAND FOR SUSTAINABLE AVIATION IN THE NORTHERN NORDICS

Short version

Interreg



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Image: ZeroAvia



Image: Beta Technologies

Introduction

Sustainability and the transition away from fossil fuels is driving the development of new technologies in the aviation industry. Aviation propelled by electricity through either batteries or hydrogen fuel cells has sparked a new interest in short range regional aviation. These technologies have been proven in test flights, and several different aircraft are set to enter the market in the coming years. The combination of low-to-zero operational emissions and the small-body aircraft segment of the first generation electric aircraft indicates that they could become a relevant regional transport mode. In places, where no alternative transport modes exist (for instance, over the Kvarken strait between Sweden and Finland), time savings could be significant.

Despite the apparent time savings, regional aviation performed by smaller airplanes is not commercially available today in Sweden and Finland and the few regional routes that exist are publicly funded. The question is if sustainable regional aviation can make a difference. Would people use regional air travel if it was available? If so, to which destinations, how often and at what price?

A demand study of sustainable aviation in the Northern Nordics

This report summarises the findings in a study, which was made for the FAIR 2 project. The project is led by the Kvarken Council EGTC and is co-funded by Interreg Aurora. FAIR 2 aims to increase the understanding of demand for sustainable regional aviation in the Northern Nordics. The demand study was conducted by the consultants Kuudes and DAIN Studios, and this executive summary was compiled by Tyréns Sverige AB.

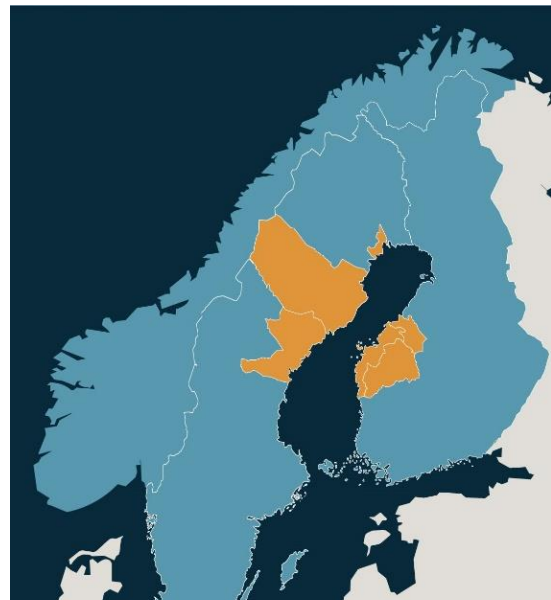
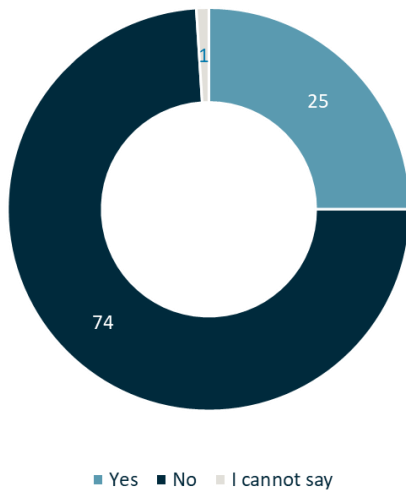


Figure 1 The study area highlighted with orange colour in the map.

guest night statistics that also indicates that Finnish people visit the Swedish part of the region more frequently than vice versa.

Have you travelled from Sweden to Finland in the last year? (%)



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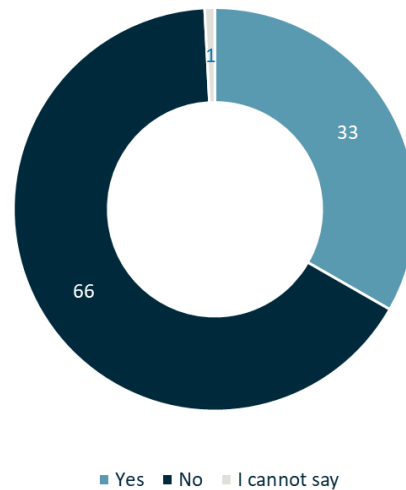


Figure 3 A quarter of Swedish respondents had travelled to Finland in the last year (left) and a third of Finnish respondents had travelled to Sweden in the last year (right).

Where did the cross-border travelling occur?

- The most common destination in Sweden for Finnish respondents was Västerbotten and in particular Umeå. Of those who had visited Umeå, **65%** stated had visited once a year or more often, while only 4% had visited once a month or more often.
- The Finnish respondents who had visited Norrbotten had most frequently visited Haparanda.
- Most Finnish respondents stated that they had not visited Västernorrland in the last year.
- Ostrobothnia was the sub-region visited most frequently by Swedes. Of the Swedes who visited Vaasa, **57%** had visited once a year or more often, while only 4% had visited once a month or more often.
- Most Swedish respondents had not visited Central Ostrobothnia or South Ostrobothnia in the last year.

The patterns described in the survey are also supported by guest night statistics.

Umeå stands out as the top destination in the Swedish part of the studied region for Finnish guests, followed by Luleå and Örnsköldsvik. The Swedish guest nights in the Finnish part of the region are concentrated in Ostrobothnia while the numbers for South Ostrobothnia and Central Ostrobothnia

are significantly lower. Vaasa stands out as the top destination both in guest night statistics and in the results from the panel survey.

In the guest night statistics, a significant seasonal difference could be seen; the summer months June-August drew more travellers than the rest of the year combined.

The only cross-border passenger service connecting cities in the region today is the Wasaline ferry between Umeå and Vaasa. In 2023, the route had 280 000 passengers.

Attitudes towards sustainable aviation

The population of the region is generally positive towards new technologies for sustainable aviation. Around **60%** of respondents said they were quite positive or very positive.

When asked about their prime motivations to use sustainable aviation flights in the future, the three most common answers were that it needs to be **more affordable, have lower emissions and be faster** than other travel options.

In the survey, deterring factors were also analysed. The three most common answers were that they did not experience any obstacles, that they did not see the need for sustainable regional flights or that they did not perceive it as safe.

The business sector generally expressed positive attitudes towards sustainable aviation technologies. Especially the Swedish companies emphasised sustainability as a key issue while Finnish companies identified sustainability as an increasingly important issue.

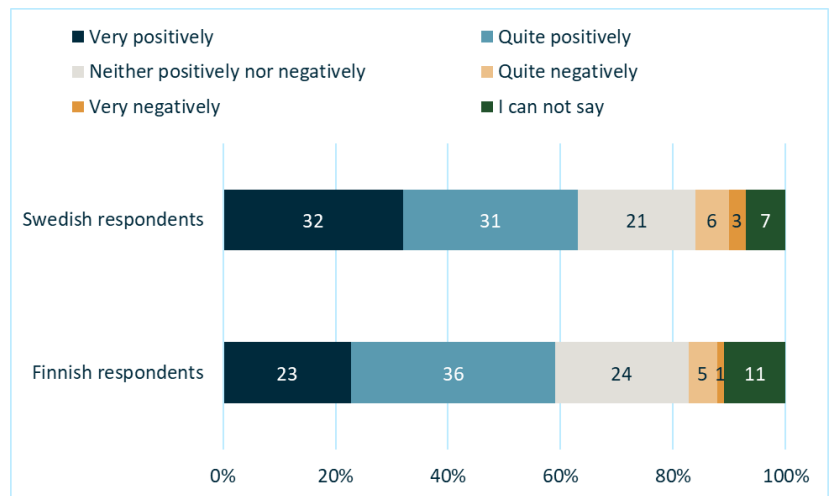


Figure 4 How do you feel about the new technologies of sustainable regional aviation (electric and hydrogen-powered aviation)?

Demand for sustainable regional aviation

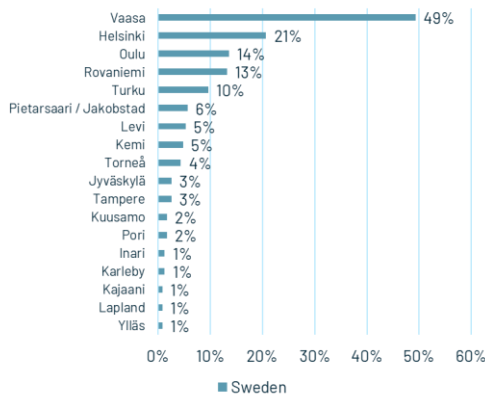
Since regional flight routes are not available in the region today, and since new sustainable aviation technologies are not available, it can be quite difficult for respondents to imagine how it might affect their travelling. In the study, different scenarios were visualised to make the possibilities easier to grasp. Based on the panel survey, the demand could be estimated in terms of the most interesting destinations, the respondents' perceptions of what they would be willing to pay for such air services and how it would affect their frequency of travelling within the region.

Destinations

About **50%** of respondents said that if sustainable regional aviation was possible, they would like to travel between Sweden and Finland. The top destination in Sweden for Finnish respondents was

Umeå and the top destination in Finland for Swedish respondents was Vaasa (Figure 5). Generally, people tend to want to travel to bigger cities and known travel destinations.

Swedish respondents (N=227): Which city would you travel to in Central and Northern Finland? Name no more than five interesting destinations. (open question)



Finnish respondents (N=274): Which city would you travel to in Northern Sweden? Name no more than five interesting destinations. (open question)

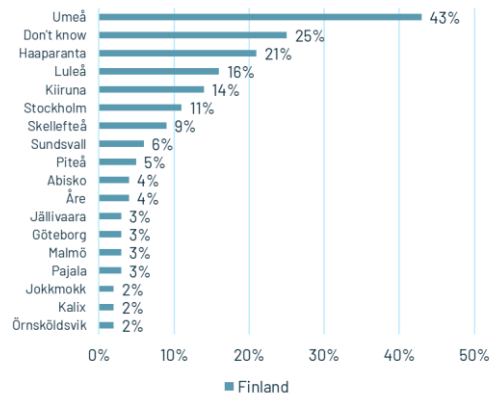


Figure 5 Top destinations that Swedish (left) and Finnish (right) respondents would like to travel to in the other country given that sustainable regional aviation options were available.

The survey respondents in both the Swedish and Finnish parts of the region also showed interest in travelling to Norway. Swedish respondents seemed more interested in domestic regional travel routes than Finnish respondents, likely due to the longer distances in Sweden in the studied geography. Preferred domestic destinations within Sweden were generally the bigger cities along the coast. Among Finnish respondents, the preferred domestic destinations were, apart from Vaasa, mostly located outside of the region (e.g. Helsinki, Oulu, Rovaniemi, Turku etc.).

One aspect affecting the demand for cross-border travelling is the cultural connection between sub-regions. Both the interviews and the survey responses indicate that the Swedish-speaking parts of western Finland are more closely tied with the Swedish part of the region and more open to cross-border travelling if sustainable regional aviation was available.

In the 2025 business survey, companies were asked whether their business travelling would be affected by the possibility to travel between the Swedish and the Finnish parts of the region with sustainable aviation if the travel time was 30 minutes and had a cost of 120-150 €. With these premises, **34%** stated that their travelling would be affected.

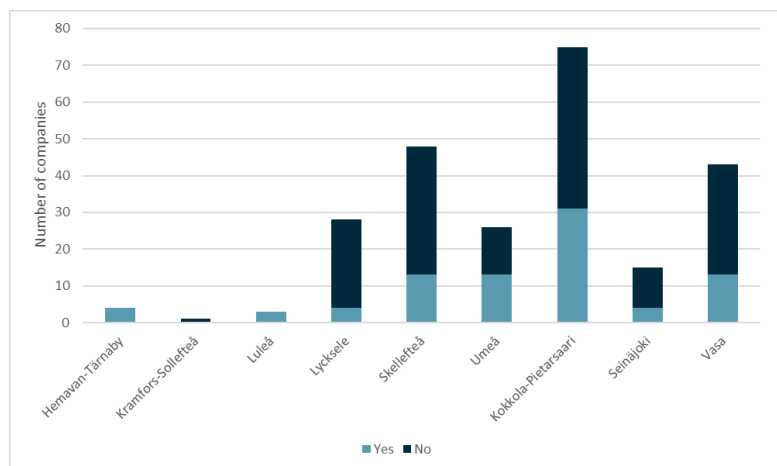


Figure 6 Responses per subregion to the question "Would the travelling of your company be affected if it was possible to fly with emission-free regional flights in the Kvarken region? (A trip across the Gulf of Bothnia/Kvarken could have a travel time of about 30 minutes at a cost of approximately €120-150 one way.)"

Among the companies that said their travelling would be affected, the most common destinations of interest were:

- Kokkola → Skellefteå (12/31 companies) and Umeå (12/31 companies)
- Vaasa → Umeå (5/13 companies) and Sundsvall (3/13 companies)
- Skellefteå → Kokkola (6/13 companies) and Vaasa (3/13 companies)
- Umeå → Vaasa (5/13 companies) and Kokkola (2/13 companies)

Price perceptions

How much would people and business actors be willing to pay for travelling regional routes with sustainable aviation? We explored different scenarios, where the respondents were presented with three routes and their current door-to-door travel times and prices. These routes were compared with quicker sustainable aviation alternatives. The respondents were asked to state the maximum price they would be willing to pay for the sustainable travel alternative. Scenario 1 represented a domestic trip within two cities in the region, while scenario 2 and scenario 3 represented a cross-border trip between Sweden and Finland.

The results indicate that respondents generally were **willing to pay more** for sustainable regional aviation and faster travel times. In one scenario, they were willing to pay less, though, which could indicate that they thought the given price was too high for that type of trip to begin with.

For a cross-border trip, respondents were willing to pay approximately between **80-120 € or 930-1 380 kr**, and for a domestic trip 100 € or 890 kr.

	SCENARIO 1 Domestic trip		SCENARIO 2 Cross-border trip		SCENARIO 3 Cross-border trip	
	Travel time (h)	Price	Travel time (h)	Price	Travel time (h)	Price
CURRENT OPTION	4	65 € 750 kr	8	130 € 1 500 kr	7	60 € 700 kr
FUTURE OPTION	2,5	98 € 885 kr	2	116 € 1 381 kr	1	80 € 928 kr

Figure 7 Price scenarios tested in the panel survey. The prices for the current option were given in the example and the respondents' average stated price for each scenario is indicated in italic under 'future option'. Finnish respondents answered in euro while Swedish respondents answered in kronor.

Business actors were less price-sensitive than the individual respondents of the panel survey. On average, in these scenarios, **business actors were willing to pay almost double the current price** to fly sustainably. Many found small taxi planes too expensive, while others thought the prices were reasonable and used this service already today.

Travel frequency

The respondents were asked how frequently they would travel given the scenarios described above.

For the domestic trip, **13%** of Finnish respondents and **18%** of Swedish respondents said they would travel **once a month or more often** with sustainable regional aviation.

When it comes to cross-border trips, the stated travel frequency was remarkably high and significantly higher than what could be seen in the current travel patterns. Depending on the scenario, responses indicated that **9-15%** would travel to the other country once a month or more often. However, it is important to note that the survey scenarios were not specific to certain routes, so caution is advised when drawing conclusions on these findings.

As a way of seeing how travel frequency would be affected by price, respondents were also asked about their potential travel habits given a 30% price reduction. In all three scenarios, the share of people who said they would travel once a month or more often increased by about **1.5 to 2 times**.

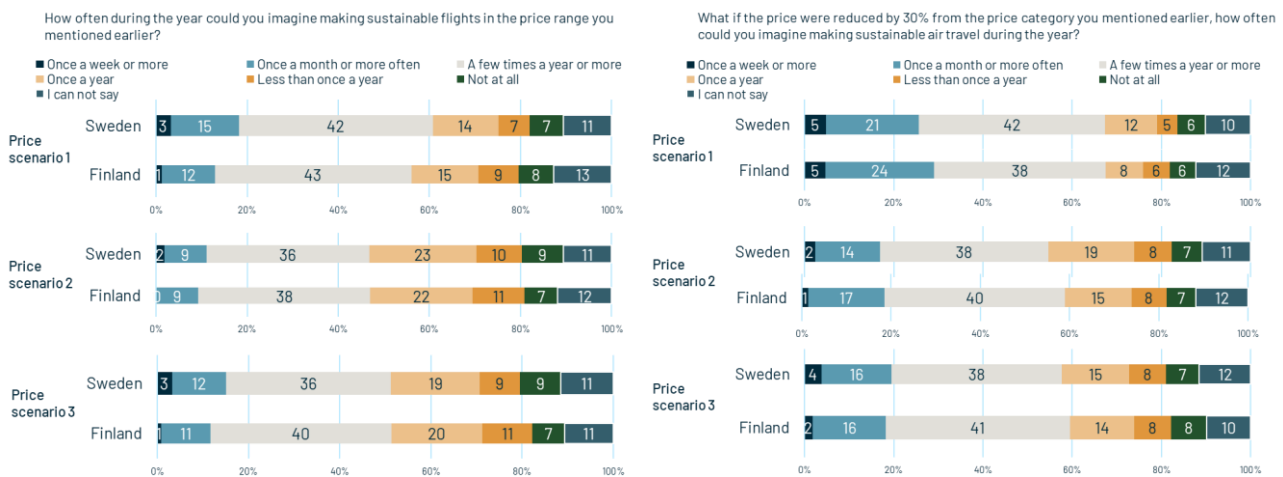


Figure 8 Stated travel frequency in the three different scenarios based on the respondents' stated price (left) and a 30% reduction of the price (right).

Key insights and recommendations

A majority of the companies interviewed and the individuals responding to the panel survey expressed **positive attitudes towards sustainable regional aviation**. New technology that reduces emissions and saves time is welcomed. Positive effects, such as a decreased ecological footprint, improved quality of life through increased accessibility and development opportunities for the region, were mentioned in the answers. However, some people also expressed scepticism towards the realism of the new technology, raised safety issues and questioned the necessity of new regional aviation routes.

Most of the trips carried out in the region are local and domestic and do not require airport-to-airport aviation. Domestic regional aviation trips need to provide time-savings that are competitive compared to cars and trains. As identified in the previous FAIR project, the biggest potential for time-saving is found in flying across the Kvarken strait and the Gulf of Bothnia, where there are few competing alternatives and travel distances are within the range limitations of sustainable aviation technologies.

The demand for cross-border travelling differs to a great extent in the region. The strongest connections could be found between the Västerbotten coast and the Swedish-speaking parts of western Finland (i.e. the Ostrobothnia region). Especially Umeå and Vaasa stand out as top destinations when people stated where they would like to travel if regional sustainable aviation was available in the region. The ferry connection between Umeå and Vaasa has contributed to cross-border integration over time. Among the surveyed companies, the **strongest future demand seems to be between Skellefteå-Kokkola and Umeå-Vaasa.**

Cross-border travel demand between, for example, Västernorrland and South Ostrobothnia is significantly lower. This could be due to a combination of factors, such as a lack of knowledge about the other region, a lack of imminent reasons to travel and inconvenient or non-existing travel alternatives.

Private individuals indicated they would, on average, be **willing to pay around 100 € / 1 000 kr** for a cross-border sustainable regional aviation trip, while **companies would be willing to pay around 1.5 to 2 times more** than the current price.

People seemed to be willing to **travel much more frequently with sustainable regional aviation** than with current travel options. Since the option is not available today, it is hard to say if this is overstated demand or if the time-savings and other aspects of sustainable regional aviation truly would mean that the travelling would increase that much in the region.

All in all, there seems to be potential demand for new sustainable flight options in the region. For most routes, the demand will probably not be strong enough for the routes to be commercially viable, at least not from the get-go. It is likely that public support would be necessary for supporting most routes in the region.

If regional actors want to establish new routes for passenger traffic, they ought to initiate dialogue with operators about the strongest potential routes (with the biggest time-savings and demand base) to explore their commercial potential, while also exploring possible models for public support of air traffic in the region.

Demand is not static, though, and can be affected. Continued cross-border cooperation and marketing of the region can make inhabitants and companies in different parts of the region more aware of the opportunities in other parts of the region, which in the longer run could induce new demand for regional travelling.