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Desired or contested futures? Competing discourse-coalitions for sustainable aviation in Sweden

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ABSTRACT



The future of aviation is a growing subject of debate, with different actors promoting diverse discourses on climate mitigation and sustainability. We employ argumentative discourse analysis to explore competing discourses around the future of aviation in Sweden, focusing empirically on the aviation industry and the flight-free movement. Drawing on thirty interviews, one workshop, and forty-three documents, we show how these actor groups represent two discourse-coalitions that articulate opposing discourses on the future of aviation: 'Green flying' and 'Staying on the ground'. Following a logic of (techno)solutionism, Green flying anticipates aviation to maintain a dominant role in society and assures that technological progress will overcome the sector's climate concerns in the future. Meanwhile, Staying on the ground follows a logic of prefiguration to demonstrate the desirability of an alternative and less aeromobile future, with actors embodying new norms and practices around avoiding flying in the present. The paper contributes to research in critical policy studies by demonstrating how actors with conflicting interests, values, and worldviews imagine and engage with futures differently in their attempts to shape transition pathways and policy-making in the present.

KEYWORDS

Climate change; sustainability transitions; futures; aeromobility; storylines

1. Introduction

Assumptions about the future are implicit within climate targets such as the Paris Agreement – a commitment to act to limit global temperature rise to well below 2°C and pursue efforts to limit it to 1.5°C (United Nations 2015). Such assumptions, including expectations about how the future should unfold and ways to get there, are influential in the present, informing climate policy and guiding orientations for action across all sectors of society (Hajer and Pelzer 2018; Mangnus et al. 2021). The ways in which the future is constructed, represented, and justified can both open up and close down the space and range of action (Hajer and Pelzer 2018; Knappe et al. 2019), thus shaping not only what is perceived as desirable, but also what is possible in terms of future worlds

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(Mangnus et al. 2021). While some representations of the future are dominant in the sense of guiding decision- and policy-making, alternative futures may challenge their dominance if succeeding in mobilizing actors around new pathways (Hajer and Pelzer 2018). Hence, engagement with the future in the present, or more exactly *futures*,¹ is a political act that ‘always entails a certain distribution of power and resources – and presupposes a form of ideological power’ (Mangnus et al. 2021, 7).

There are various approaches to studying climate futures. One important strand of futures-oriented research is scenario analysis (Muiderman et al. 2020), an approach commonly used to anticipate climate futures and assess different mitigation pathways (e.g. Kok et al. 2011; Mason-D’Croz et al. 2016). Scenarios of climate futures are generally assumed to provide policy-relevant insights and are increasingly taken up in the reports of the Intergovernmental Panel on Climate Change (van Beek et al. 2020). Yet climate scenarios tend to be based on a rather narrow set of assumptions which might close down alternative mitigation strategies (Braunreiter et al. 2021). Researchers have therefore called for critical investigation of the social and political dimensions and implications of different anticipatory approaches (Muiderman et al. 2020) and stressed the need to imagine ‘more pluralistic, diverse futures’ (Vervoort and Gupta 2018, 109).

Critical futures research pays specific attention to the social and political processes through which futures are produced and performed (Mangnus et al. 2021). Previous research has, for example, used scholarship on imaginaries to explore how visions of the future shape responses to, and policy around, climate change (Levy and Spicer 2013). The performativity of imagined climate futures is further explored in work on ‘techniques of futuring’, an analytical tool for examining the practices through which futures become enacted in the present (Hajer and Pelzer 2018; Oomen, Hoffman, and Hajer 2021). By critically interrogating the assumptions, values, and worldviews that shape how people anticipate and act upon the future (Mangnus et al. 2021), critical futures research highlights the importance of imagining and analyzing alternative climate futures beyond those captured by scenarios and models (Hajer and Pelzer 2018; Muiderman et al. 2020).

One sector where the future is a growing subject of debate is aviation, with different actors promoting diverse discourses on climate mitigation and sustainability (Köves and Bajmócy 2022). Previous research has shown that dominant discourses construct the aviation sector as societally critical (Gössling and Peeters 2007; Howarth and Griggs 2006) and present continued growth of air travel demand as inevitable (Griggs and Howarth 2023). The climate impact from air travel is not neglected in these discourses, but is argued to be marginal compared to other sectors (Gössling and Peeters 2007), and is assumed to be overcome by low-carbon technologies (Christley, Karakaya, and Urban 2024; Peeters et al. 2016). However, recent work has highlighted the emergence of alternative discourses that instead promote solutions focused on reducing air travel demand, such as changes in travel behaviors (Kreil 2021; Ullström, Stripple, and Nicholas 2023). While a few studies have analyzed dominant pro-growth aviation discourses vis-à-vis alternative discourses on demand reductions (e.g. Griggs and Howarth 2023; Ullström, Stripple, and Nicholas 2023), more research is needed to understand the argumentative struggles and conflicts across such discourses and their role in shaping the future of aviation.

In this paper, we examine competing discourses around the future of aviation in Sweden, where opposing ideas on the role of aviation in a sustainable society have

proliferated during the past decade. On the one hand, the aviation industry highlights the sector's role in providing jobs, economic growth, and connectivity to argue for the importance of air travel now and in the future (Swedish Air Transport Society 2018). While acknowledging the need to mitigate aviation's climate impact, and setting up a target to become fossil-free by 2045 (Swedish Air Transport Society 2018), their climate mitigation work is based on uncertain technological innovations in an early stage of development (Christley, Karakaya, and Urban 2024). On the other hand, arguments about the need to reduce flying have gained traction in public debate (Ullström, Stripple, and Nicholas 2023). Notably, Sweden is the birthplace of 'flight shame', a phenomena which has spread globally on social media (Becken et al. 2021) and given rise to a new environmental discourse of eco-shaming (Vandenhole, Bauler, and Block 2024). The concept of flight shame was coined in response to the rising problematization of air travel that started at the end of 2016, when the 'flight-free movement' began to form as an informal and diverse group of actors pledging to avoid flying because of climate concern (Ullström 2024). This recent development in Sweden shows that the discourses surrounding aviation are fragmented and in conflict as there are many ideas, beliefs, and interests involved from a multitude of actors across society as to how the future should unfold.

Drawing on argumentative discourse analysis (Hajer 1995), we analyze the storylines through which futures of aviation are represented in Sweden by actors in the aviation industry and the flight-free movement, as well as the contestation and conflicts around these storylines. We take a critical approach to the study of futures, based on the assumption that representations about futures have implications for policy choices in the present (Mangnus et al. 2021; Muiderman et al. 2020). Our empirical material consists of 30 interviews with actors in the aviation industry and the flight-free movement, one workshop with industry actors, and documentary material such as reports, policy documents, and media articles. We show that these actor groups represent two discourse-coalitions that articulate opposing discourses on the future of aviation, 'Green flying' and 'Staying on the ground',² and highlight how they draw on differing logics to shape the future of aviation, one of (techno)solutionism (Green flying) and one of prefiguration (Staying on the ground). The paper contributes to research in critical policy studies by demonstrating how actors with conflicting interests, values, and world-views imagine and engage with futures differently in their attempts to shape transition pathways and policy-making in the present.

2. Theorizing representations of futures

The future is influential in the present, guiding decision-making at all levels from the individual to international organizations (Oomen, Hoffman, and Hajer 2021). Since the adoption of the Paris Agreement, scientific efforts to anticipate the future have increasingly informed global climate governance (Vervoort and Gupta 2018), with futures viewed 'through the lens of scientific anticipation' (Knappe et al. 2019, 893). Such anticipation largely relies on methods of scenario planning and modeling to explore climate-impacted futures and possible mitigation pathways (van Beek et al. 2020). Integrated assessment models have played a particularly influential and performative role in this science-policy interface, but are criticized for focusing on techno-economic

representations of futures (Braunreiter et al. 2021) and failing to imagine ‘future worlds beyond the limiting ideas of plausibility that are tied to the present’ (Muiderman et al. 2020, 8). Such an approach ‘seeks to control and close the future’ (Inayatullah 2007, 1), with scenarios constructed as predictive tools focusing on what is likely rather than broader and potentially more transformative alternatives (Braunreiter et al. 2021).

In response to this critique, a critical approach to climate futures has been applied in an increasing number of studies, for example, in the exploration of their narrative construction (Asayama and Ishii 2017; Wittmayer et al. 2019), performativity (Hajer and Pelzer 2018), and visions for the future (Levy and Spicer 2013). These studies pay attention to the discursive aspects of climate futures which can ‘open up dialogue for exploring novel and alternative pathways’ (Muiderman et al. 2020, 13). For example, Asayama and Ishii (2017) discuss how narratives for futures influence technology development and policy enactment in the case of carbon capture and storage in Japan by describing what is attainable and prescribing what is desirable. Hajer and Pelzer (2018) draw on the concept of discourse to theorize how desirable futures can be enacted through staged events or performances (i.e. practices of bringing actors together around a shared vision of the future). Levy and Spicer (2013) highlight the role of discursive practices in mobilizing actors around a particular understanding of the future through an investigation of climate imaginaries,³ understood as ‘shared socio-semiotic system[s] of cultural values and meanings associated with climate change and appropriate economic responses.’ (ibid, 662).

As highlighted in these studies, a focus on discourse is important because the future does not exist in the ‘material’, but as representations of future states of development. Or as described by Tutton (2017), 483: ‘the future is real in so far as social actors produce representations of the future which have an effect on others’ actions in the present’. These representations act as prospective structures that shape orientation for action by providing ‘a script of the future world’ (Van Lente and Rip 1998, 34). Discursive representations of futures are thus not merely abstract visions of something that does not yet exist, but are performative in shaping the present (Oomen, Hoffman, and Hajer 2021).

In our analysis of competing discourses around the future of aviation in Sweden, we draw on Hajer’s (1995) argumentative discourse analysis. Hajer (1995, 44) defines discourse as ‘an ensemble of ideas, concepts and categorizations that are produced, reproduced and transformed in a particular set of practices and through which meaning is given to physical and social realities’. A discourse is thus a particular form of knowledge that shapes how things in the world are understood, which in turn influences how policy problems are acted upon (Hajer 2006). Acknowledging that many discourses exist simultaneously in a given debate, Hajer’s approach pays specific attention to the relationships between different discourses, such as how they overlap or compete in their representation of reality. To make sense of these relationships and the social and political effects produced by specific discourses, he offers the analytical framework of discourse-coalitions (Hajer 1995).

A discourse-coalition is ‘a group of actors that, *in the context of an identifiable set of practices*, shares the usage of a particular set of story lines over a particular period of time’ (Hajer 2005, 302, emphasis in original). Storylines are central in the formation of discourse-coalitions as they allow for an interpretation of meaning across actors. Hajer (1995, 65) defines storylines as ‘narratives on social reality through which elements from

many different domains are combined and that provide actors with a set of symbolic references that suggest a common understanding'. The actors involved in a discourse-coalition, be them academics, activists, lobbyists and/or legislators, each approach a problem with their own legitimate orientations, concerns and modes of speech, yet all appear to understand one another. Storylines provide a "short hand" in discussions' (Hajer 2006, 69), allowing actors from various institutional and ideological backgrounds to draw on a common understanding of reality. As different discourse-coalitions seek support for their storylines, they engage in an argumentative struggle over discursive dominance (Hajer 1995). According to Hajer, a discourse can be considered dominant when the storylines tied to it seemingly shape the way in which a problem is conceptualized, while also being stabilized and reflected through institutional arrangements, such as in policy documents or organizational practices (Hajer 2006).

3. Materials and methods

3.1. Research design

This paper builds on two previously conducted case studies, each focusing on a particular actor group seeking to influence the future of aviation in Sweden: the aviation industry (Christley, Karakaya, and Urban 2024) and the flight-free movement (Ullström 2024). Both case studies were conducted as part of separate research projects with different research designs and aims. The first explored expectations for sustainability transitions in Sweden's aviation industry, focusing on the role of storylines in coordinating the activities of industry actors (Christley, Karakaya, and Urban 2024). The second examined how leading actors in Sweden's flight-free movement experiment with and seek to diffuse alternative norms and practices around avoiding air travel (Ullström 2024). Through informal discussions between authors about the case studies, we came to understand that 'the future' is always present within discourses on aviation, although represented in different and often opposing ways. This insight raised questions about the arguments and ideas that underpin particular representations about the future of aviation, and their implications in the present, which we decided to explore further in a joint analysis of the two cases.

3.2. Data collection

Our empirical material consists of 30 interviews with actors in the aviation industry and the flight-free movement, one workshop with industry actors, and documentary material published between 2016 and 2022,⁴ such as reports, policy documents, and media articles. The data was collected as part of the two case studies described above, with some additional documents collected for the purpose of this paper. A list of interview and workshop participants can be found in [Appendix A](#), and a list of documents in [Appendix B](#).

For the case of the aviation industry, the data includes 16 semi-structured interviews with 19 actors conducted between March and June 2021, an online workshop in September 2021 with 16 participants (half of which had been involved in the interviews), and various documents. The interviews lasted between 30 and 80 minutes (averaging

around 40 minutes), and the duration of the workshop was three hours. All were conducted in English. Actors were selected based on their knowledge and work in the Swedish aviation industry and included representatives from two airlines, four airports, four aircraft fuel suppliers, an aircraft engineering company, six actors from industrial networks and consultancies, seven actors from industry-led research projects, three academic researchers focusing on aviation and industrial transformations, and one representative from the Swedish Transport Agency. The interviews focused on actors' expectations for the future of aviation, fossil-free innovation and their challenges and opportunities. In the workshop, participants were divided into three groups and asked to reflect on their visions for the future of aviation in parallel break-out groups. Documents include industry roadmaps and reports from industrial networks including the Swedish Air Transport Society and Fossil-Free Aviation 2045 as well as policy documents from Swedish government ministries, and 18 media articles from highly circulated Swedish newspapers.⁵

For the flight-free movement, the data includes 14 semi-structured interviews with 15 key actors who have played an important role for (re)producing views around avoiding flying in public debate, as well as additional documents illustrating the wider circulation of these views. The interviews were conducted between June and September 2022 and lasted 30–80 minutes (averaging around one hour). They focused on actors' engagement for reduced flying, their visions and aspirations for the future of flying, as well as broader reflections on climate change and sustainability. The actors were selected based on their central role in the flight-free movement, either through engagement in organizations and groups promoting reduced flying, or in other ways advocating avoiding flying. This included five activists from We Stay on the Ground, an organization founded in 2018 with the aim to change norms around flying, particularly through campaigns and other awareness-raising activities; four people advocating avoiding flying in Swedish news media by pledging to stop flying themselves; and six people promoting alternatives to flying (trains in particular) through their lifestyles and on social media, for instance by sharing stories or advice in the Facebook group 'Train vacation' (*Tågsemester*). Direct quotations from the interviews have been translated from Swedish to English and sent to the interviewees prior to publishing. Documents include online and printed materials by We Stay on the Ground, such as the guide 'We need to talk about aviation', the brochure 'Join the movement!', and the booklet 'Let's talk aviation!', and 11 media articles from highly circulated Swedish newspapers.⁶

3.3. Data analysis

Our analysis was guided by Hajer's (1995) discourse-coalition framework, focusing on the storylines through which futures of aviation are discursively represented in Sweden and the contestation and conflicts around these storylines. To identify storylines, we looked for frequently repeated arguments and statements about the future of aviation and interpreted their core messages, particularly focusing on actors' visions for desirable futures and ideas for how to get there. For example, industry actors commonly highlighted the societal benefits of aviation and the sector's role in contributing to Sweden's climate goals, which we interpreted as a storyline about how aviation serves as a *puzzle piece in a sustainable society*. By contrast, actors in the flight-free movement argued that

current levels of aviation are incompatible with climate goals, which we interpreted as a storyline about the importance of *reduced air travel* in the transition to a sustainable society. We coded an initial set of storylines for each case separately and then discussed and compared storylines across the two cases. While we did not assume that actors from the two groups were part of separate discourse-coalitions, their storylines were clearly depicting different futures. Thus, we interpreted the actor groups to represent two competing discourse-coalitions that we labeled ‘Green flying’ for the aviation industry and ‘Staying on the ground’ for the flight-free movement. Having determined these discourse-coalitions, we repeated the reading of the material and refined the storylines to better reflect the main ideas and perspectives of each actor group, which resulted in four storylines for each discourse-coalition; two representing their desired future and two centering on solutions for how to achieve this future. To understand the contestation around these storylines, we compared the two discourse-coalitions with a specific focus on topics that were discussed by actors from both Green flying and Staying on the ground, but where their opinions and arguments differed. For example, actors from both discourse-coalitions discussed the role of technology in the future of aviation, but had different views about the potential of technology to make aviation sustainable, which we interpreted as a conflict between them.

4. Results

We identified two discourse-coalitions articulating competing discourses around the future of aviation in Sweden. While ‘Green flying’ supports the continued reproduction of aviation for the transport of people and goods across the globe, ‘Staying on the ground’ highlights the unsustainability of aviation and argues that flying must be reduced to avoid a climate crisis. Actors in each discourse-coalition draw upon storylines to define and shape the future of aviation, while contesting the storylines of the other. They particularly

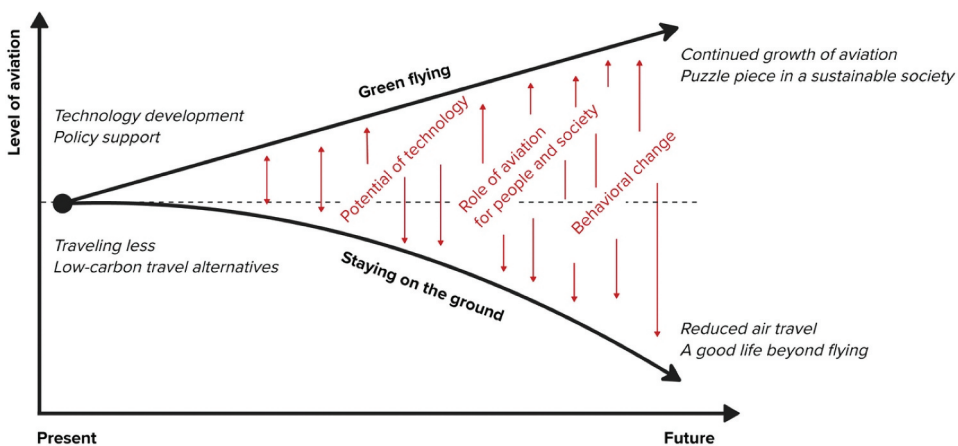


Figure 1. Illustration of competing discourse-coalitions for the future of aviation in Sweden. The black lines represent the discourse-coalitions. The labels in italics show their dominant storylines, with solutions illustrated to the left and visions of the future to the right. The red labels demonstrate the main conflicts between the discourse-coalitions.

disagree about the role of aviation for people and society, the potential of technology to make aviation sustainable, and the need for behavioral changes. An overview of the results is illustrated in [Figure 1](#).

4.1. Storylines about the future of aviation

4.1.1. Green flying

The desired future of Green flying is expressed through two interrelated storylines, emphasizing that *continued growth of aviation* is an important *puzzle piece in a sustainable society*. Aviation is believed to have substantial societal benefits nationally and globally, through the transport of goods and people and access it entails, which is seen to motivate the *continued growth of aviation*. As one actor explained: ‘A two-and-a-half kilometer road will take you only two-and-a-half kilometers, whereas a runway can take you to the other side of the world’ (GF2). Views around air travel as fundamental for society – now and into the future – are explicit in the industry roadmap for sustainable aviation published in 2018 as part of the government initiative ‘Fossil-Free Sweden’. The roadmap outlines the necessity of aviation as follows:

The world’s economy is now global . . . Families and friends are spread all over the world and goods and services are traded all over the globe. A prerequisite for this is that physical distances can be bridged in a reasonably short time. Flying is, and will for a long time to come, be the mode of transport that can offer long-distance accessibility within a reasonable travel time. (Swedish Air Transport Society 2018, 7)

While actors in Green flying acknowledge the climate impact of air travel, aviation is believed to play an important role as a *puzzle piece in a sustainable society*, contributing to Sweden’s ambition to become the world’s first fossil-free welfare state by 2045. The aviation industry has a self-set target in line with this ambition, first announced in the industry roadmap for sustainable aviation: ‘the goal is to achieve fossil-free domestic aviation by 2030 and fossil-free aviation both domestically and internationally by 2045’ (Swedish Air Transport Society 2018, 6). The roadmap was further extended in the report ‘Fossil-Free Aviation 2045’, in which actors from across the aviation industry collaborated in foresight analysis to develop a vision of a society where fossil-free aviation has been achieved (Al-Ghussein Norrman and Talalasova 2021). The vision encapsulates the desired future of Green flying, highlighting the role of aviation in Sweden’s climate transition:

The year 2045 marked the final destination in Sweden’s journey towards fossil-fuel freedom. Sweden becomes the world’s first fossil-free social welfare country, and the transformation of the aviation industry was an essential piece of the puzzle on the journey to the goal. (Al-Ghussein Norrman and Talalasova 2021, 16)

To achieve fossil-free aviation, actors in Green flying promote *technology development*, reproducing a storyline in which improvements to energy efficiency and innovation in fossil-free technologies overcome the climate impact of air travel. They especially highlight that the challenge facing aviation is its current reliance on fossil-based jet fuels, rather than the practice of air travel itself. As new technologies are developed, flying is believed to become ‘one of the environmentally friendly ways of transporting yourself in the future’ (GF14). The storyline about *technology development* covers every alternative

for fossil-free air travel and industry actors believe aviation will have ‘a mix of everything in the future’ (GF5). As one actor described:

We are talking about a refinement in the existing technology at first . . . and then we will see sustainable aviation fuels being used in larger volumes than today. We will see electric aircraft and a range of hydrogen aircraft coming to the market, with variations between these technologies. And this is going to happen in our lifetime. (GF4)

To support innovation and ensure that the industry will meet their target for fossil-free aviation, actors in Green flying emphasize the need for *policy support*. This storyline is reflected in the industry roadmap in the proposals described as necessary for achieving fossil-free aviation, each directed at gaining support from policymakers: i) decide on the direction of government investment into fossil-free fuel production; ii) build and communicate a public target for the transition to fossil-free aviation; iii) set aside funds for research and development for fossil-free fuels and technologies; iv) review the fee and support system currently in place for aviation; v) procure fossil-free fuels for all public air travel in Sweden (Swedish Air Transport Society 2018, 10). These proposals tie into arguments about how ‘the government needs to step up’ (GF14) to provide ‘proactive long-term policy in order to reduce the risks of major technology investments’ (GF12). Notably, actors in Green flying express frustration at the limited support the aviation industry has received from policymakers, despite its importance in society, often highlighting how the road and rail industries receive substantial public support. As one actor explained, ‘we finance our own infrastructure and manage ourselves, but if we compare it to road and rail, they are a large part of the state budget’ (GF10).

4.1.2. *Staying on the ground*

The discourse-coalition of Staying on the ground challenges the idea that aviation should continue to grow. The desired future is expressed through two interrelated storylines, one that highlights *reduced air travel* as critical in the transition to a sustainable society and one that presents a vision of *a good life beyond flying*. Stressing the urgency of the climate crisis, the storyline about *reduced air travel* centers around arguments about how current levels of aviation ‘does not fit into any climate budget’ (SoG12). Lifestyle changes focused on avoiding air travel play a key role in this storyline, which portrays flying as a luxury and an expression of an ‘unsustainable culture’ (SoG12). Some forms of flying are pointed out as especially unnecessary and easily avoidable, such as trips substitutable by other modes of transport or for pleasure purposes only. As one actor said:

In the middle of a global crisis, we are causing emissions for fun . . . This [leisure flying] is not something we have to do. Not in a crisis. It should be a no brainer not to cause emissions for fun . . . this is just a luxury thing we are doing. (SoG12)

The storyline about *a good life beyond flying* connects these ideas to a vision about broader cultural change, especially highlighting the need to create new ways of life that have ‘significantly lower impact on the climate’ (SoG11). Stressing values beyond consumerism, such as spending time in nature and ‘being more engaged in the local community’ (SoG11), arguments about the possibility to ‘live a good life and abstain from leisure flying’ (SoG3) is key in this storyline. As one actor said: ‘We can still travel in other ways, we can explore a lot of things close by, we can spend time with friends and

family, you can really experience things without flying’ (SoG2). The booklet ‘Let’s talk aviation!’ by We Stay on the Ground, which is intended to support conversations about aviation and climate, explicitly highlights the need to tie arguments about avoiding flying to a positive and desirable future:

The focus is often on all the sacrifices we have to make to reduce emissions, but the fact is that we also have a lot to gain. Climate transition would give us a society with better health, less stress and more time for relationships and interests. (We Stay on the Ground 2022, 8)

To achieve a future with reduced flying, the discourse-coalition of Staying on the ground presents *low-carbon travel alternatives* as an important part of the solution. This storyline highlights the need for both lifestyle and policy changes focused on making it easier, cheaper, and more desirable to choose sustainable modes of transport, both for national and international travel. Train travel in particular is described as having many benefits, not only for the climate but also for the travel experience. As one actor said: ‘With the train you can experience so much more during a trip than you do by plane . . . it gives more freedom in the journey’ (SoG1). Views around train travel as a desirable and exciting alternative to flying are reflected by the concept of ‘train brag’ (*tågskrut*), coined by a journalist in 2019 to describe how people have started to boast about traveling long distances by train (Karlsten 2019). Although ‘train brag’ is focused on lifestyle changes, actors in Staying on the ground also highlight the need for political measures to facilitate a shift in travel norms, such as cheaper train tickets, a more interconnected railway network across Europe, new night train routes, and better booking systems. One actor said: ‘Imagine if you could book the train straight to Barcelona, and in the best case without too many changes’ (SoG6).

Beyond shifting to more sustainable modes of transport, actors in Staying on the ground advocate for a more fundamental change of current travel norms and highlight the importance of *traveling less* overall. This storyline points to the need to shift perceptions of long-distance travel as a high-status practice and instead ‘create local lives that are good enough so that one doesn’t feel the need to travel so much’ (SoG5). It is not about giving up traveling completely, nor about shaming people who fly, but rather showing that a different way of life is both possible and desirable. As one actor said: ‘It is easy to get blinded and think that you have to travel so incredibly far to see amazing things and to learn and develop, when in fact you can do it locally’ (SoG10).

4.2. Discursive conflicts between storylines

The storylines associated with Green flying and Staying on the ground show that the future of aviation is contested in Sweden. Although both discourse-coalitions acknowledge the climate impact of air travel, they each have different aspirations for the future and conflicting ideas for how to achieve sustainable aviation.

4.2.1. Role of aviation for people and society

Green flying and Staying on the ground illustrate a tension between the ambition for continued growth in air travel and the desire for slower and more sustainable lifestyles. For actors in Green flying, it is of utmost importance to maintain ‘the various functions that aviation plays in society’ (GF4) given how aviation has been instrumental in creating

the global and interconnected society of today. They see aviation as fundamental for the organization of current social, economic, and political systems and argue that it would be very difficult to reduce air travel because ‘we live in a global world now’ (GF3). Green flying assumes highly mobile lifestyles to be aspirational with claims that ‘people want to travel’ (GF16), thus reproducing norms around frequent flying.

Actors in Staying on the ground criticize this focus on aviation growth because ‘we must put all our efforts into reducing emissions’ (SoG9). In line with this critique, research has highlighted the unsustainability of aviation’s current business model (Gössling and Humpe 2023) and the potential of demand reductions to rapidly reduce aviation emissions in line with the Paris Agreement (Bows-Larkin 2015; Klöwer et al. 2021). While effective demand management policies currently are lacking in Sweden and internationally (Larsson et al. 2019), the storylines used by the flight-free movement shed light on the largely overlooked question of demand. By highlighting intersecting personal, environmental, and societal benefits of reduced air travel, these storylines move beyond the logic of existing economies and consumer cultures to promote an alternative and less aeromobile future. They highlight finding pleasure closer to home, embracing a lifestyle in line with climate goals, and, as described in one early debate article, safeguarding ‘humanity’s future welfare and survival’ (Anderson et al. 2017). In this way, Staying on the ground aligns with and reproduces the ‘sustainable lifestyles’ imaginary previously identified by Levy and Spicer (2013), which builds on a vision of a local and less materialistic way of life outside the bonds of the current growth-oriented and consumerist society.

4.2.2. Potential of technology

Technological solutions are often presented as a way to avoid changes in lifestyle patterns and economic structures, which may appear threatening to business actors and consumers (Levy and Spicer 2013). Actors in Green flying are optimistic about technology and believe that fossil-free aviation will play ‘a role in the net-zero emission targets of Sweden’ (GF1). They anticipate that the rate of technology development will accelerate ‘because that’s what Sweden wants, it’s what the European Union wants, and it’s what the world wants’ (GF4). Expectations about technological innovation are long-held within the aviation industry (Gössling and Peeters 2007) and largely shape ongoing sustainability efforts (Köves and Bajmócy 2022). The belief that technology development will deliver a sustainable future is central in the ecological modernization discourse (Hajer 1995) which currently dominates climate policy-making (Lamb et al. 2020). It also forms the basis of Levy and Spicer’s (2013) ‘techno-market’ imaginary, which presents a future in which economic growth is decoupled from environmental degradation through the implementation of low-carbon technologies and market measures.

Although actors in Staying on the ground recognize the need for innovation, they argue that the rate of technology development will be insufficient to prevent a climate crisis, highlighting that ‘climate-neutral aviation is far away’ (Anderson et al. 2017) and ‘we cannot solve today’s problems with tomorrow’s technology’ (SoG8). In stressing the length of time it will take to develop fossil-free technologies for aviation, Staying on the ground counters a common discourse of climate delay which promotes incremental and often ineffective solutions in order to maintain existing power structures and practices (Lamb et al. 2020). According to Staying on the ground,

‘technology will not save us’ (SoG12), but must be complemented by behavioral and lifestyle changes.

4.2.3. Behavioral change

According to Green flying, there is no need for people to limit their air travel because innovation in fossil-free technologies will be sufficient to make aviation a sustainable mode of transport. As one actor explained, ‘we are talking about reducing the climate impact of aviation, not reducing flying’ (GF3). Actors in Green flying associate changes in air travel behavior with the feeling of flight shame, which they argue will diminish as air travel becomes sustainable: ‘you don’t have to feel flight shame. You can feel good when you fly’ (GF9). This belief is reproduced in public discourse, with actors from across the aviation industry publishing opinion pieces and open letters in response to the growing problematization of flying in public debate. Headlines include ‘Time to replace flying shame with flying wisdom’ (Holmbergh Jacobsson 2019a), and ‘Don’t shame flying – stopping flying is not the solution’ (Holmbergh Jacobsson 2019b).

However, actors in Staying on the ground do not intend to spread flight shame, but rather to highlight ‘positive views on what kind of future and world we want’ (SoG2). The guide ‘We need to talk about aviation’, which presents responses to the most common arguments used to defend flying, expresses frustration with the debate about flight shame:

The aim of encouraging people to give up flying isn’t to shame them, but rather to get more people to realize how serious the climate crisis is and how important their own actions are . . . By saying that those of us who don’t fly and urge others to go flight-free are spreading ‘flight shame’, the responsibility for any discomfort is shifted onto those of us who take responsibility for our common future. (Rosén 2022, 41)

By conflating changes in air travel behavior with flight shame, Green flying fails to acknowledge the deep-rooted desire of Staying on the ground to change the existing socio-economic paradigm that extends far beyond the practice of flying and feelings of shame.

5. Discussion and conclusion

Drawing on Hajer’s (1995) argumentative discourse analysis, this paper examined two discourse-coalitions that articulate opposing discourses on the future of aviation in Sweden: Green flying and Staying on the ground. Based on interview and workshop data with actors from the aviation industry and the flight-free movement, and additional documentary material, the analysis focused on the storylines through which futures of aviation are represented by each discourse-coalition, and the contestation and conflicts around these storylines. Green flying anticipates aviation to maintain a dominant role as a necessary and appreciated mode of transport that contributes to uphold the existing socio-economic paradigm, while Staying on the ground imagines an alternative future where air travel is reduced and no longer seen as a desirable norm and practice. The discourse-coalitions compete to shape the future of aviation, with conflicting ideas about the role of aviation for people and society, the potential of technology to make aviation sustainable, and the need for behavioral changes. The paper contributes to research in

critical policy studies, and literature on climate futures more broadly, by demonstrating how actors with conflicting interests, values, and worldviews imagine and engage with futures differently. The specific contribution is twofold.

Firstly, our analysis highlights fundamental conflicts regarding what is represented as a desirable future for aviation in the context of the climate crisis. The discursive conflicts we identified are indicative of a deeper contention surrounding climate policy and modes of organizing social, economic, and political systems more generally. Green flying legitimizes hypermobility, which has been argued to be a symptom of ‘liquid modernity’ (Bauman 2007). Liquid modernity is characterized by the constant change, impermanence and uncertainty of modern life, ‘fuelled by individualism in a globalized world shaped by global, hypermobile elites, who frequently change places of work, residence and social networks’ (Cohen and Gössling 2015, 1663). Staying on the ground pushes back against pressures to reproduce hypermobile lifestyles and proposes a future that is not conditional on aeromobility, thus offering an alternative to the ever-increasing pace of life that has become characteristic of contemporary globalized society. As highlighted in previous research, such an alternative can offer more diverse and sustainable solutions for the aviation sector (Köves and Bajmócy 2022), including sufficiency-oriented solutions (Griggs and Howarth 2023) that might contribute to breaking out of ‘the imaginative hegemony of established [socio-economic] paradigms’ (Prainsack 2022, 26).

Secondly, our analysis highlights two different logics through which discourses on the future of aviation are enacted in practice to shape transition pathways and policy-making in the present. Actors promoting Green flying draw upon a logic of (techno)solutionism to sustain their promise about sustainable aviation. Solutionism refers to the belief that all problems have ‘clearly identifiable, discrete ‘solutions’ (Stein 2024, 172) which are primarily found through technological innovation. For example, Green flying argues that technologies that do not yet exist (e.g. hydrogen-based fuels), or are in an early state of development (e.g. electric aircraft, sustainable aviation fuels), will make aviation fossil-free in the future. Such claims have been problematized in research as ‘technology myths’ that overstate the realistic potential of technological fixes to avoid other types of action (Peeters et al. 2016), and thus reproduce ‘a fantasmatic narrative of sustainable aviation’ (Griggs and Howarth 2023, 153). Nevertheless, Green flying is being institutionalized in Sweden as the promise for technology development is enacted in present climate policy for aviation. In 2021, the Swedish government mandated jet fuel suppliers to reduce greenhouse gas emissions through the blend-in of sustainable aviation fuels (Ministry of Infrastructure 2021). And, in 2023, the government announced a decision to invest SEK 15 million annually (approximately EUR 1.3 million) in research for electric aircraft (Government of Sweden 2023). However well intentioned, the anticipation of such technological solutions relies on a limited scope of climate futures that ‘reinscribes the present’ (Inayatullah 1990, 1) and reproduces discourses of ecological modernization (Hajer 1995). As argued in previous research, such discourses tend to promote non-transformative solutions that are assumed to bring about emissions reductions in the future rather than today, thus leading to a delay in climate action (Lamb et al. 2020).

Actors promoting Staying on the ground instead engage with the future through a logic of prefiguration, meaning that they enact their envisioned future in the present by living the changes they desire (Yates 2015). More specifically, they do not merely argue for specific changes or policy actions, but actively embody their storylines of a sustainable

future in the present (see also Ullström 2024). As argued in previous research, storylines ‘can function as practical guidelines providing general principles and concrete examples for the kind of activities and practices that help creating, shaping and thus prefiguring a desired, alternative future in the current world’ (Wittmayer et al. 2019, 9). By offering ‘a vision of what our societies would look like in a better world’ (Prainsack 2022, 22), Staying on the ground challenges existing socio-economic paradigms and the futures perceived as desirable, and even imaginable, in policy-making of the present. Recent policy developments in Sweden suggests that the storylines of Staying on the ground have, to some extent, started to gain influence. For example, new international sleeper trains were introduced in 2021 following a decision from the government aimed at connecting Sweden with European cities and stimulating climate-friendly travel (Ministry of Infrastructure 2020). The City of Malmö (Sweden’s third largest city) recently implemented a new travel policy aimed at limiting flights (Malmö Stad 2021), and the large nonprofit fitness organization Friskis&Svettis has decided to ban flying in their fitness vacation packages (Friskis&Svettis 2022). The adoption of these policies shows that Staying on the ground is starting to gain legitimacy in political and public discourse, thus challenging industry expectations about the future growth of air travel.

Our results suggest that storylines about alternative futures that go beyond the current modes of organizing social, economic, and political systems can gain credibility and even begin to shape policy-making. However, in building on two previously conducted case studies, our analysis is limited to Sweden and explores only two actor groups: the aviation industry and the flight-free movement. Expanding the scope of actors included in the analysis, for example, to policymakers and/or consumers of air travel, may suggest additional discourse-coalitions that may have been overlooked in this paper. Such extended analysis could thus allow for a more nuanced understanding of the different discourses on the future of aviation and a further refinement of storylines. Further work could also examine discourses around the future of aviation beyond Sweden, taking a broader geographical scope to explore similarities and differences between countries. Lastly, this work could be extended by engaging more explicitly in the construction of alternative futures to ‘generate shared realities that have mobilizing power in the present’ (Mangnus et al. 2021, 5). For example, further work could draw on ‘techniques of futuring’ (Hajer and Pelzer 2018; Oomen, Hoffman, and Hajer 2021) as a tool to collectively co-create new futures for aviation by bringing actors with different interests, values, and worldviews together around imagined futures.

Notes

1. We follow the terminology of Mangnus et al. (2021, 2) referring to ‘futures’ when discussing representations of time later-than-now, which are infinite in number, and ‘the future’ when in relation to an individual understanding or framing of a particular future.
2. We named this discourse-coalition based on a previous study by Ullström, Stripple, and Nicholas (2023) which identified ‘Staying on the ground’ as an emerging discourse around avoiding flying in Sweden.
3. Levy and Spicer (2013) build on Jessop’s (2010, 344) definition of imaginaries as ‘semiotic systems that frame individuals subjects’ lived experience of an inordinately complex world and/or inform collective calculation about that world’.

4. We excluded documents published before 2016, which previous research has identified as the year when Staying on the ground emerged as a discourse in Sweden (Ullström, Stripple, and Nicholas 2023).
5. The original case study included 63 media articles (see Christley, Karakaya, and Urban 2024). We excluded 14 articles that were published before 2016, and 31 articles that covered specific topics or events rather than general views on the future of aviation, which gave us a sample of 18 articles.
6. The original case study included 10 media articles (see Ullström 2024). We excluded four articles that were not relevant for the purpose of this study, and added five articles drawn from our previous knowledge on the topic, which gave us a sample of 11 articles.

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Appendix A

List of interview and workshop participants

Label	Description of participant	Type of data
Green flying		
GF1	Researcher in transport system at a Swedish university	Workshop
GF2	Manager of sustainable aviation fuel distributor in Sweden	Interview and workshop
GF3	Sustainability and environment manager at airport operator	Workshop
GF4	Representative from member organization for the Swedish transport industry	Interview and workshop
GF5	Sustainability manager and pilot for a charter airline	Interview
GF6	R&D project leader for the development of electric aviation	Interview
GF7	R&D project leader for the development of electric aviation	Interview
GF8	R&D project leader for the development of electric aviation	Interview
GF9	R&D project leader for the development of electric aviation	Interview
GF10	Consultant specialist in sustainable aviation	Interview and workshop
GF11	Airline sustainability manager	Interview and workshop
GF12	Sustainability strategist in major airport	Interview
GF13	Sustainability strategist in major airport	Interview and workshop
GF14	Regional airport manager in Northern Sweden	Interview
GF15	Manager in biofuels producer in Sweden	Interview
GF16	Manager in global biofuels producer and distributor with operations in Sweden	Workshop
GF17	Project leader in the development of hydrogen for transport in Sweden	Workshop
GF18	Project leader for sustainability in regional airports in Sweden	Interview and workshop
GF19	Former pilot and consultant specialist in sustainable aviation	Interview and workshop
GF20	R&D project leader in aviation	Interview
GF21	Consultant specialist in sustainable aviation and former manager of sustainable aviation fuel distributor in Sweden	Interview
GF22	Representative from member organization for the Swedish aerospace industry	Interview and workshop
GF23	R&D project leaders for the development of electric aviation	Interview
GF24	Researcher in industrial transformation at a Swedish university	Workshop
GF25	Researcher in aviation at a Swedish university	Workshop
GF26	Engineer in aircraft component manufacturer	Workshop
GF27	Policy advisor in government transport agency	Workshop
Staying on the ground		
SoG1	Active in the Train vacation group and other initiatives promoting train travel as an alternative to flying	Interview
SoG2	Founder of We Stay on the Ground.	Interview
SoG3	Campaigner for We Stay on the Ground.	Interview
SoG4	Active in the Train vacation group, advocates train travel as an alternative to flying in the public debate (e.g. blog posts, opinion pieces).	Interview
SoG5	Campaigner for We Stay on the Ground.	Interview
SoG6	Active in the Train vacation group, gives public talks about long-distance train travel.	Interview
SoG7	Campaigner for We Stay on the Ground.	Interview
SoG8	Climate activist with engagement in initiatives against flying and member of We Stay on the Ground.	Interview
SoG9	Leading role in the media debate around avoiding flying.	Interview
SoG10	Leading role in the media debate around avoiding flying.	Interview
SoG11	Leading role in the media debate around avoiding flying.	Interview
SoG12	Leading role in the media debate around avoiding flying.	Interview
SoG13	Engaged in an environmental organization, promoted sustainable travel alternatives in the public debate.	Interview
SoG14	Founder of the Train vacation group.	Interview
SoG15	Former travel writer who stopped flying and started to promote (and practice) sustainable travel alternatives.	Interview

Appendix B

List of documents included as empirical material

Author	Document title (original)	Document title (translated to English)	Type of document	Publication	Date
Green Flying					
Anna Wilson, Rickard Gustafson, Christian Clemens, Mattias Dahl	Flygskatten är skadlig och utan nytta för klimatet	The flight tax is useless and harmful for the climate	Media article	Svenska Dagbladet	01/12/2016
Christian Clemens, Rickard Gustafson, Bjørn Kjos	SAS, Norwegian och BRA: Detta är vårt alternativ till flygskatt	SAS, Norwegian and BRA: This is our alternative to flight tax	Media article	Dagens Industri	15/03/2017
Ministry of Environment and Energy	Ett klimatpolitiskt ramverk för Sverige 2016/17: MJU24	A Climate Policy Framework for Sweden 2016/17: MJU24	Policy document	Government of Sweden	2017
Ministry of Trade and Industry	En svensk flygstrategi – för flygets roll i framtidens transportsystem N2017/00590/MRT	A Swedish Aviation Strategy – for the Role of Aviation in the Future Transport System N2017/00590/MRT	Policy document	Government of Sweden	2017
Sara Skyttedal	Ta flyget till Thailand – för klimatets skull	Fly to Thailand – for the sake of the climate	Media article	Expressen	01/02/2018
Svante Axelsson, Rickard Gustafson, Christian Clemens, Jonas Abrahamsson, Mattias Dahl, Peter Larsson, Nicklas Nordström, Tomas Nilsson, Maria Fiskerud	Flygbranschen: Så blir inrikesflyget fossilfritt om tolv år	The aviation industry: This is how domestic aviation will become fossil-free in twelve years	Media article	Dagens Industri	22/04/2018
Swedish Air Transport Society	För fossilfri konkurrens kraft – flybranschen	Roadmap for a fossil-free and competitive aviation industry	Industry document	Fossil Free Sweden	25/04/2018
Rickard Nordin, Anders Åkesson	Flyget behöver biobränsle	Flying needs biofuels	Media article	Dagens Industri	26/04/2018
Fredrik Kämpfe, Mattias Dahl	Vi vill minska utsläppen – inte resandet	We want to reduce emissions – not traveling	Media article	Göteborgs-Posten	28/05/2018
Tomas Augustsson	Forskare: Inför kvotplikt på biobränsle för flyget	Researchers: Introduce a blending quota on biofuel for aviation	Media article	Svenska Dagbladet	27/08/2018
Jenny Stjernstedt	SAS-vid:n om flygets klimatproblem – Köp mindre taxfree	SAS CEO on the problem of flying – buy less duty free	Media article	Dagens Industri	22/03/2019

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Author	Document title (original)	Document title (translated to English)	Type of document	Publication	Date
Charlotte Holmbergh Jacobsson	Skambelägg inte flyget – att sluta flyga är inte lösningen	Don't shame flying – stopping flying is not the solution	Media article	Göteborgs-Posten	15/03/2019
Sara Skyttedal	Miljöpartiets flygskam räddar aldrig klimatet	The Green Party's flight shame will never save the climate	Media article	Expressen	20/05/2019
Charlotte Holmbergh Jacobsson	Dags att byta ut flygskam mot flygvett	Time to replace flying shame with flying wisdom	Media article	Göteborgs-Posten	15/09/2019
Jennifer Beg Eidebo	De jobbar för framtidens eldrivna flygplan	They work for the electric aircraft of the future	Media article	Aftonbladet	04/10/2019
Fredrik Kämpfe	Klimatväxla inte bort det hållbara flyget	Climate change does not eliminate sustainable aviation	Media article	Göteborgs-Posten	08/11/2019
Government Official Investigations	Biojet för flyget SOU 2019:11	Biofuels for Aviation SOU 2019:11	Policy Document	Government of Sweden	2019
Christian Clemens, Dag Waldenström	"Flygsektorn kommer att resa sig igen"	'Aviation sector will rise again'	Media article	Svenska Dagbladet	15/04/2020
Per Mattsson	Infrastrukturministern: Elflyg är framtiden	Infrastructure minister: electric flights are the future	Media article	Dagens Industri	17/06/2020
Anders Ågren, Anna Tenje, Irene Svenonius, Jesper Skälberg Karlsson, Peter Danielsson	Använd inte pandemin för att lägga ner flyget	Don't use the pandemic to cancel flights	Media article	Aftonbladet	01/11/2020
Nina Al-Ghoussein Norrman, Elena Talalasova	Fossil-Free Aviation 2045: Actions, Obstacles, Needs		Industry document	Fossil-Free Aviation 2045	31/01/2021
Ministry of Infrastructure	Reduktionsplikt för flygfotogen 2020/21:135	Reduction Obligation on Aviation Kerosene 2020/21:135	Policy document	Government of Sweden	2021
Daniel Åkerman	Därför är fossilfritt flyg en fara för miljörörelsen	Fossil free flight is a danger to the environmental movement	Media article	Göteborgs-Posten	27/06/2022
Annika Strandhäll	Vanligt folk ska inte känna flygskam	Ordinary people should not feel ashamed of flying	Media article	Göteborgs-Posten	13/08/2022
Staying on the ground Malena Ernman	Jorden behöver en överdos av godhet nu	The Earth needs an overdose of goodness now	Media article	Expressen	18/12/2016

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Author	Document title (original)	Document title (translated to English)	Type of document	Publication	Date
Kevin Anderson, Heidi Andersson, Malena Erman, Björn Ferry, Martin Hedberg, Staffan Lindberg, Johan Landgren, Stefan Sundström, Jens Liljestrand	"I den akuta klimatkrisen väljer vi nu bort flyget"	'In the acute climate crisis, we opt out of flying'	Media article	Dagens Nyheter	02/06/2017
Isobel Hadley-Kamptz	Jag är trött på att visa mitt barn en döende värld	I'm tired of showing my child a dying world	Media article	Expressen	13/01/2018
Cecilia Hagen	Jag ser deras resor och min avund vet inga gränser	I see their travels and my envy knows no bounds	Media article	Expressen	16/01/2018
Emanuel Karlsten	Nu får ni faktiskt sluta flyga med det samma	Now you actually have to stop flying immediately	Media article	Expressen	11/10/2018
Anna-Lena Laurén	Flygskammen har bytts mot tågskryt	Flight shame has been replaced by train bragging	Media article	Göteborgs-Posten	25/02/2019
Jonathan Jeppsson	Varför kan inte medelklassen prata om sitt flygresande?	Why can't the middle class talk about their flying?	Media article	Dagens Nyheter	29/03/2021
Nina Morby	Planeten har inte råd med våra charterresor	The planet can not afford our holiday flying	Media article	Aftonbladet	05/28/2022
Hanna Hellqvist	Jag har knappt sett världen, men står inte ut med tanken på att flyga	I have barely seen the world, but can't stand the thought of flying	Media article	Göteborgs-Posten	22/06/2022
Maja Rosén	Jag hade uppskattat venedig ännu mer om jag hade rest dit långsamt	I would have appreciated Venice even more if I had traveled there slowly	Media article	Dagens Nyheter	28/06/2022
Sara Carlberg	We Need to Talk about Aviation. A Guide to Having Climate Conversations	Flying can no longer be an option	Report/guide	We Stay on the Ground	25/07/2022
We Stay on the Ground	Let's talk aviation!		Media article	Göteborgs-Posten	26/07/2022
We Stay on the Ground	Join the movement!		Booklet	We Stay on the Ground	2022
We Stay on the Ground			Brochure	We Stay on the Ground	2022