

Project details

Subsidy basis

Partner	Funding rules	
University of Sheffield	Subsidy control	<a href="#">View answers</a>
ROLLS-ROYCE PLC	Subsidy control	<a href="#">View answers</a>
Imperial College London	Subsidy control	<a href="#">View answers</a>
VIRGIN ATLANTIC LIMITED (Lead)	Subsidy control	<a href="#">View answers</a>
[REDACTED]	Subsidy control	<a href="#">View answers</a>
ICF SH&E LIMITED	Subsidy control	<a href="#">View answers</a>
The Boeing Company	Subsidy control	<a href="#">View answers</a>
Rocky Mountain Institute	Subsidy control	<a href="#">View answers</a>

Application team

VIRGIN ATLANTIC LIMITED (Lead)

Organisation details

Type	Business
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Team members

Full name	Phone number	Email	EDI survey
[REDACTED]	[REDACTED]	[REDACTED]	Complete
[REDACTED]	[REDACTED]	[REDACTED]	Complete

Full name	Phone number	Email	EDI survey
[REDACTED]	[REDACTED]	[REDACTED]	Complete
[REDACTED]	[REDACTED]	[REDACTED]	Complete
[REDACTED]	[REDACTED]	[REDACTED]	Complete
[REDACTED]	[REDACTED]	[REDACTED]	Complete
[REDACTED]	[REDACTED]	[REDACTED]	Complete
[REDACTED]	[REDACTED]	[REDACTED]	Complete
[REDACTED]	[REDACTED]	[REDACTED]	Complete

University of Sheffield

Organisation details

Type	Research
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Team members

Full name	Phone number	Email	EDI survey
[REDACTED]	[REDACTED]	[REDACTED]	Complete

ROLLS-ROYCE PLC

Organisation details

Type	Business
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Team members

Full name	Phone number	Email	EDI survey
[REDACTED]	[REDACTED]	[REDACTED]	Complete
[REDACTED]	[REDACTED]	[REDACTED]	Complete

Imperial College London

Organisation details

TypeResearch

Team members

Full name	Phone number	Email	EDI survey
[REDACTED]	[REDACTED]	[REDACTED]	Complete
[REDACTED]	[REDACTED]	[REDACTED]	Complete
[REDACTED]	[REDACTED]	[REDACTED]	Complete

[REDACTED]  
Organisation details

Type[REDACTED]

Address[REDACTED]

Team members

Full name	Phone number	Email	EDI survey
[REDACTED]	[REDACTED]	[REDACTED]	Complete

# ICF SH&E LIMITED

## Organisation details

Type	Business
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## Team members

Full name	Phone number	Email	EDI survey
[REDACTED]	[REDACTED]	[REDACTED]	Complete

# The Boeing Company

## Organisation details

Type	Business
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Address	PO Box 3707, Seattle, WA, United States, 98124
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## Team members

Full name	Phone number	Email	EDI survey
[REDACTED]	[REDACTED]	[REDACTED]	Complete
[REDACTED]	[REDACTED]	[REDACTED]	Complete

# Rocky Mountain Institute

## Organisation details

Type	Public sector, charity or non Je-S registered research organisation
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Address	2490 Junction PI #200, Boulder, United States, 80301
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## Team members

Full name	Phone number	Email	EDI survey
[REDACTED]	[REDACTED]	[REDACTED]	Complete
[REDACTED]	[REDACTED]	[REDACTED]	Complete

Application details

Competition name

Net zero transatlantic flight fund

Application name

100% SAF, Net Zero Flight (NZF)

When do you wish to start your project?

31 December 2022

Project duration in months

12 months

Research category

Selected research category

Industrial research

Project summary

Project summary

The 100% SAF, Net Zero Flight (NZF) will provide a fit to fly approval for a transatlantic flight on a Boeing 787 across the Atlantic.

[REDACTED]

[REDACTED] with an estimated greenhouse gas (GHG) reduction of ~80% compared to conventional jet fuel.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

- [REDACTED]
- [REDACTED]

[REDACTED]

## Public description

### Public description

The UK Government's 100% Sustainable Aviation Fuel (SAF) Transatlantic Challenge recognises the critical role that sustainable feedstock fuels have to play in decarbonising aviation and the urgent need to scale production and use of SAF by airlines globally.

This Virgin Atlantic flight, powered by 100% SAF, will take to the skies between London Heathrow and John F Kennedy Airport in late 2023, supporting research, certification and technology needed to pioneer a new future of low carbon emission flying.

In collaboration with our partners including Rolls Royce, Boeing [REDACTED]  
[REDACTED], the consortium is focused on paving the way for increasing SAF

blending limits and demonstrating the climate benefits of 100% SAF including this impact on non-carbon emissions.

Alongside our industry and operational partners, we will be working closely with Sheffield University and Imperial College London, to ensure the scientific integrity of data and to demonstrate the leading role and reputation of UK academia as a global knowledge centre for aviation research on topics that advance net zero aviation.

For Virgin Atlantic and our consortium partners, this flight also represents an opportunity to advance understanding on the non-carbon effects of flying, particularly contrails. [REDACTED]

Virgin Atlantic is committed to transparency, and even with the use of 100% SAF, carbon emissions will be c.80% less compared to a traditional fossil fuel flight. To address remaining emissions, we are working with a variety of cross sector stakeholders to reduce residual emissions in combination with the use of high quality carbon removal projects, thus supporting accounting frameworks and methodologies towards a truly net zero transition.

Delivering this flight is further evidence of the need for innovation and collaboration across the aviation value chain. For Virgin Atlantic that extends to our people and customers. As we work towards making this flight a reality, we will engage with all our stakeholders with a focus on active engagement. Extending the reach of this first of its kind flight to the businesses, communities and families that aviation connects globally. A call to action across the end-to-end journey for everyone to better understand the levers of change and the need for collective action to decarbonise UK and global aviation.

## Scope

### How does your project align with the scope of this competition?

The Virgin Atlantic Consortiums 100% SAF, Net Zero Flight (NZF) aims to demonstrate the commercial and operational viability of using 100% sustainable aviation fuel (SAF) on a flight in both engines of a [REDACTED] Boeing 787 across the Atlantic during calendar year 2023.

[REDACTED]

Led by an active UK airline, our bid includes a number of consortium members that brings together the necessary expertise across a variety of focus areas [REDACTED]

[REDACTED]

[REDACTED] whilst delivering innovations across a range of topics including [REDACTED]  
[REDACTED] the role of SAF in the non-CO2 effects of flying.

[REDACTED]

The consortium includes world-leading public and academic institutions that bring expertise to enable further research into increasing our understand of contrails

[REDACTED]

[REDACTED]

All learnings will be shared with the wider aviation community and we will actively engage with our people and communities to help them in their understanding of UK aviation's role in facilitating a true Net Zero aviation pathway.



## Application questions

### 1. Applicant location (not scored)

#### Applicant location (not scored)

##### Lead:

##### **Virgin Atlantic Airways Limited (VAA)**

The VHQ,  
Fleming Way,  
Crawley,  
West Sussex,  
RH10 9DF

##### Partners and subcontractors:

[REDACTED]

[REDACTED]

##### **Boeing United Kingdom Limited ("Boeing")**

25 Victoria Street,  
London,  
SW1H 0EX

##### **Rolls Royce plc ("RR")**

Kings Place,  
90 York Way,  
London,  
N1 9FX

[REDACTED]

[REDACTED]

**ICF International Inc (HQ) ("ICF")**

9300 Lee Hwy,  
Fairfax,  
VA 22031,  
United States

**ICF SH&E (UK subsidiary)**

Riverscape,  
10 Queen Street Place,  
London,  
EC4R 1BE

**Rocky Mountain Institute ("RMI")**

22830 Two Rivers Road Basalt,  
CO 81621  
United States

**Imperial College London ("ICL")**

Exhibition Rd,  
South Kensington,  
London  
SW7 2BX

**The University of Sheffield ("SU")**

Western Bank  
Sheffield  
S10 2TN

## 2. Project delivery

### **How do you intend to deliver the first net zero transatlantic flight running on 100% sustainable aviation fuels (SAF)?**

Virgin Atlantic (VA) is leading a Consortium ("Consortium") of leading aerospace, academic and consumer organisations to deliver a transatlantic, 100% SAF, flight ("NZF") in both engines of a Boeing 787 lifting off from London Heathrow (LHR) to John F Kennedy Airport (JFK).

NZF objectives:

- Technical/operational delivery of NZF in accordance with national/international aviation safety and regulatory frameworks
- Wider stakeholder initiatives and engagement, generating enduring benefits that outlive the test flight.

[REDACTED]

NZF will provide a viable industry case study demonstrating that we are innovating forward, sharing lessons learnt and engaging with and to the benefit of the UK aviation industry and wider stakeholders.

Starting on 7th December 2022 through to 31st December 2023, the Consortium will bring together leading aviation experts and strategic partners with a vast amount of experience in delivering complex and pioneering projects to the industry. VA is a long-standing advocate for SAF, with first-hand demonstrable experience of flying the world's first commercial flight operated on sustainable fuels in 2018.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[Redacted]

[Redacted]

**3. Partnerships and stakeholder engagement**

**How will you work with project partners and wider external stakeholders?**

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

4. Project plan & management

What are the key steps and timescales required to deliver your project on time and how will your project be managed?

[Redacted]

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

The NZF project will be delivered between 7th December 2022 to 31st Dec 2023  
(Delivery Phase)

[Redacted]

[Redacted]

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[REDACTED]

[REDACTED]

[REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]

[REDACTED]

## 5. Chosen technologies

What technological approach will you take to meet your project's objectives?

[REDACTED]

[REDACTED] with an estimated greenhouse gas (GHG) reduction of ~80% compared to conventional jet fuel.

[REDACTED]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

**6. Opportunities for SAF development & research**

How will this project help to maximise the potential for SAF development, and support aviation emissions reduction more widely?

[Redacted text block]



[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

## 7. Wider impacts & benefits

**What economic, social and environmental benefits do you expect your project to deliver to the UK, and to aviation and the wider SAF industry, and when?**

Supporting SAF production in the UK is one of three core pillars to VA's decarbonisation efforts.

Given the scale of the challenge, we are committed to sharing innovations and advancements we make across industry. This philosophy underpins the approach to NZF within the Consortium.

Sharing those lessons with our stakeholder community, alongside our consortium partners, will help to further support the acceleration of SAF uptake in the UK and beyond.

[Redacted]

[Redacted]

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

8. Risks

**What are the main risks associated with this project, and how will you manage them?**

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

9. Costs and value for money

How much will the project cost and how does it represent value for money for the government and the taxpayer?

[Redacted]

Funding requests £653,206

[Redacted]

[Redacted]

[Redacted]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

	Total costs (£)	Funding level (%)	Funding sought (£)	Contribution to project (£)	Other public sector funding (£)
VIRGIN ATLANTIC LIMITED Lead organisation	[REDACTED]	[REDACTED]	304,280	[REDACTED]	[REDACTED]
University of Sheffield Partner			89,328		
ROLLS-ROYCE PLC Partner			137,111		
Imperial College London Partner			95,306		
[REDACTED]			0		
ICF SH&E LIMITED Partner			27,182		
The Boeing Company Partner			0		
Rocky Mountain Institute			0		

	Total costs (£)	Funding level (%)	Funding sought (£)	Contribution to project (£)	Other public sector funding (£)
Partner					
Total			653,206		

Funding breakdown

	Total	Labour (£)	Overheads (£)	Materials (£)	Capital usage (£)	Subcontracting (£)	Travel and subsistence (£)	Other cost (£)
VIRGIN ATLANTIC LIMITED								
Lead organisation								
University of Sheffield								
Partner								
ROLLS-ROYCE PLC								
Partner								
Imperial College London								
Partner								
ICF SH&E LIMITED								
Partner								
The Boeing Company								
Partner								
Rocky Mountain Institute								
Partner								
Total								

Terms and conditions

Award terms and conditions

Partner	Funding rules	Terms and conditions
VIRGIN ATLANTIC LIMITED (Lead)	Subsidy control	
University of Sheffield	Subsidy control	



Partner	Funding rules	Terms and conditions
ROLLS-ROYCE PLC	Subsidy control	
Imperial College London	Subsidy control	
	Subsidy control	
ICF SH&E LIMITED	Subsidy control	
The Boeing Company	Subsidy control	
Rocky Mountain Institute	Subsidy control	

