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World Economic Forum (WEF)

Session 7: Financing Future Energy Hubs

Financing the Airports of Tomorrow

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02 Drivers behind aviation decarbonisation investment at airports

03 The airport decarbonisation journey

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01

Airports of Tomorrow

The forum's flagship aviation decarbonisation initiative

2024 Pillars of Work

Airports of Tomorrow

Cross-Pillar Advisory Partner: ACI World

Infrastructure

1 Energy Hubs

New infrastructure needs for hydrogen and battery electric aircrafts

Knowledge Partners: McKinsey & Company

Champions: DUBAIRPORTS, AIRBUS, AtkinsRéalis

2 Resilience

Maintaining safe, secure and sustainable operations amid a changing climate

Knowledge Partners: AtkinsRéalis

Champions: MOTT MACDONALD, SOFIA AIRPORT, ferrovial

3 Smart & Circular

Digitalization tools to optimize airports' operations

Knowledge Partners: ARUP

Champions: GTAA, industry.AI, IAWMA, MOTT MACDONALD, AtkinsRéalis

Sustainable Aviation Fuels (SAF)

4 Supply scaling

Overcoming regional barriers to scaling SAF worldwide

5 Financing

De-risking SAF investment by connecting public & private actors

Knowledge Partners: KEARNEY

Champions: AIRBUS, EcoCeres, world energy, European Bank for Reconstruction and Development, mundys Improve moving life

AoT brings together the aviation decarbonisation value chain

Airports of Tomorrow ecosystem

02

Drivers behind aviation decarbonisation investment at airports

Government Policy
Affects the availability of funding through incentives, and the legal basis for adopting decarbonisation measures (e.g. landing charges)

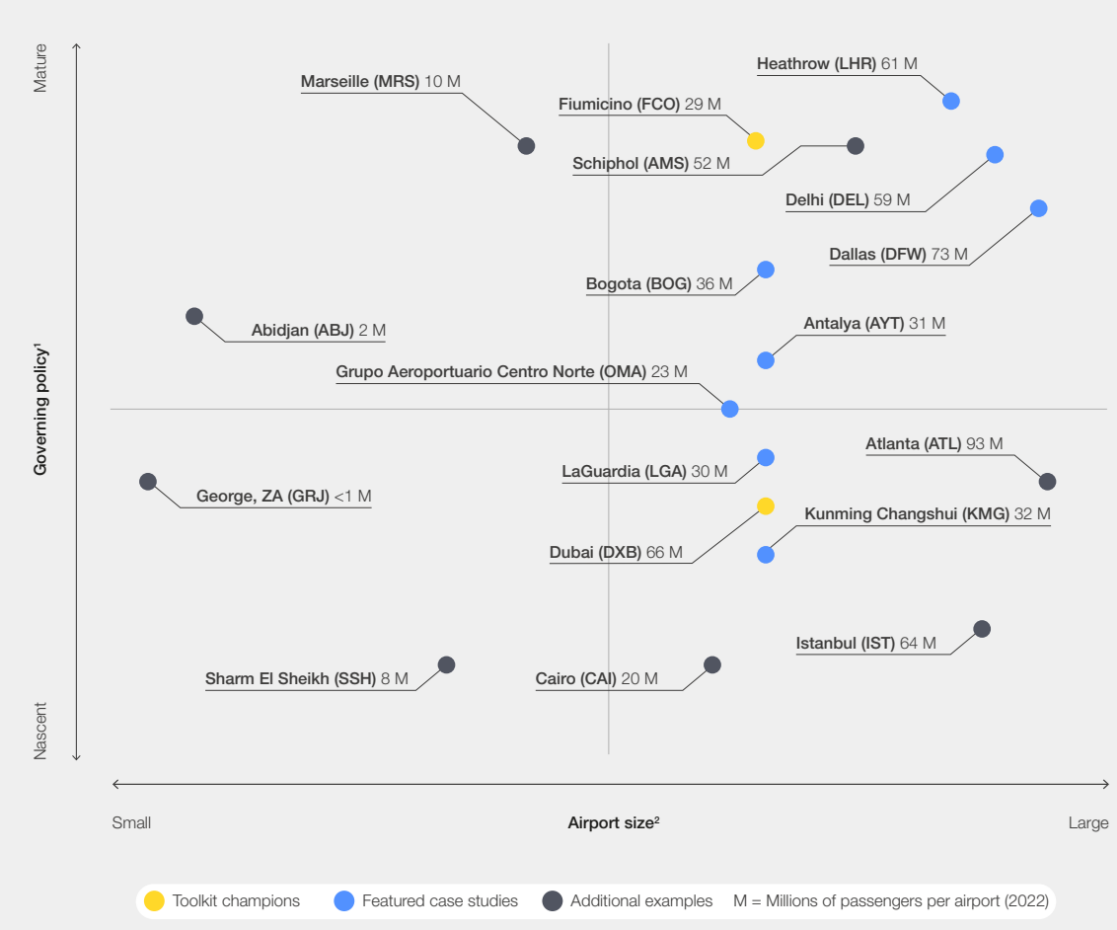
Financial Environment
Banks and financial institutions in “climate-mature” geographies will offer more green finance instruments and may even require climate disclosure

Airport Ownership
Government-owned airports will be subject to national priorities and restrictions while private airports may have flexibility if they are part of a multi-national firm

Airport Size
Larger airports can have stronger balance sheets, but not always – small airports may have greater flexibility in their project choices

Airport Archetype
City airports, global hub connector, cargo champions or leisure gateways will affect their users’ priorities

Public Opinion
Can marginally change the way projects are perceived, especially from a noise and nuisance reduction point of view



Airport decarbonisation drivers matrix

Government policy and airport size are the main drivers behind airport decarbonisation projects

These in turn have an impact on accessibility to finance. Airport size impacts revenue, risk profile as a borrower and access to financial institutions and investors.

Hence larger airports with stronger balance sheets often represent lower-risk investment for financial institutions, and may have access to a wider network of funding. Some exceptions apply.

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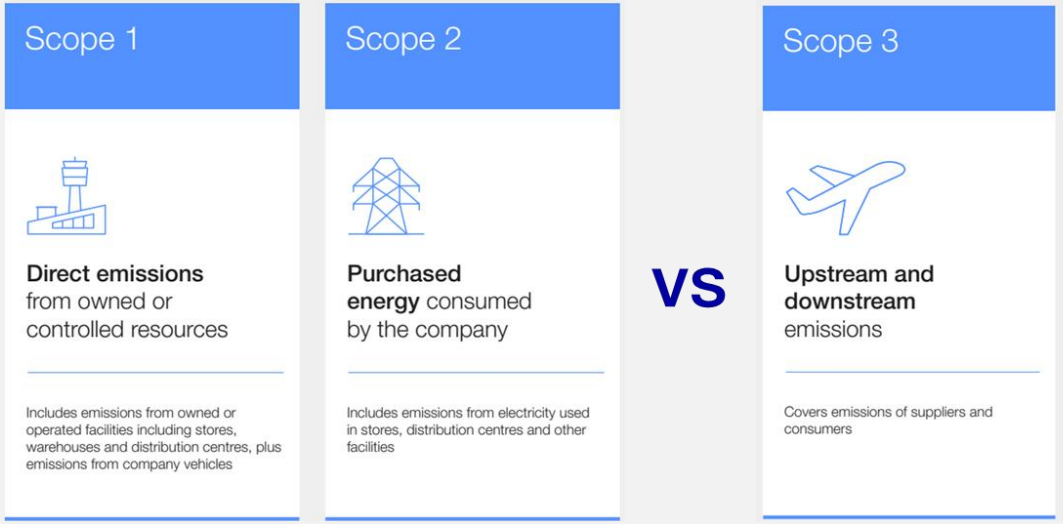
The decarbonisation journey for airports

Airport emissions breakdown



~ 3%

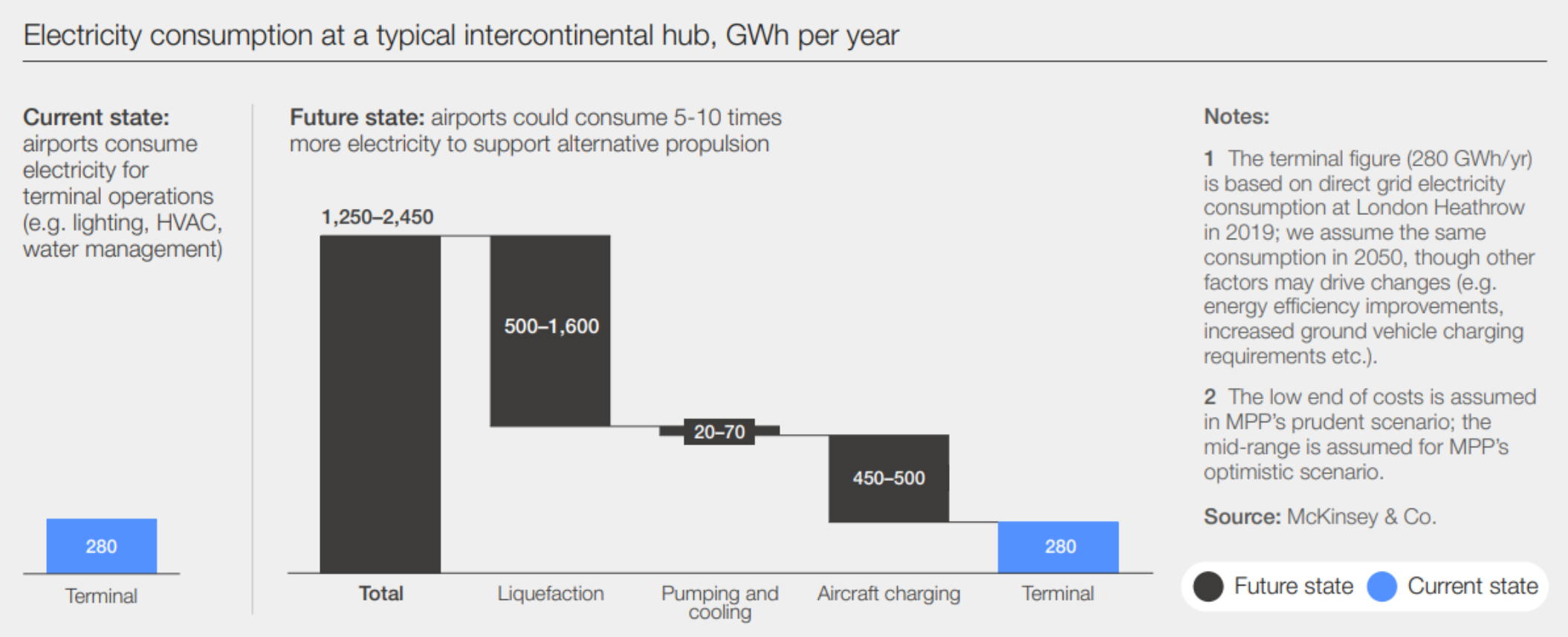
of the airport's carbon emissions profile

~ 97%

of the airport's carbon emissions profile

A number of short-, medium- and long-term options could be explored to address Scope 1 and 2 emissions, and to influence the supply chain on Scope 3 emissions reduction

More sustainable propulsion will require infrastructure changes at airports



Electricity consumption could increase 5-10x by 2050

New infrastructure value chains for battery electric aviation and hydrogen

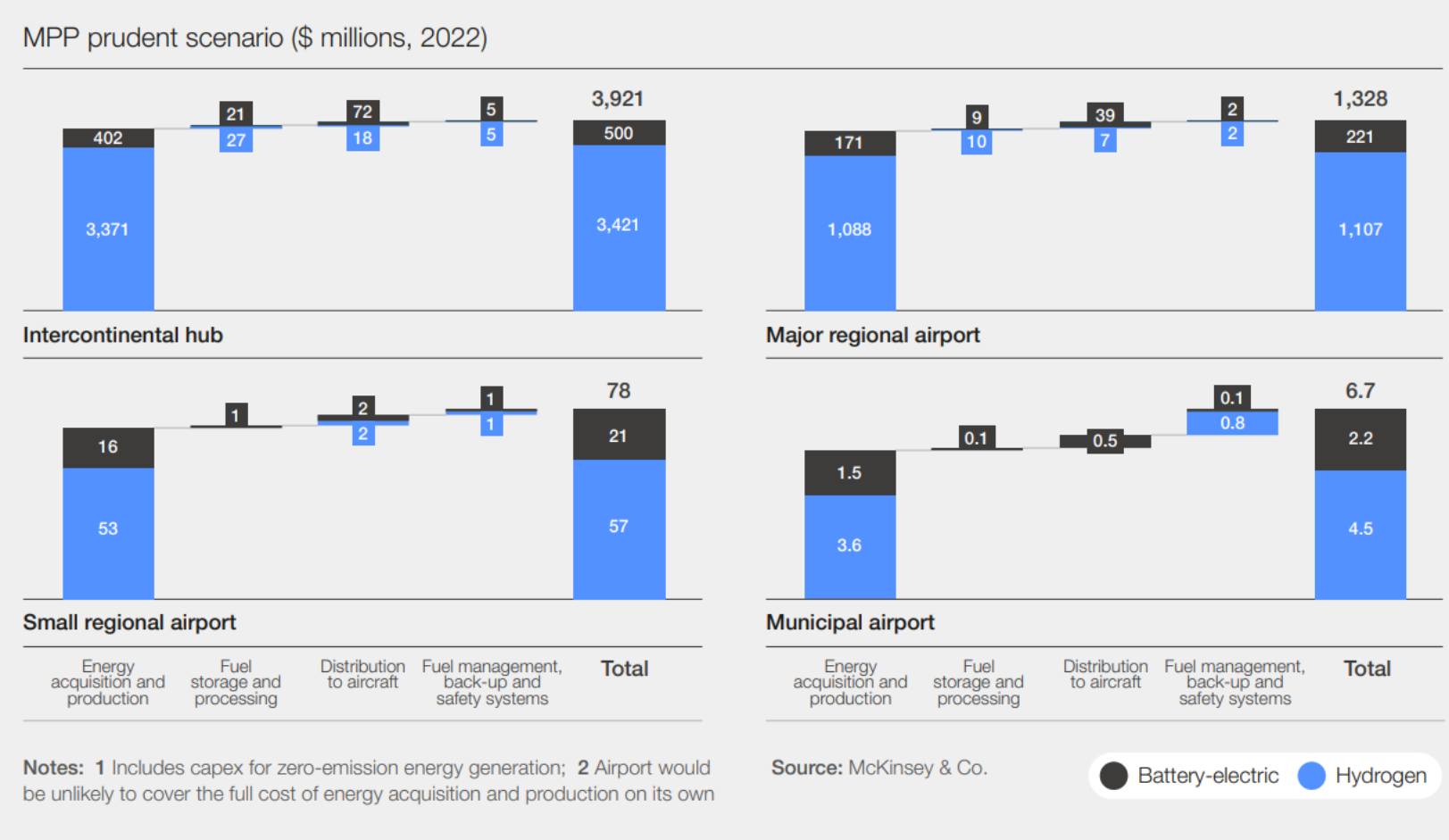
Land requirements should clean energy be generated onsite

Alternative propulsion could require $700bn-$1.7tn by 2050, with 10% on-airport

90% **Investment for off-airport infrastructure (power generation, hydrogen electrolysis and infrastructure)**

Investment needed for airport infrastructure will be significantly higher for larger airports, similar to the investment needed to build a new terminal

Cost to operators of alternative propulsion are expected to be around 76-86% higher over the market price for green electricity



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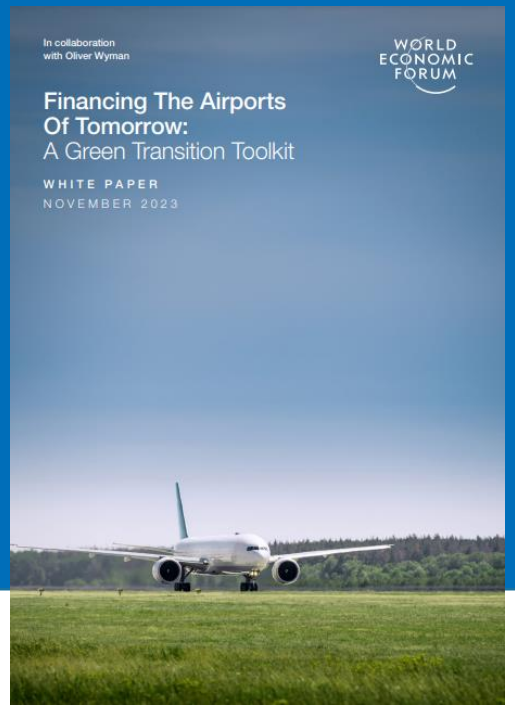
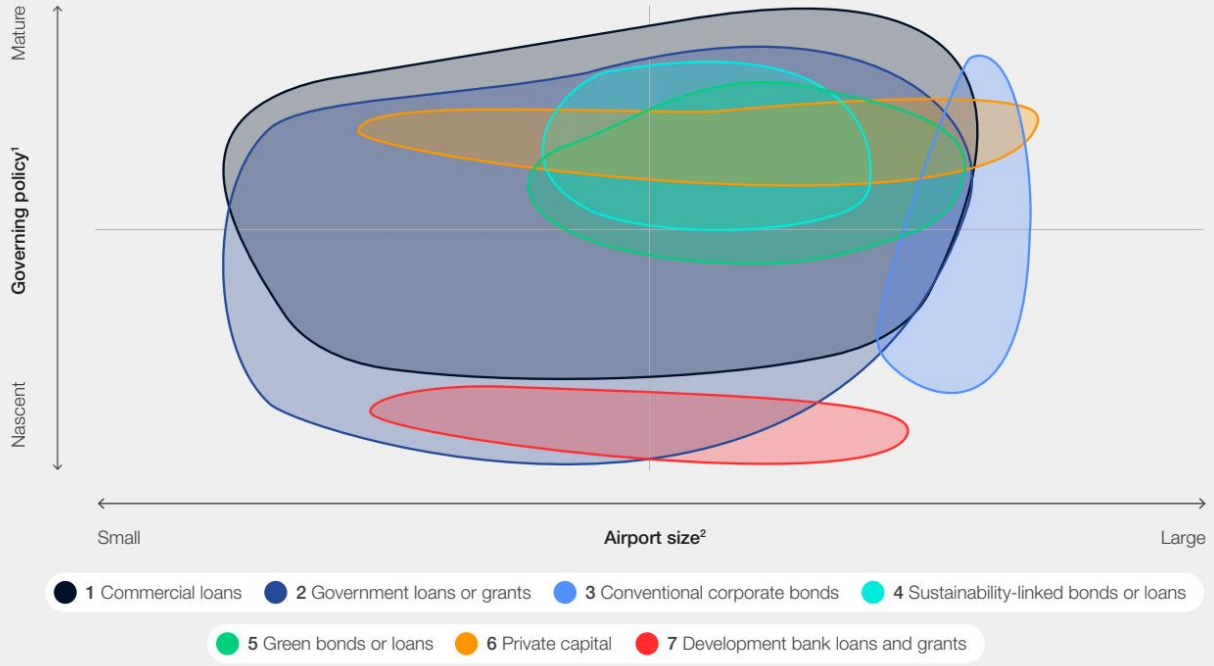
Our airport financing toolkit





While the specific financing options available to an individual airports may vary, funding sources that have been used to finance infrastructure, operations and energy transition can be grouped into seven main categories

A number of options can be available to finance airports' transition

Option	Description	Pricing	Sustainability	Example
Commercial loans	Debt-based capital from financial institutions at a fixed or floating interest rate	Depends on airport creditworthiness, yield, tenor and other factors	Decarbonisation or conventional projects	Antalya Airport, Turkey
Government loans or grants	Debt-based capital that does not need to be repaid	Often free (but competitively available)	Predefined uses, including decarb	El Dorado Airport, Bogota
Conventional corporate bonds	Debt raised from institutional investors such as pension funds, with coupons paid to bondholder	Average 2.96% coupon rate since 2018	Infrastructure, operations, expansion & decarb	Dallas Forth Worth, US
Sustainability-linked loans or bonds	Financial instruments that incentivise the issuer to achieve predetermined sustainability performance targets	Potentially lower interest rates than conventional loan/bonds	Linked to transition plans and carbon targets	OMA, Mexico
Green loans or bonds	Financial instruments that allow airports to raise debt-based capital for green projects only	Potentially less expensive	Only low-carbon projects	Indira Ghandi Airport, Delhi
Private capital	Private equity, venture capital and other forms of investment, incl. from institutional investors and PPPs	Slightly higher than conventional corporate loans or gov't loans	Conventional or decarbonisation projects	La Guardia, New York
Multilateral dev. bank loans / grants	Medium- and long-term capital for investment, often supported by technical assistance	Usually advantageous conditions	Unlikely to cover conventional projects	Kunming, China

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Next steps and year ahead

2024 Timeline

Indicative Dates

Airports of Tomorrow

Legend
- AoT initiative-wide events
- Infrastructure Pillar focused events
- SAF Pillar focused events
- World Economic Forum events
- Other key industry events

May
- 15-16/05 Sustainable Skies, Farnborough, UK
- **20-22/05 Future Aviation Forum'24, Riyadh, KSA**
- **Webinar:** Smart & Circular #1

June
- Annual Meeting of the New Champions '24 Dalian, China
- **Webinar:** Airport SAF incentives
- **Webinar:** Infrastructure Resilience #1

July
- **22-26/07 Farnborough Airshow**
  - Smart & circular airports roundtable
  - Electrification @ airports panel
- **SAF Roundtable, Hong Kong**

August

September
- 23-26/09 Energy Hubs US Roundtable Atlanta, Georgia
- **SAF Roundtable, Brazil**

October
- Global Future Councils Meeting '24 (TBD)
- **22-23/10 SAF Roundtable, Japan**
- **Webinar:** Blended Finance for SAF
- **Webinar:** Smart & Circular #2

November
- Conference of Parties (COP) 29 Baku, Azerbaijan
- **Webinar:** Infrastructure Resilience #2

December
- **Whitepaper: SAF** offtake manual for financiers

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Thank You

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