### Profile

- **Established**: October 1, 2008
  (Former Japan Development Bank: 1951,
   Former Hokkaido-Tohoku Development Finance Public Corporation: 1956)

- **President**: Seiji Jige

- **Total assets**: ¥21,160.5 billion

- **Loans**: ¥15,176.2 billion

- **Capital adequacy ratio**: 15.15% (Basel III, BIS standard)

- **Issuer credit ratings**: A1 (Moody's Investors Service, Inc.), A(Standard & Poor's Corp.),
  AA+ (Rating and Investment Information, Inc.), AAA (Japan Credit Rating Agency, Ltd.)

- **Number of employees**: 1,270

- **Offices**: Head Office, 10 Branch Offices, 8 Representative Offices, 4 Overseas Subsidiaries

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**Note**: Information above is on a non-consolidated basis.
DBJ’s History and Roles

Since the days of its predecessors, the DBJ Group has worked to **promote Japan’s sustainable development**. We have achieved this by responding flexibly to the issues of the day, through the periods of postwar reconstruction, high and stable growth, and the bubble economy and its collapse.

<table>
<thead>
<tr>
<th>Year</th>
<th>Themes and Issues of the Day</th>
<th>Projects</th>
</tr>
</thead>
</table>
| 1951~      | Rebuilding Vital Industry in the Postwar Era  
Nurturing of New Industry                                                                   | Shipbuilding Program                           |
| 1970-80s   | Strengthening International Competitiveness  
Stable Supply of Energy  
Reinforcement of Transportation                                                               | Sony Corporation  
LNG Power Plant  
Reinforcing Transportation                                                                   |
| 1985~      | Industrial Transformation  
Redevelopment of Infrastructure  
Regional Revitalization                                                                      | Kansai Airport  
Tokyo Dome  
Tateyama Kurobe Kanko                                                                       |
| 2008~      | Crisis Response (ex: Financial Crisis, COVID)  
Post-Earthquake Reconstruction  
Building of Sustainable Society                                                              | COVID Crisis Response  
Fasino  
Hydrogen Station                                                                           |

Source: DBJ HP
DBJ and the Aviation Industry

- DBJ has been **supporting the growth of the aviation industry for the last 40 years** and provided debt and equity finance for various key projects in aviation history.

- In 2017 DBJ **established the Aerospace Office** and expanded its activities to space industry.

Source: DBJ
DBJ’s Overall Activities in the Aviation industry

- DBJ provides financing to various players in the entire value chain of the industry.
- In recent years DBJ has been trying to expand its network and activities in the new area to contribute to the industry’s next phase of growth.

**Existing Players**
- Aircraft / Engine OEMs
- Helicopter OEMs
- Suppliers and Material Manufactures
- Airlines (flag carriers and LCCs)
- Aircraft / Engine Leasing Companies
- Airports
- Ground Handling Companies

**New Players**
- Startups
- VCs and CVCs
- Players in Advanced Air Mobility

Source: DBJ
DBJ’s Equity Investment and Activities in Advanced Air Mobility

- **SkyDrive** is a Japanese start-up, developing a 2-seater multicopter type eVTOL, and is aiming to launch their service at the Osaka Expo in 2025.

- **DBJ has made equity investment to SkyDrive in 2020**, and has provided various kinds of support including, introducing potential customers and industrial partners.

- Together with Keio University, **DBJ conducted research on use cases of eVTOLs in Japan** and published the report in 2021.

- The local government in **Ehime prefecture** and DBJ are working together to make eVTOL reality in Ehime. Ehime and DBJ hold the symposium in July 2022 and **launched the roundtable** which is consisted from various local players.

Image: SkyDrive HP
Symposiums on the Topic of “Manufacturing eVTOLs” hosted by DBJ

Source: DBJ
Local Governments in Japan with an Interest to eVTOL

Source: DBJ
Financing Market for the Commercial Aviation Industry

- The rapid growth of the three main business in the commercial aviation industry cannot be achieved without the active support from the financing sector.
- Various types of finance products are available for these players since 1) **their cash flow is predictable** and 2) **the value of their assets is stable**.

<table>
<thead>
<tr>
<th>Manufactures</th>
<th>Airlines</th>
<th>Airports</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️ Government provides a strong financial support for R&amp;D.</td>
<td>✔️ Aircraft lessors and financiers support the financings of aircrafts.</td>
<td>✔️ Many airports around the world are privatized.</td>
</tr>
<tr>
<td>✔️ Various types of financing are available to aircraft OEMs and suppliers just like any other industries.</td>
<td>✔️ Around the half of the global fleet is owned by leasing companies.</td>
<td>✔️ There is a secondary market for airport transactions.</td>
</tr>
</tbody>
</table>

**Examples of Types of Finance**

- Bank Loan
- Bonds
- Lease
- Structured Finance
- Equity Finance

Source: DBJ
Funding by eVTOL Startups as of August 2023

Million USD

Source: SMG Consulting and Others
## Examples of Investors of eVTOL Startups

**Aircraft OEMs and Suppliers**
- Boeing
- Embraer
- Rolls Royce
- Honeywell
- BAE
- Thales

**Airlines including Leasing Companies**
- American
- United
- Delta
- Skywest
- Republic
- JAL via CVC
- Avolon
- Tokyo Century
- Azorra

**Automobile Companies**
- Toyota
- Stellantis
- Daimler/Geely
- Continental
- Xpeng
- Uber
- SUZUKI

**Others**
- Microsoft
- NTT
- Amazon
- Tencent
- Palantir
- Black Rock
- Fidelity
- Institutional Investors
- VC/CVC
Emerging Opportunities to Finance in the eVTOL Industry

**Step 1: 2010~**
- eVTOL Aircraft Development
  - Startups
  - Existing OEMs
  - Suppliers
- VCs, Investors, Governments, R&D Spending

**Step 2: 2024/25~**
- Operation & Infrastructure
  - Airlines
  - Helicopter Operators
  - Vertiport
- Financial Institutions, Governments

**Step 3: 2030? 35?**
- Autonomous System
  - UTM System
  - Vertiport Management (Autonomous)
  - Beyond 5G/6G
  - Cybersecurity
- Governments, R&D Spending

Source: DBJ
**Issues for eVTOL Aircraft Finance**

<table>
<thead>
<tr>
<th>Residual Value</th>
<th>Commercial Aircraft</th>
<th>eVTOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deal Size</td>
<td>More than 100 million USD per aircraft</td>
<td>Less than 5-6 million USD per aircraft</td>
</tr>
<tr>
<td>Units Sold</td>
<td>Predictable</td>
<td>Unpredictable</td>
</tr>
<tr>
<td>Useful Life</td>
<td>20-25 years</td>
<td>Unknown (7-8 years?)</td>
</tr>
<tr>
<td>Tradability</td>
<td>Secondary Market</td>
<td>No Secondary Market</td>
</tr>
<tr>
<td>Scrap Value</td>
<td>Exist</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

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Providing financing for the current eVTOL models comes with large risks from financers’ perspective, making a corporate loan / financing lease (which is generally more expensive) an only option for many operators.

Source: DBJ
Issues of Vertiport Project Finance

- Establishing the eVTOL infrastructure, particularly vertiports, will likely be a **long-term investment requiring significant capital**. Both private and public money will be needed to support the development and operation of this new asset.

- However, it will be difficult to attract private capitals at the early stage of the eVTOL industry due to **the unpredictability of cashflow or revenue** which is likely to be consisted only from landing fees.

- Here, it is also important to note that investors who invest in infrastructure look for returns with long term stability unlike investors who invest in start-ups and venture capitals.

Expected cashflow from investing in infrastructure

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash Inflow</th>
<th>Cash Outflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 2</td>
<td></td>
<td></td>
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<tr>
<td>Year 3</td>
<td></td>
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<tr>
<td>Year 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 5</td>
<td></td>
<td></td>
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</table>

Expected cashflow from investing in startups

<table>
<thead>
<tr>
<th>Year</th>
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<tr>
<td>Year 5</td>
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</table>

Source: DBJ
Players in the commercial aviation industry have access to various types of finance products for their business expansion.

Although there has been a massive inflow of capital into the eVTOL industry, those investments mostly take the form of startup investment which is used to fund the development of eVTOL aircrafts.

Now that there is going to be several certified eVTOLs in the next few years, it is time to start to think about how to finance operators and infrastructure, particularly vertiports.

Due to the unpredictability of CF and asset value, it is not easy to attract large capital inflows into the eVTOL industry from a private sector, which in turn limits the scalability of this industry at the early stage.

In order to build the eVTOL infrastructure, national / local governments may need to play a major role with the support from the private industry.

It might be important for academic and research communities like ICAS to have more dialogue with governments and traditional players from other industries and support them to establish a clear vision / road map for eVTOL.