

# To be a leading Eco-friendly Airline

**11. October, 2012**

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**All Nippon Airways**



We Fly 1st. ANA

# 1-0 Agenda

- 1. Outline of ANA**
- 2. IATA Vision for the Future**
- 3. ANA's Initiatives for less Fuel**
- 4. ANA's Bio-fuel Demonstration**
- 5. Conclusion**

# 1-1 Outline of ANA

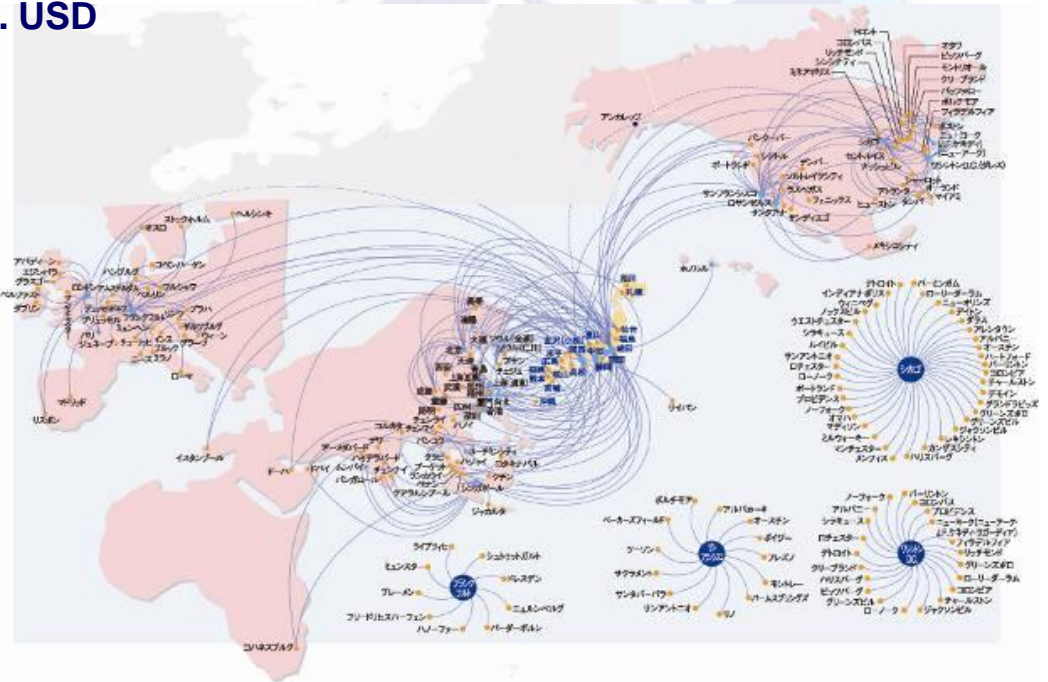
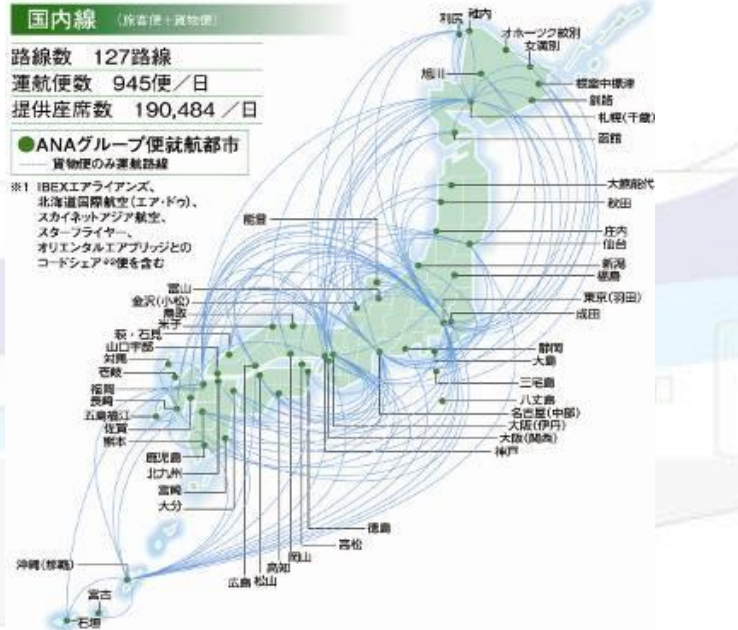
- Passengers 39.020 (FY2011: million)
- Operating Revenue 1,411,504 JPY\*
- Operating Income 97,022 JPY
- Recurring Income 68,455 JPY
- Net Income 28,181 JPY

July 2012	Domestic		International	
	Passenger	Cargo	Passenger	Cargo
Routes	106	4	55	9
Flights	797 /day	5 /day	860 /week	106 /week

\*approx. 18,032 mill. USD

## ANA's Network

2010年7月1日現在



# 1-2 Outline of ANA

**Fleet: 13 types / 230 aircrafts** As of September. 2012

**B787-8**

15 (most in the world)



**B747-400**

7 (domestic only)



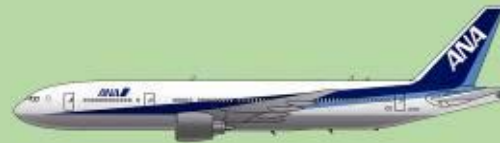
**B777-300**

26



**B777-200**

25



**B767-300F**

9



**B767-300**

54



**A320-200**

21



**B737-800**

18 (domestic only)



**B737-700**

16 (domestic only)



**B737-700ER**

2 (int'l only)



**B737-500**

16 (domestic only)



**DHC8-400**

19 (domestic only)



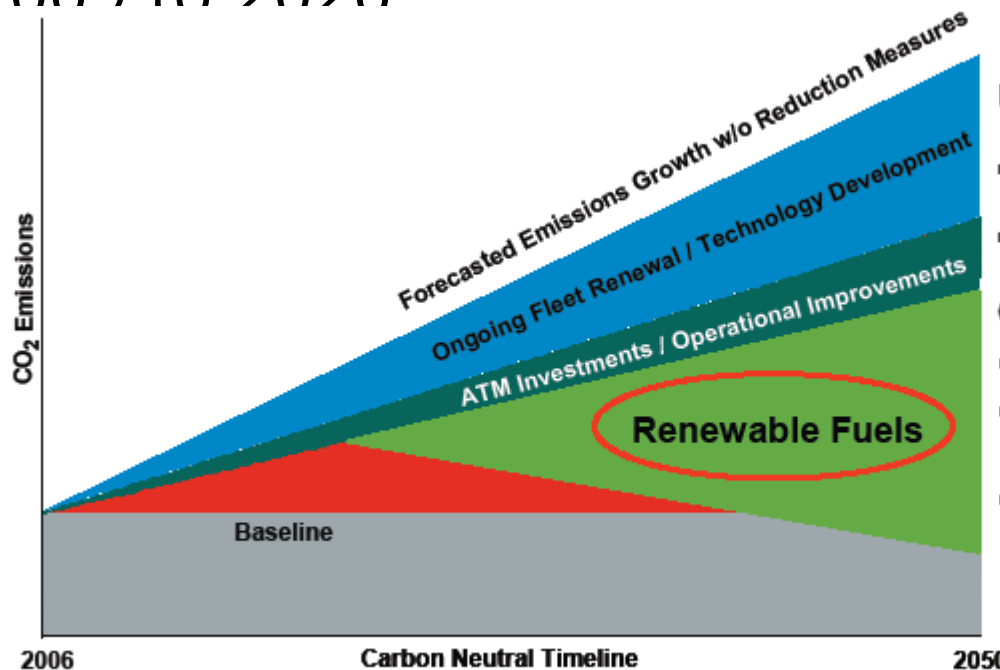
**DHC8-300**

2 (domestic only)



# 2. IATA Vision for the Future

- A cap on aviation CO2 emissions from 2020 (Carbon Neutral Growth)
- An average improvement in fuel efficiency of 1.5% per year from 2009 to 2020
- A reduction to 200 level



### Using less fuel

- Efficient airplanes
- Operational efficiency

### Changing the fuel

- Lower lifecycle CO<sub>2</sub>
- No infrastructure modifications
- "Sustainable Biofuels"

itive

2006

Carbon Neutral Timeline

2050

Presented to ICAO GIACC/3 February 2009 by Paul Steele on behalf of ACL, CANSO, IATA and ICCAIA

出所: ICAO



we fly for ANA



# 3. ANA's Initiatives for less Fuel

## 1. New Aircrafts

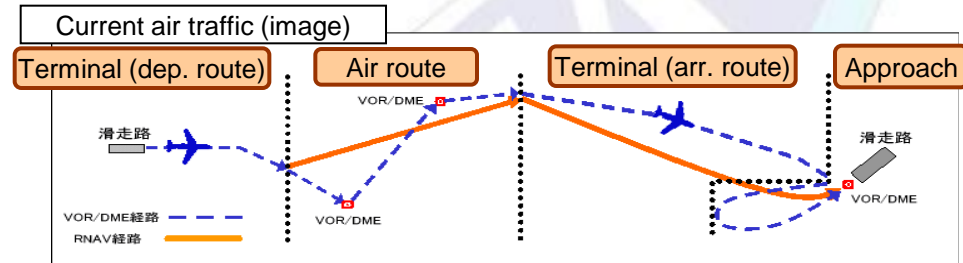


Introducing the most advanced aircraft Boeing 787 first in the world.

ANA succeeded in reducing fuel consumption and CO2 emissions **▲21%** less than former same size airplanes on Tokyo ⇔ Frankfurt route.

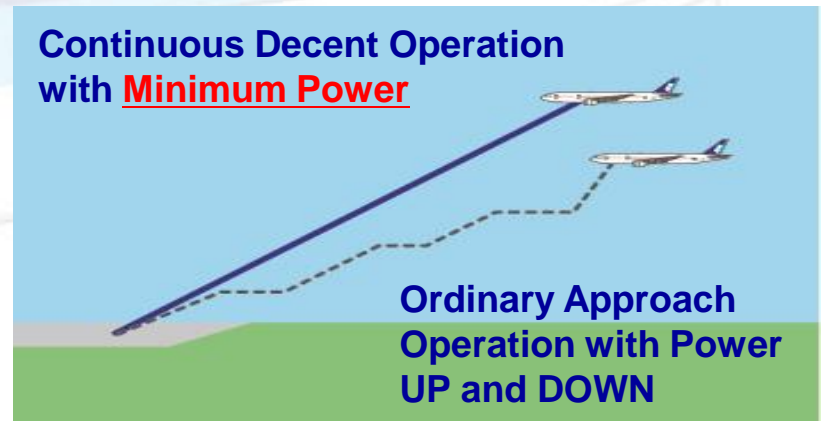
## 2. Advanced Flight Operations

Shortening Flight Distance ~ RNAV ~



Shortening flight distance and time by selecting and planning flight routes using **GPS** and other advanced systems.

Saving Energy ~ CDO ~



# 3. ANA's Initiatives for less Fuel

## 3. Less Weight

Light Weight Container with CFRP



**▲30%** reduced weight than traditional aluminum container

## 4. Water Wash of Engines



Light Weight Dishes and PET Bottle



## 5. Other example



Intensive Use of GPU (Ground Power Unit) at Airports to reduce **90,000tonCO2/year** (approx. 1.1% of total)

# 4. ANA's Bio-fuel Demonstration

## April 16, 2012, First Trans-Pacific Bio-fuel flight in history.

ANA's 7th B787 Dreamliner delivery flight from Boeing's Everett airfield to Tokyo Haneda Airport was powered partially (15%) by Bio-fuel. This endeavor was collaborated project with the Boeing and the first experience for ANA and B787.

Feedstock of the fuel was Used cooking oil and mixed with Kerosene diluted to 15%.

As for feedstock, ANA has invested to Japanese Venture farm of Algae made fuel to fly its second one with it in the very near future.



Sustainable Aviation Bio fuel logo.





# 5. Conclusion

- Aviation emits CO2 to fly without any option.
- Many initiatives to mitigate the impact on Environment taken.
- Complements for technology, infrastructure and advanced operations are necessary.
- **Bio-jet fuels seem to be the answer.**
- Already certified technology. (ASTM D7566 July, 2011)
- Needs further steps to scale-up and commercialize.
- **Airlines like to procure Bio-fuels** if they are of good quality, quantitative for vast supply and reasonable enough to afford,

*ANA painted some planes green.*

**ANA**

A STAR ALLIANCE MEMBER

Thank you very much for listening !



*Think Globally, Act Locally*