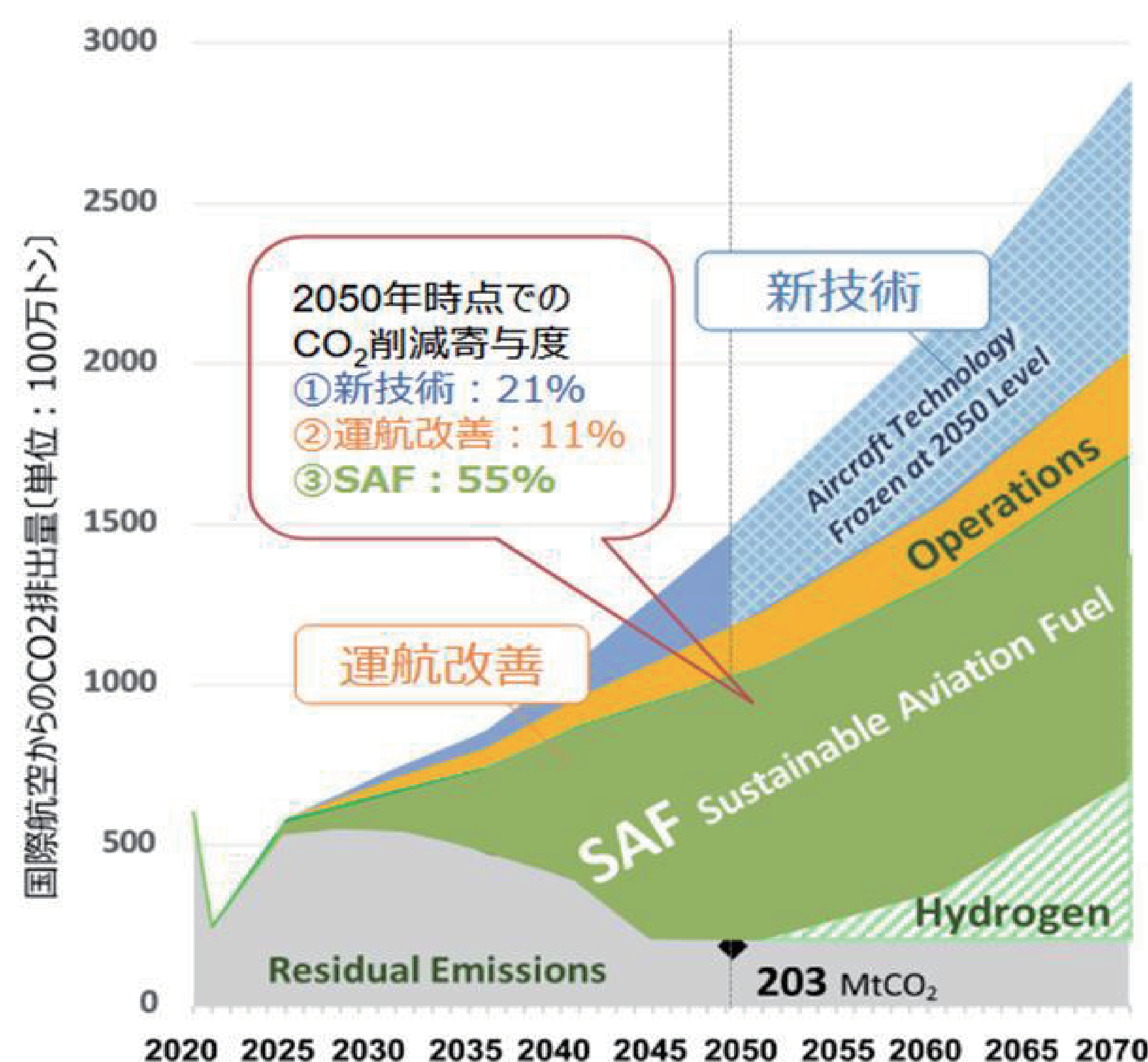


Biomass Energy



Necessity of SAF(Sustainable Aviation Fuel)

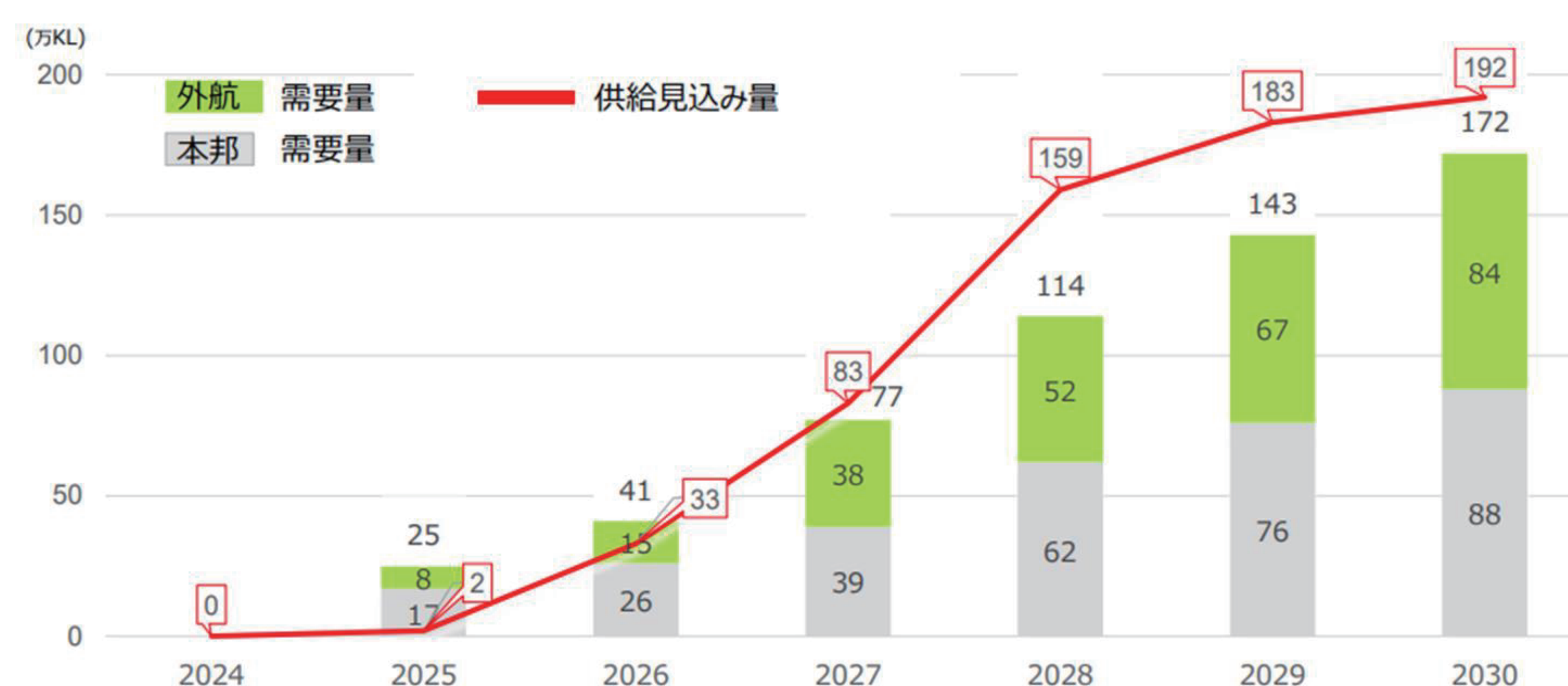
- ICAO(The International Civil Aviation Organization) has announced a target of zero net increase in GHG emissions from 2020 to reduce the amount of them in the international aviation sector.
- The solutions are composed of development of new aircraft, improvement of flight route, and introduction of SAF. Above all, SAF is expected to take a great role, for 55% of GHG reduction effect will be brought by SAF in 2050.
- To meet the ICAO's CO₂ emissions reduction target in the international aviation sector, it is expected to be a significant jump in demand for SAF on a global scale.



国際航空からのCO₂排出量予測と排出削減目標のイメージ
 ICAO LTAG Reportから抜粋（IS3: ICAOによる野心的なシナリオ）/経済産業省資料

Domestic trends

- A goal that 10% of jet fuel consumption for international flights is to be replaced by SAF in 2030 has set. (equal to 172million kL)
- Supply of SAF in 2030 is expected to be 192 million kL
- HEFA pathway from used cooking oil and ATJ pathway from bioethanol have main rolls in SAF supply.

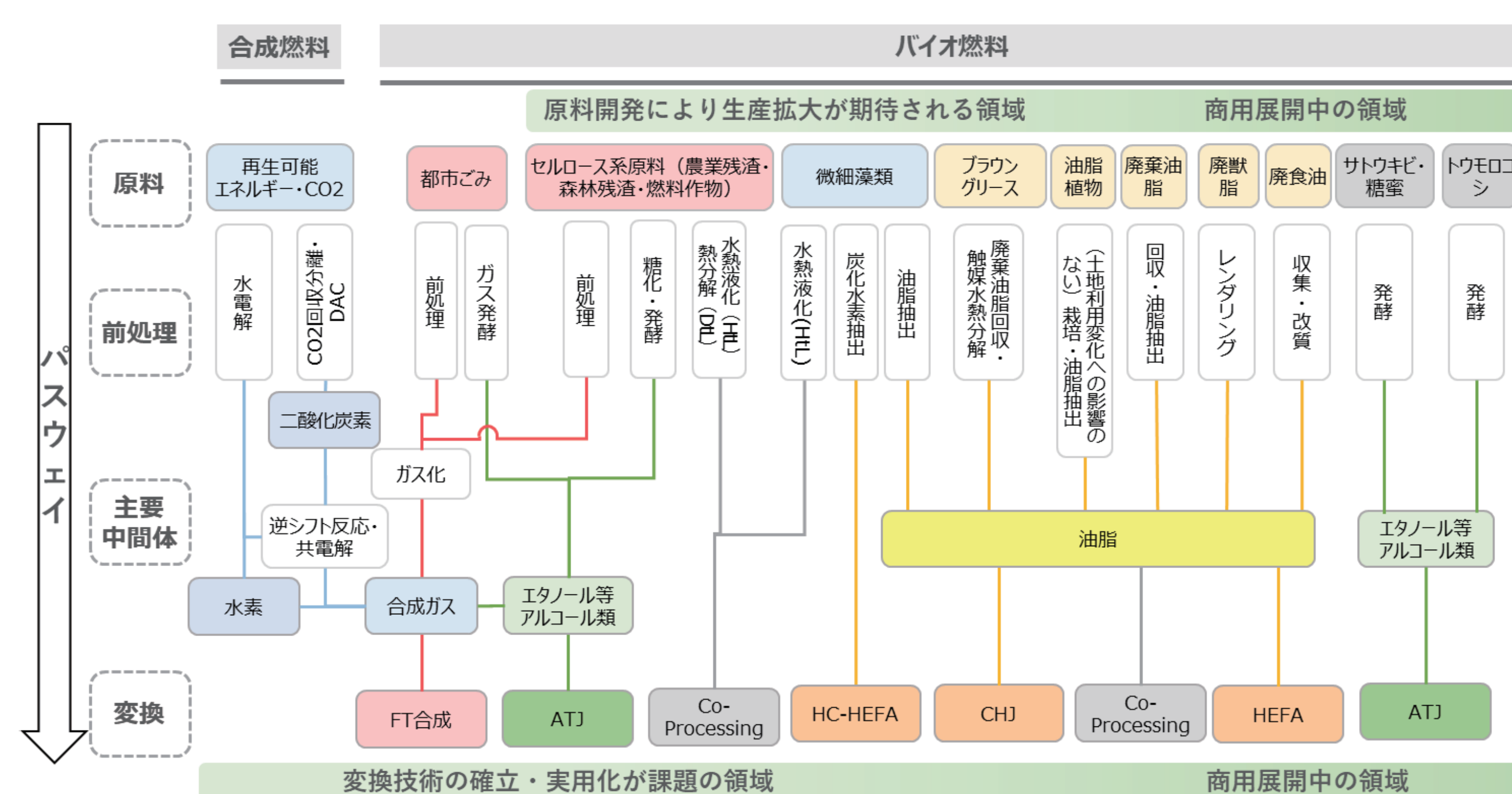


国内のSAF需給見込み

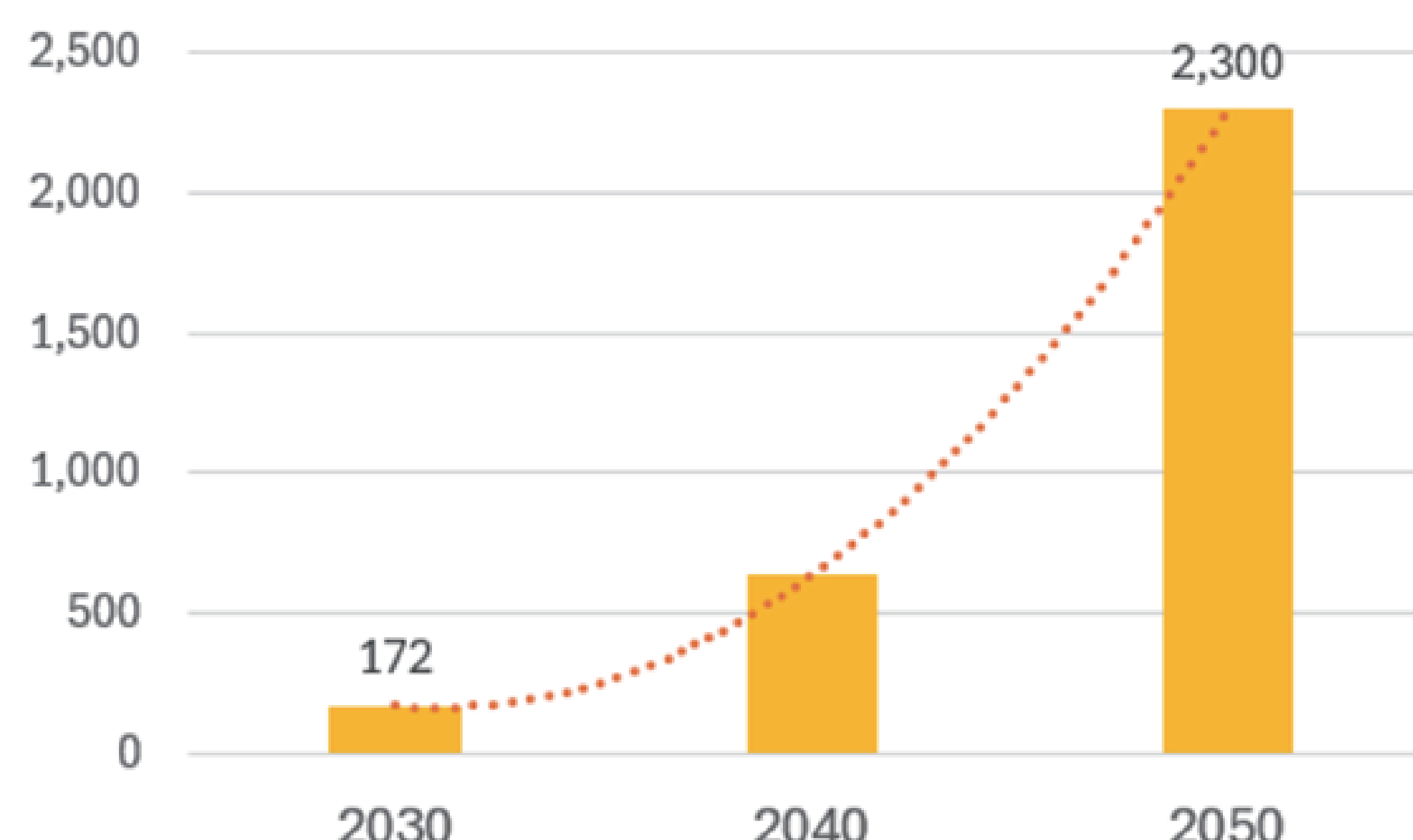
出典：第4回SAFの導入促進に向けた官民協議会資料 / 経済産業省、国土交通省

Processes of SAF production

- There are various combination of SAF feedstocks and processes, such as HEFA from oil feedstock, ATJ from bioethanol, gasification and FT synthesis from cellulosic biomass and waste, and E-fuel using CO₂ and hydrogen as feedstock.
- SAF demand is expected to be expand after 2030, and it is crucial to develop various SAF feedstocks and processes.



<SAF必要量 ～2050>



出典：2050年 航空輸送におけるCO₂排出実質ゼロに向けて JAL/ANA共同レポート