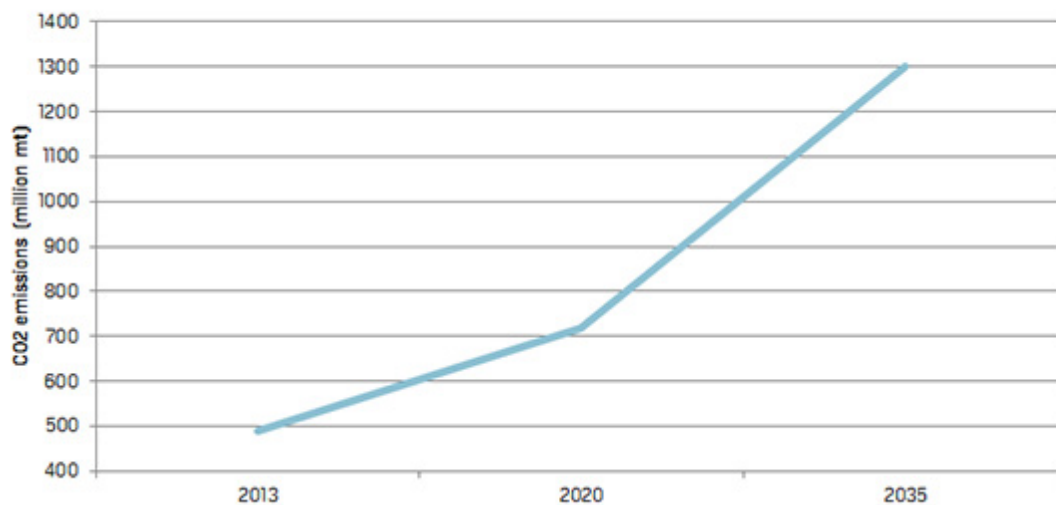




## 2016-IP37: Emissions from Aviation the Next Challenge?

Global CO<sub>2</sub> emissions from aviation has been estimated at 490 million Mt in 2013, which represents about 1.5% of global CO<sub>2</sub> emissions from fossil fuel combustion. However, the international aviation industry is growing at about 4% to 5% per year and whilst it is achieving fuel efficiency gains of about 1% to 2% per year, that growth translates into expected growth of about 3% per year to the sector's GHG emissions, even as technological improvements continue. As a result, aviation's emissions are expected to grow to between 682 and 755 million Mt by 2020 and increase further to between 1.223 billion and 1.376 billion Mt by 2035.

Source: ICAO/Stockholm Environment Institute  
**Projected global CO<sub>2</sub> emissions from aviation**



Source: ICAO/Stockholm Environment Institute

Some of this emissions growth could it is claimed be offset by, the supply of alternative jet fuels. It is suggested that between 100 to 300 million Mt of CO<sub>2</sub> could be avoided by using biofuels in the future. Of course this assumes the biofuels are produced with little or no land use change impacts and backed up by strong sustainability certification schemes.

The problem then becomes as other sectors, like power and industry, are required to reduce emissions as part of global climate agreements, the aviation sector will be increasing their offsetting the climate benefits of GHG mitigation in those other sectors.

So what is the proposed solution to this problem? The United Nations International Civil Aviation Organization (ICAO) will meet in the coming days to take a decision on a global market-based measure to control aviation's greenhouse gas emissions. This of course is a very different approach to that in other sectors. The ICAO is proposing to create a global carbon market for airlines, by requiring operators to buy carbon offset credits to match any growth in greenhouse gas emissions over and above their 2020 level, alongside other measures to curb emissions e.g. (efficiency and biofuels).

The ICAO's Global Market-Based Measure for aviation emissions (called CORSIA — the Carbon Offsetting and Reduction Scheme for International Aviation) will require the global aviation industry to benchmark its GHG emissions at 2020 levels and offset any additional emissions growth by buying carbon offset credits for each additional ton of CO<sub>2</sub> equivalent emissions. Once agreed airlines will



have to bear the cost for emitting carbon dioxide, which it is hoped will incentivise them to become more energy efficient. As aviation fuels prices are one of their biggest operating costs, airlines it is felt are already focused closely on fuel efficiency gains. In time, it is considered that the CORSIA system will act as disincentive to continued operation of the least efficient engines and most emissions-intensive fuels, while providing a relative advantage for those airlines using high efficiency technology and cleaner fuels.

With the GHG growth projections set out earlier, the total demand for carbon offset credits from aviation is forecast at 3.3 billion to 4.5 billion Mt in the period 2020-2035.

The ICAO meets in Montreal between September 27 to October 7, and expectations are that this approach will be agreed by the parties. If it is, it will be the first time any sector has agreed a global market-based system for controlling emissions.

**John Gale**

**28/09/12**