

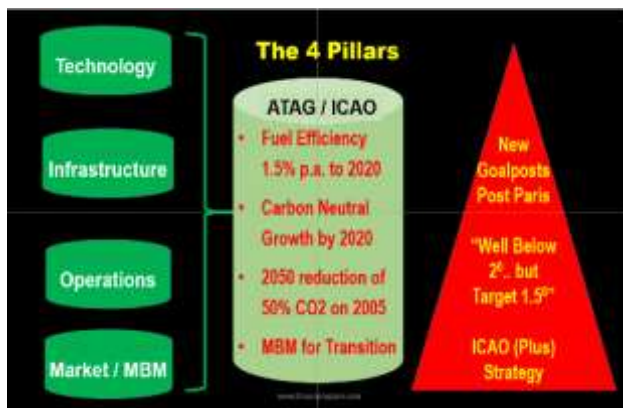


“Sustainable Aviation and Green Growth”



Paris “Key” Outcomes

- Hold Global Warming well below 2°C by 2050
- Common But Differentiated Responsibilities
- “Bottom Up” Intended Nationally Determined Contributions
- 5 year “Ratchet” Carbon Reduction
- Finance transition by Public and Private Partnerships
- Leave Aviation to ICAO (4 Pillar Strategy) – for now.



The 2015 Paris COP 21 meeting was a landmark commitment by virtually every State to work together to eliminate all greenhouse gases, as well as a new realization that a 2 degrees’ temperature rise is a maximum for tolerable lifestyles.

National commitments will be reviewed every 5 years, with a view to ratcheting them to higher levels and a figure of less than 1.5 degrees is increasingly emerging as a long term sustainability goal.

Aviation will be integrated into this framework by an agreement at the end of 2016 through a parallel track in the International Civil Aviation Organization (ICAO).

It is the responsibility of ICAO to at least meet the Paris directions - and ideally surpass them. Its “four pillar strategy”, developed with full engagement of the industry has been established to do that – with a combination of technology, infrastructure, operations and market based, carbon reduction measures.

But it will need a more ambitious long term vision, collective industry engagement and cross silo government - as well as civil society – support, if we are to meet a 1.5 degrees’ scenario.

In short, there has also to be a vision of a no carbon aviation future and the entire Travelism (Travel & Tourism) sector and its stakeholders have very good reasons to support such an ambitious goal. Aviation is central to almost all international travel and to substantial domestic patterns around the world.



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Paris was just one of a series of connected 2015 Heads of State Summits on sustainable development goals (SDG), financing and climate resilience, as well a 2016 Habitat for Humanity Summit.

This is a new, UN driven, platform for Green Growth, with a 2030 date for achievement of the Sustainable Development Goals (SDG's) with 17 Goals, 169 Targets and 304 indicators on “Transforming Our World” and with 2050 as the ultimate deadline for Climate stabilization

The fact is that over the past decade, the Climate Change goal posts have moved significantly.

Today the clear life threatening impacts are more widely accepted;

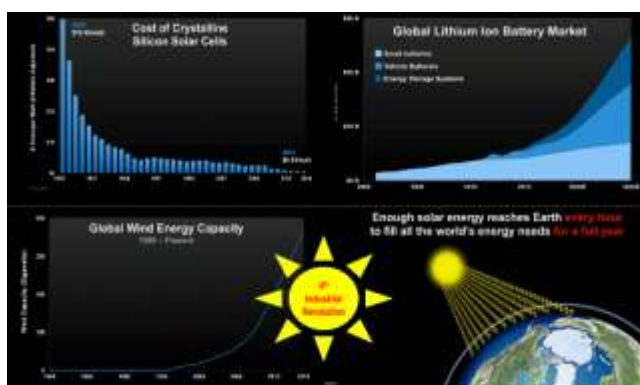
- Ice caps are melting, oceans are warming and greenhouse gases are growing – all at unsustainable levels.
- There are more extreme storms, floods, fires, droughts, air pollution and migration.
- In short we face an existential threat in a matter of decades, if we fail to act coherently now.

Against this backdrop the current aviation goals, show a 2050 reduction of carbon to 50% of historic levels, while encompassing continuous high growth and very strong socio-economic development.

This is a commendable control on carbon growth rates, but it still leaves high annual carbon output and progressively increasing exposure for the sector as a whole.



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Analysts & activists increasingly identify aviation with greenhouse gas build up – pointing to projected 2050 carbon output forecasts & societal impacts of global warming. They often group it with other high carbon output activities – including surface transport.

But the fact is that Aviation – unlike almost all other sectors – currently has limited alternative fuel potential, so its carbon output, relative to other sectors is escalating.

Aircraft have been projected to account for between 10-20% of total 2050 annual global carbon output, compared to 2-3% today - *without covering other greenhouse gases.*

The sector will be increasingly challenged unless we adopt visionary new strategies & focus resources. There are no options if the evidence that Climate Change is existential is right.

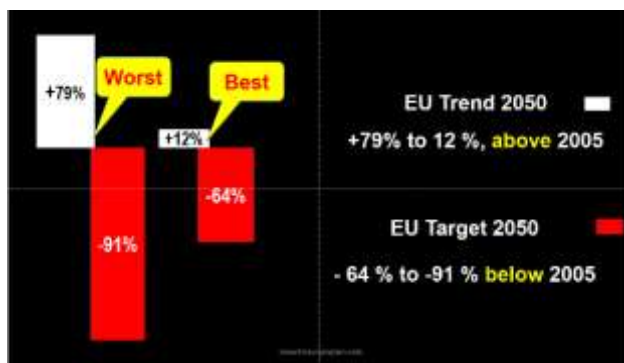
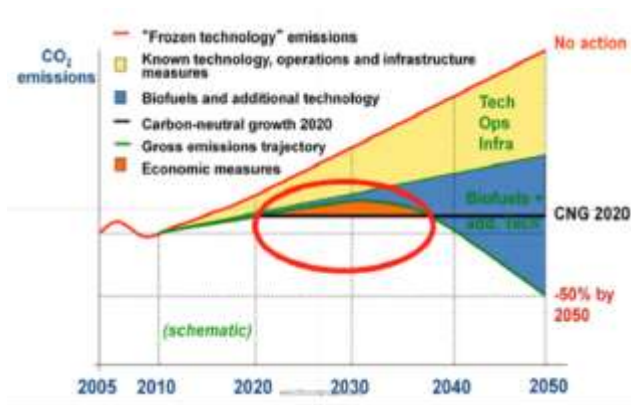
The rest of the world is doing exactly that, by global, regional, national & local government carbon reduction strategies.

Increasingly fossil fuel subsidies are being slashed and in some cases, transferred to renewables. We are seeing a plethora of nature based solutions, circular economy initiative, smart city actions and the like. With private sector led change and public/private collaboration at the core.

In addition, renewable energy, available to other sectors, is booming, prices are decreasing and efficiency improving. According to the World Economic Forum, we are on the threshold of a 4th industrial revolution powered by cheap, widespread carbon clean energy



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“Need a totally new approach to transformative energy solutions for the future. We can't wait for the system to change through normal cycles.” Breakthrough Energy Coalition



Aviation's 4 Pillar strategy will produce serious action to reduce carbon and allow the sector to grow. Continuingly improved airframe technology, straightening air routes, bio-fuels and a market for carbon, with a global cap & trade system will all have major effects

But the structure has been built on a foundation that assumed a residue of 50% of historic carbon levels with no viable propulsion alternative. The 1.5 degrees “existential” target means we must change that core assumption

We need a *2050 No-Carbon-Aviation “Moon-shot”* - accelerating the search for alternative aviation fuels and propulsion. Investment in substitutes for fossil fuel is increasing dramatically – from public research and incentives, to industry resource re-allocation& impact investment.

The new Bill Gates led “Breakthrough Energy Coalition” is raising billions of dollars for this massive refocus on radical technology innovation. Air Transport fuel must be a priority. It will need new coalitions, organization, metrics and financing.

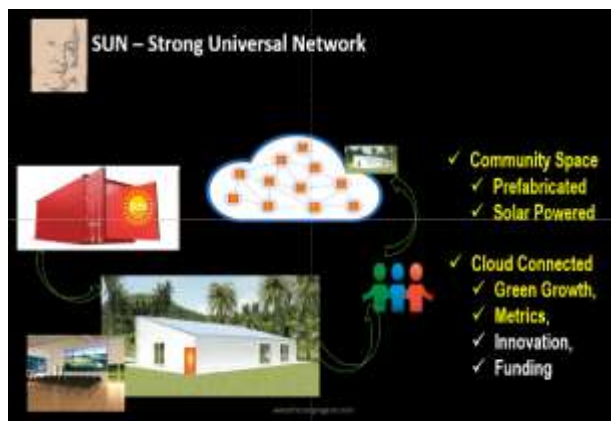
On the critical financing issue, any proceeds from market mechanisms, climate taxes or passenger levies on the sector would form a substantial “Moon-shot” funding base.

The entire Travelism sector – the Travel and Tourism supply and value chain - has a massive interest in supporting the Moon-shot initiative.

It's not simply self-interest - the G20 and the UN system has identified Travel & Tourism as a vital global employment, trade and development agent.



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Travelism is a growth engine - it is particularly important as a catalyst for small island and developing states. However, there are clear adverse environmental impacts, that flow from the travel ecosystem. These must be measured and managed coherently with the benefits, to show the net good that the sector delivers. Heavy fossil fuel use will be an increasingly exposed element

The world is moving towards a Green Growth framework with little reliance on Fossil Fuel, ultimate 2050 transformation to renewable clean energy, social inclusion based on the SDGs, dynamic innovation accelerated by the Internet of Things and a base of resource and biodiversity conservation. It is now linked to the UN 2030/2050 strategy.

Travelism transformation is particularly challenging, because of the mobility dimension plus the scale, scope and speed of change. Current structures must adapt to the new dynamics

SUN - the Strong Universal Network - has been established to support that response as a tool for climate resilience and SDG implementation. An emerging network of prefabricated, solar powered, web connected tracking centres – with a new cadre of focused postgraduate research fellows, sharing data /analytics, and innovation/funding opportunities. Aviation climate resilience will be a key part of its Green Growth mission.

The transformation will require broad scale sector engagement: a No Carbon Aviation Moon-shot and a fully connected Green Growth foundation. As Ben Franklin said “We must hang together or we will hang separately”