Growth in renewable energy offers insights for air transport

How policy makers created renewable energy markets in the past provides insights for aviation’s energy transition and helps inform the efforts to develop the still only nascent sustainable aviation fuel (SAF) market.

The renewable energy sector has seen unprecedented growth over the past 30 years. Strategic technology-push and demand-pull policies accelerated its development, driving innovation, investment, cost reduction, and infrastructure expansion. As a result, solar and wind have evolved from niche energy sources to more mainstream sustainable alternatives to fossil fuels.

Strong government policy action enabled the new energy markets to develop and with the associated scale came the reduction in production costs necessary for widespread adoption. The cost of solar energy plummeted, with the decline in wind energy costs having been more gradual, and those of biomass less discernable. This highlights the extent to which global deployment can drive technological learning, in turn leading to widespread spillover effects.

However, more complex and design-intensive technologies, such as wind farms and biomass, typically require a higher proportion of locally adapted or sourced components. This can translate into steeper learning curves, and correspondingly, more muted cost reductions. Sector-specific considerations and local context will always matter in policy design. While policy needs to adapt to these, the lesson learned from creating renewable energy markets in the past is most encouragingly the fact that it can be done.