As part of their strategic partnership to advance sustainable aviation, Boeing and Etihad Airways tested technologies that focus on reducing emissions and noise as part of the 2020 ecoDemonstrator program. This program utilizes commercial aircraft to test technologies that can make aviation safer and more sustainable now and into the future.

Sound measurements were conducted on the Boeing 787-10 and on the ground to validate community noise prediction processes and the sound reduction potential of a landing gear modified for quieter operations. Some 1,200 microphones attached to the outside of the aircraft and positioned on the ground collected these measurements. Testing on the ecoDemonstrator will validate the efficacy of potential design solutions for the next generation of landing gear.

Safran Landing Systems, which supplies the landing gear for the 787 Dreamliner, outfitted the 2020 ecoDemonstrator with landing gear noise reduction devices. These devices are strategically attached to those landing gear areas that have been shown to produce increased noise due to air flow when an airplane is flying low before landing. The purpose of these devices is to create a physical barrier that will diffuse the air flow, thus reducing the noise that can be heard from the ground.

The objective is to attenuate the landing gear acoustic contribution by more than 20%. Modern aircraft engines have reduced their noise signature and efforts are now being made to reduce landing gear noise.

At the end of the flight testing program, Boeing will deliver the 787-10 to Etihad in late September.