

Supplementary Figures

Fig S1

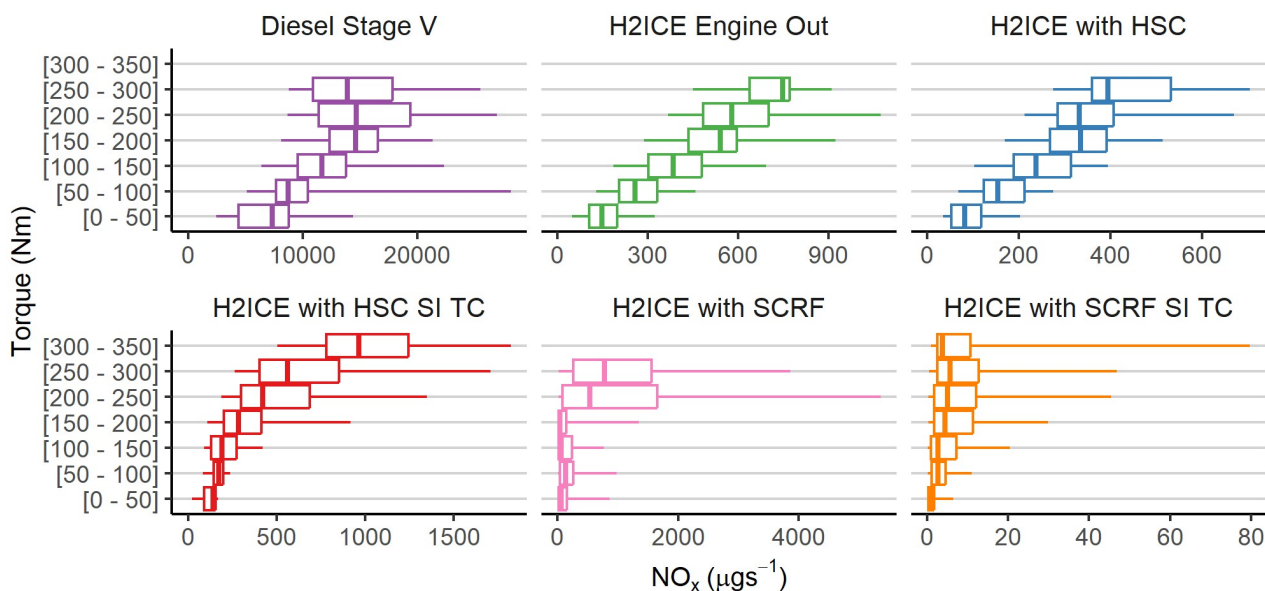


Figure S1. Instantaneous NO_x emissions in µg s⁻¹ for a Stage V diesel engine and four H2ICE datasets with either HSC or SCRf systems separated into bins of torque, each tested under CI and SI test cycles (plots marked SI TC is collected under the spark ignition test cycle, all other data under the NRTC for compression ignition). Note the substantially different x-axis scales for the different engine and aftertreatment combinations e.g. diesel Stage V emissions are shown on a scale of 0 - 30000 µg s⁻¹, whereas H2ICE with HSC is on a scale of 0 - 1000 µg s⁻¹.)

Fig S2

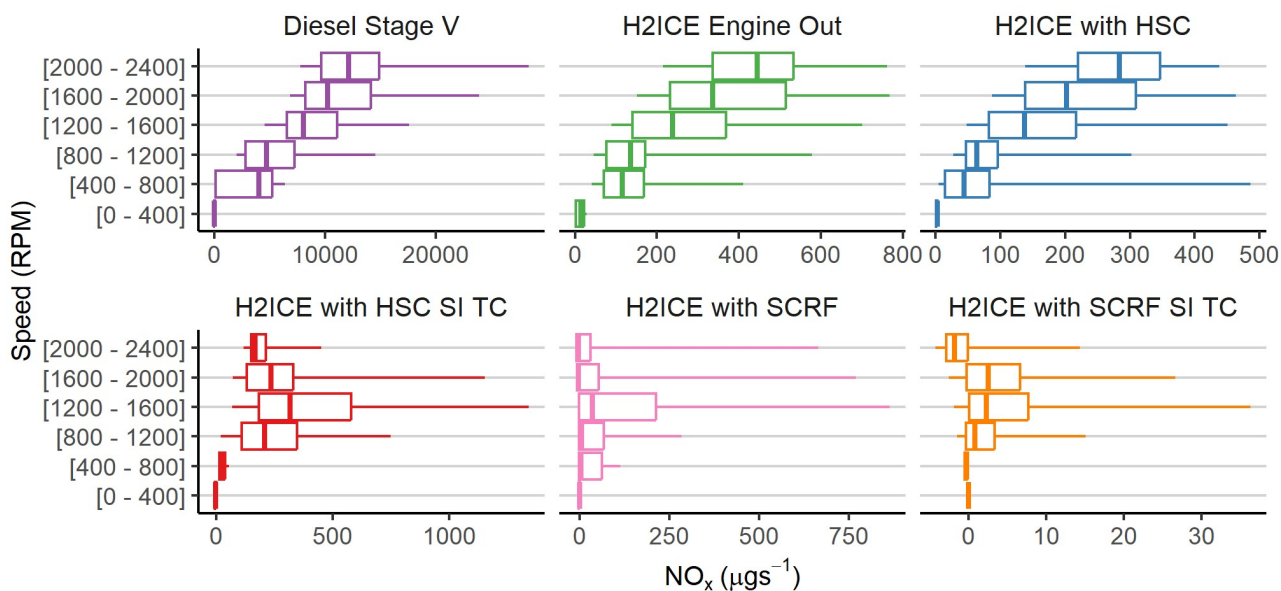


Figure S2. Instantaneous NO_x emissions in µg s⁻¹ for a Stage V diesel engine and four H2ICE datasets with either HSC or SCRf systems separated into bins of speed, each tested under CI and SI test cycles (plots

marked SI TC is collected under the spark ignition test cycle, all other data under the NRTC for compression ignition). Note the substantially different x-axis scales for the different engine and aftertreatment combinations e.g. diesel Stage V emissions are shown on a scale of 0 - 30000 $\mu\text{g s}^{-1}$, whereas H2ICE SCRf SI TCs on a scale of 0 - 40 $\mu\text{g s}^{-1}$.)

Fig S3

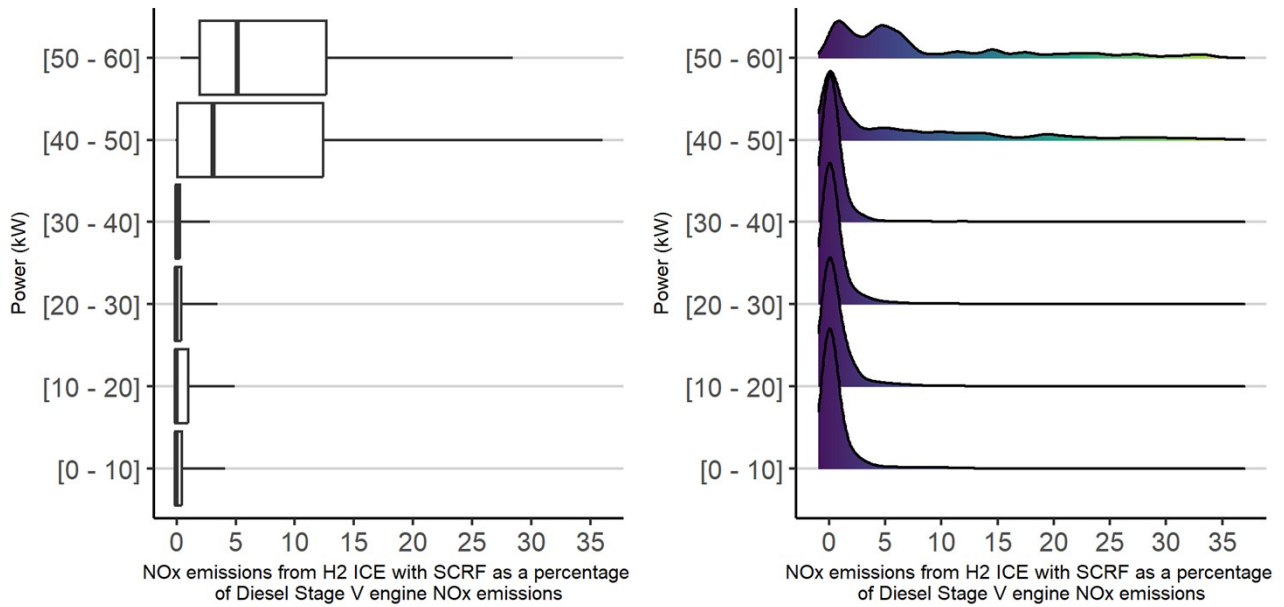


Figure S3. The difference in instantaneous NO_x as a function of power setting between a H2 ICE with SCRf and a Stage V diesel engine for the across the NRTC. (a) shows data as a box and whisker plot with median, interquartile and 5th and 95th percentile ranges. (b) shows the distribution as density plots. Note the x axis scale in comparison to Figure 4.

Fig S4

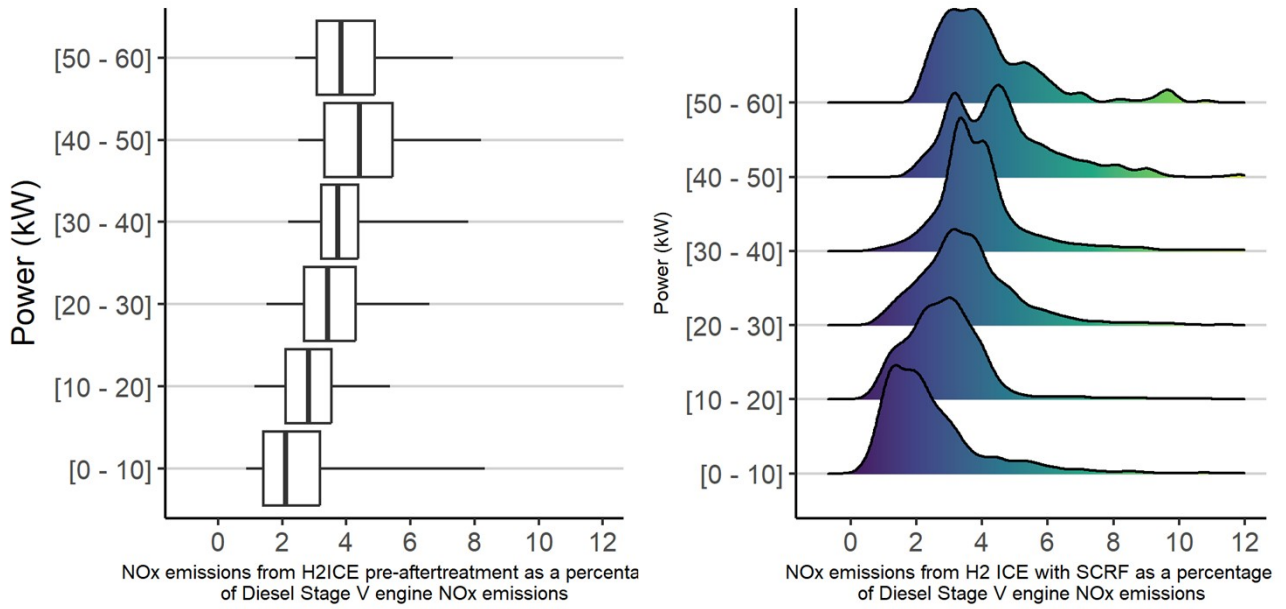


Figure S4. The difference in instantaneous NO_x as a function of power setting between a H2ICE pre-aftreatment and a Stage V diesel engine for the across the NRTC. (a) shows data as a box and whisker plot with median, interquartile and 5th and 95th percentile ranges. (b) shows the distribution as density plots. Note the x axis scale in comparison to Figure 4.