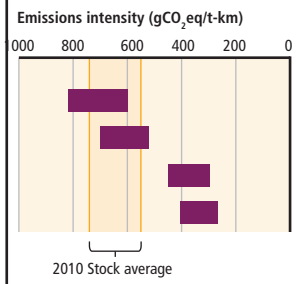
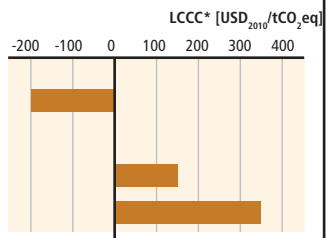
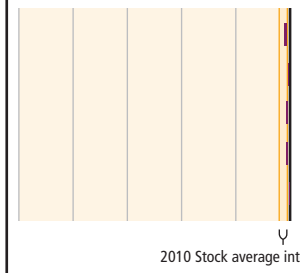
Mitigation options in freight transport	Indicative 2010 stock average baseline CO_2eq emissions and reduction potential	Indicative direct mitigation cost in relation to the baseline (can be positive or negative)	Reference conditions and assumptions made	Illustrative examples
Aviation (Commercial, medium to long haul) 2010 Dedicated airfreighter 2010 Belly-hold 2030 Improved aircraft 2030 Improved, open rotor engine			See Passenger "Aviation" assumptions above Freight factors for wide-bodied passenger aircraft are around 15-30% whilst narrow bodied planes are typically 0-10% (52),	See Passenger "Aviation" examples above
Rail (freight train) 2010 Diesel, light goods 2010 Diesel, heavy goods 2010 Electric , 200 gCO_2eq/kWh			**Baseline** based on electricity grid 600 gCO_2/kWh: 6–33 gCO_2/t-km (25). - 40–45% reduction in CO_2/t-km (augmented if switch to low-carbon electricity). - 14% reduction in operating costs (allowing for increase in speed and with energy costs excluded from cost calculation) (38). Also see passenger "Rail (Light Rail Car)" above.	See passenger "Rail (Light Rail Car)" above
Waterborne 2010 New large international container vessel 2010 Large bulk carrier/tanker 2010 LNG bulk carrier 2030 Optimized container vessel 2030 Optimized bulk carrier			**Baseline: Stock average international ships** 10–40 gCO_2/t-km (25). **2010 water craft:** 5–30% CO_2/t-km reduction potential; retrofit and maintenance measures 2–20%; total reduction 43% (2020) to 63% (2050) (19). Potential up to 60% CO_2 reduction by 2030 from optimized technology and operation (19). 30% or more reduction in CO_2/t-km by 2030 at zero cost (30). **2030 water craft:** Business-as-usual reduction in carbon intensity of shipping of 20% between 2010 and 2030 but could rise to 37% with industry initiatives (39).	2010 new medium vessel:(46) Industry initiatives through the Energy Efficiency Design Index and Ship Energy Efficiency Management Programme of the International Maritime Organisation (IMO)(22)
Water craft operations and logistics Slow steaming of container vessel. Inland waterways		**Baselines for LCCC calculation** Average new aircraft (2010) New bulk carrier/ container vessel (2010)	**Operations:** Potential CO_2 reductions 15–39%; Slow steaming at 3–9kts slower than 24kt baseline. **Cost savings** around 200 USD/tCO_2 at bunker fuel price of 700 USD/t and combining savings for carriers and shippers (37). CO_2 emissions reductions of 43% per t-km by 2020 (20); - 63% CO_2/t-km by 2050 (21); - 25–75% GHG intensity by 2050 (22); - 39–57 % CO_2/t-km 'attainable' by 2050; - 59–72 % CO_2/t-km is 'optimistic' by 2050 (23)	Global average speed reduction of 15% would give benefits that outweigh costs by 178–617 billion USD by 2050 (31). 'Slow steaming' at 10% slower speed gives 15–19% CO_2 emissions reduction; 20% slower speed gives 36–39% (24, 31, 37). Inland waterways potential (46)

*Levelized cost of conserved carbon (LCCC), here at 5% weighted average cost of capital (WACC)