

Supplementary material – “An Evaluation of Ireland’s Sustainable Freight Transport Policy”

Freight transport measures rating results

Table S1 Evaluation results of 38 proposed sustainable freight measures (Delphi Round 1 and Round 2 results)

Freight Measures (Total 38 measures)	Round 1 Mean (*aggregated)	Round 1 SD**	Polarity ***	Round 2 Mean	Round 2 SD	Polarity
<i>Road transport measures</i>						
Investment in Intelligent Transportation Systems (ITS)	1.83	0.46	None	1.95	0.81	None
Modifying the rules for HGV weights and dimensions	1.47	1.10	None	1.69	1.07	None
Progressive distance pricing	1.34	0.60	None	1.08	0.67	None
Different pricing with regards to modal shift	1.68	0.87	None	1.50	0.87	None
Harmonised speed limits	1.00	0.61	None	1.00	0.85	None
Congestion charge	1.80	0.89	None	1.60	1.14	None
Enforcement of regulations	1.28	1.13	None	1.23	1.04	None
<i>Supply chain measures</i>						
Training for eco-driving	1.63	0.62	None	1.93	0.69	None
Automated platooning	1.25	1.35	Weak	0.89	1.29	Weak
Standardised loading units	0.90	0.65	None	1.05	0.55	None
E-freight	1.03	0.79	None	0.98	0.66	None
Network optimisation – cargo owner	1.08	0.80	None	1.38	0.74	None

Network optimisation – logistics service provider	1.63	0.85	None	1.60	0.70	None
CO2 labels	0.65	0.39	None	0.83	0.24	None
Intermodal transport	1.59	1.10	None	1.69	1.00	None
Transport consolidation and cooperation	1.83	0.72	None	2.03	0.64	None
Transport route planning and control	1.63	0.58	None	1.73	0.45	None
<i>Energy supply measures</i>						
Taxation of fossil fuels	0.83	0.99	None	0.55	1.39	Weak
Hydrogen infrastructure	0.58	1.44	Weak	0.64	1.84	Strong
Improved batteries	1.15	0.24	None	1.20	1.21	Weak
<i>Vehicle supply measures</i>						
Including higher CO2 standards into HGV regulations	1.38	0.46	None	1.43	1.34	Weak
BAT vehicle certification for heavy goods vehicles	0.95	0.51	None	0.94	1.16	None
Clean vehicle technologies	1.18	0.55	None	1.43	1.41	Weak
<i>Urban freight transport measures</i>						
Off-street loading bays	1.47	0.46	None	1.47	0.68	None
Cargo bikes	2.28	0.85	None	2.15	0.99	None
Mobile depots	1.63	0.85	None	1.78	0.79	None
Urban distribution/consolidation centres	1.50	0.68	None	1.40	0.76	None
Off-peak deliveries	2.03	0.58	None	1.93	0.82	None
Spatial planning for logistics	1.80	0.57	None	1.75	0.75	None

Freight routes, delivery, and servicing plans	1.38	0.90	None	1.48	1.04	None
By boat logistics	1.30	1.14	None	1.38	1.31	Weak
<i>Rail and Maritime transport measures</i>						
Investment in rail infrastructure	1.80	1.01	None	1.75	0.98	None
Rail Freight prioritisation	1.75	1.09	None	1.80	1.03	None
Electrification of rail corridors	2.05	0.83	None	2.25	0.49	None
Longer or/and heavier trains	1.63	0.82	None	1.68	0.83	None
Investment in inland waterway transport infrastructure	1.05	1.16	None	1.20	1.27	Weak
Investment in maritime port infrastructure	1.73	0.65	None	1.60	1.17	None
Develop new technologies in inland waterways	1.20	1.16	None	1.30	1.18	None
<i>Waterborne transport measures</i>						
Investment in inland waterway transport infrastructure	1.05	1.16	None	1.20	1.27	Weak
Investment in maritime port infrastructure	1.73	0.65	None	1.60	1.17	None
Develop new technologies in inland waterways	1.20	1.16	None	1.30	1.18	None

Note:

*A higher mean rating score implies a stronger potential positive impact on sustainability, where '3' = strong positive impact; '-3' = strong negative impact.;

**A higher standard deviation (SD) value implies a wider divergence of opinion among panel members.

*** Based on policy Delphi analysis guidelines by De Loë (1995), 'polarity' measures whether the panel's ratings were polarised. Polarity is determined using the variance of the distribution. Categories include strong ($SD \geq 1.5$), weak ($1.2 \leq SD < 1.5$), none ($SD < 1.2$).