Policy measures to avert possible modal shifts caused by sulphur regulation in the European Ro-Ro sector

The 0.1% limit in sulphur content within Sulphur Emission Control Areas as of 1st January 2015 requires that ship operators either use pricier ultra-low sulphur fuel oil, or alternatively install abatement technologies through substantial capital investments. A part of the resulting higher operating costs are passed on to shippers resulting in increased freight rates. These may lead to modal shifts towards rail or road options competing with Ro-Ro operators. Due to the unexpectedly low fuel prices in the period 2014–2016, Ro-Ro operators were relatively unharmed by the new limits, but nascent research has shown that if fuel prices increase some Ro-Ro services may not survive. This paper examines a set of policy options that can mitigate or reverse the negative effects of the low-sulphur regulation. The measures include internalizing external costs of transport, repaying fuel surcharges to shippers, subsidizing technological investments of ship operators, or increasing the landbased costs of transport via levies. To compare their efficacy, total costs are calculated for each measure. The results show that the proposed measures can successfully reduce the negative effects of the regulation but this would entail significant costs. A combination of subsidies towards shippers and ship operators is shown to be effective at reversing potential modal shifts and can be crucial in case of high fuel prices in the near future. The findings of this work can assist operators to develop new strategies and improve the resilience of their network, and regulators designing environmental policies that may have negative implications on certain sectors.