As of January 2015, the new maximum limit of fuel sulfur content for ships sailing within emission control areas has been reduced to 0.1%. A critical decision for ship owners in advance of the new limits was the selection of an abatement method that complies with the regulations. Two main options exist: investing in scrubber systems that remove sulfur dioxide emissions from the exhaust and switching to low-sulfur fuel when sailing in regulated waters. The first option would involve significant capital costs, while the latter would lead to operating cost increases because of the higher price of the fuel used. This paper presents a literature review of emissions abatement options and relevant research in the field. A cost-benefit methodology to assess emission reduction investments from ship owners is also presented. A study examined the effects of recent drops in bunker fuel price to the payback period of a potential scrubber investment. The results show that lower prices would significantly delay the payback period of such investments, up to two times in some cases. The case studies present the emissions generation through each option for representative short sea shipping routes. The repercussions of low-sulfur policies on large emission reduction investments including cold ironing are examined, along with implications of slow steaming for their respective payback periods. Recommendations are made for research in anticipation of future regulations and technological improvements.

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