

Human Health Impacts

Estimated PM_{2.5}- and Ozone-Related Human Health Impacts Associated with Ship Emissions in the U.S. and Canada

Health Effect	2020 Annual Ship-Related Incidence	2020 Annual Reduction in Ship-Related Incidence with an ECA ^a
Premature Mortality ^b	8,100 – 21,000	5,500 – 14,000
Chronic Bronchitis	5,500	3,900
Hospital Admissions ^c	11,000	4,800
Emergency Room Visits	6,700	3,800
Acute Bronchitis	13,000	9,300
Acute Respiratory Symptoms	8,900,000	4,900,000

^a Based on ship emission inventory reductions due to switching from 2.7% sulphur residual fuel to 0.1% sulphur distillate fuel and an overall fleet NO_x reduction in the ECA of 23%, in 2020, from Tier II levels. In the long term, a 75% reduction in NO_x emissions from Tier II levels would be expected in the ECA.

^b Includes both PM_{2.5}- and ozone-related estimates of premature mortality. The range is based on the high- and low-end estimate of incidence derived from several alternative studies used to estimate PM_{2.5}- and ozone-related premature mortality in the U.S.

^c Includes estimates of both cardiovascular- and respiratory-related hospital admissions.

Potential Benefit for US of US/Canada ECA: Early Preliminary Estimates - 2020 PM2.5 Reductions from IMO Program

- Our early estimates are the benefits of an ECA would be about 5 times larger than that of our loco/marine rule

