

The Environmental Noise Directive (END) requires EU member states to assess exposure to noise from key transport and industrial sources with two initial reporting phases: 2007 and 2012. Where the recommended thresholds for day and night indicators are exceeded, action plans are to be implemented. This country fiche presents data related to END assessments as reported to EEA by 15th April 2016 for the two key END indicators: L_{den} (day evening and night exposure) and L_{night} (night time exposure). 2012 strategic noise maps reported are presented, as well as HIA calculations for annoyance and sleep disturbance, hospital admissions and mortality. Trends are presented as the change in exposure from 2007 to 2012, for comparable sources only.

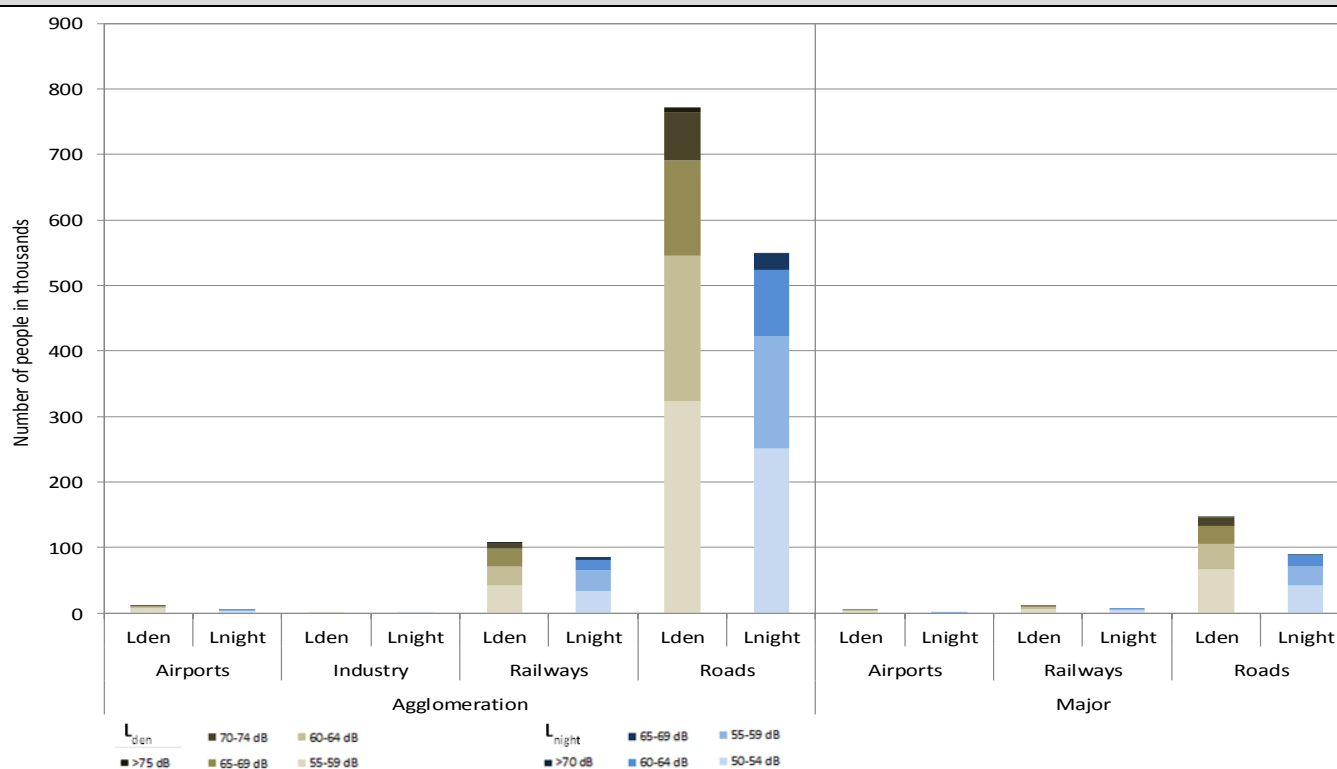


NORWAY

Noise sources covered by this assessment

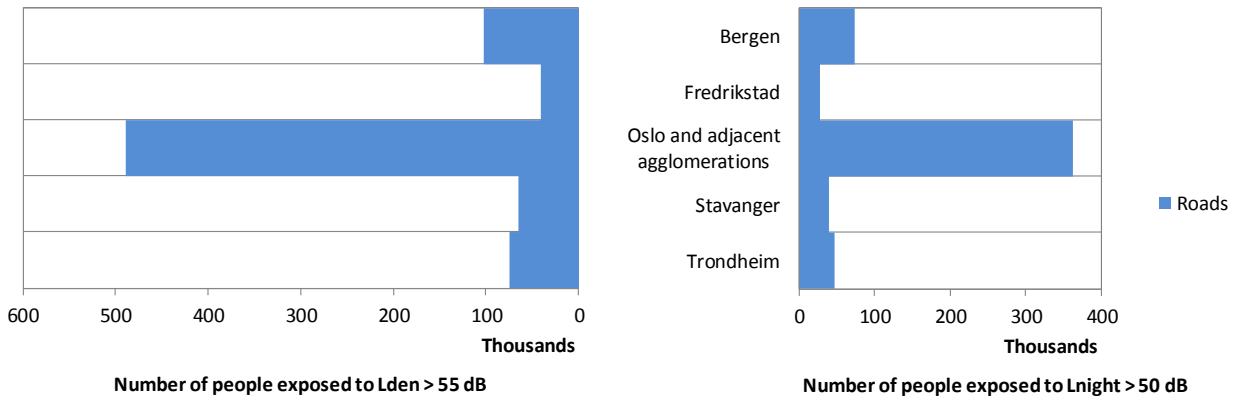
Agglomerations > 100.000 inhabitants	Bergen, Fredrikstad, Oslo and adjacent agglomerations, Stavanger, Trondheim 5 agglomerations in total, covering 1.705.881 inhabitants
Major airports > 50.000 movements per year	Bergen/Flesland Airport, Oslo/Gardermoen Airport, Stavanger/ Sola Airport, Trondheim/Værnes Airport 4 major airports in total
Major roads > 3 million vehicles per year	2487 km in total
Major railways > 30.000 train passages per year	208 km in total

Number of people exposed to different noise bands per L_{den} and L_{night} (2012)

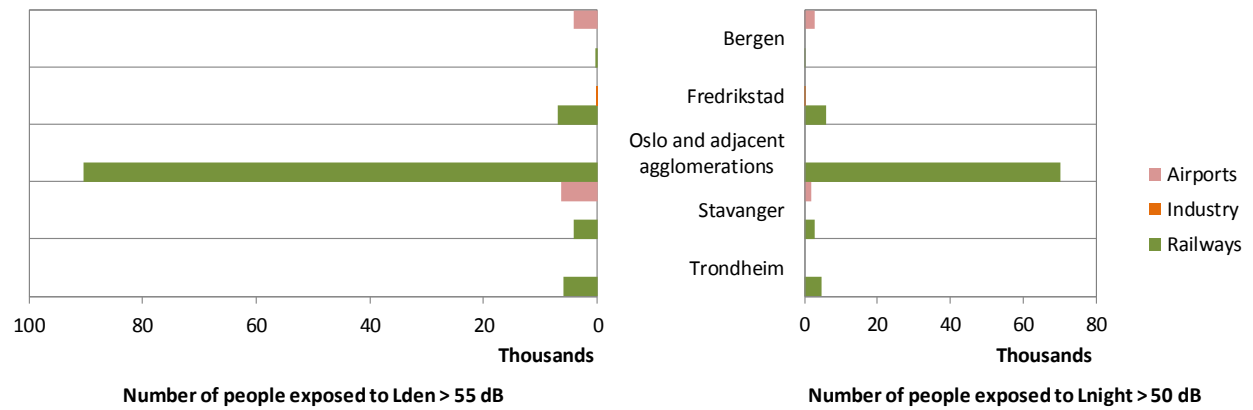


Data not applicable in 3 agglomerations for aircraft noise, out of 5 agglomerations.

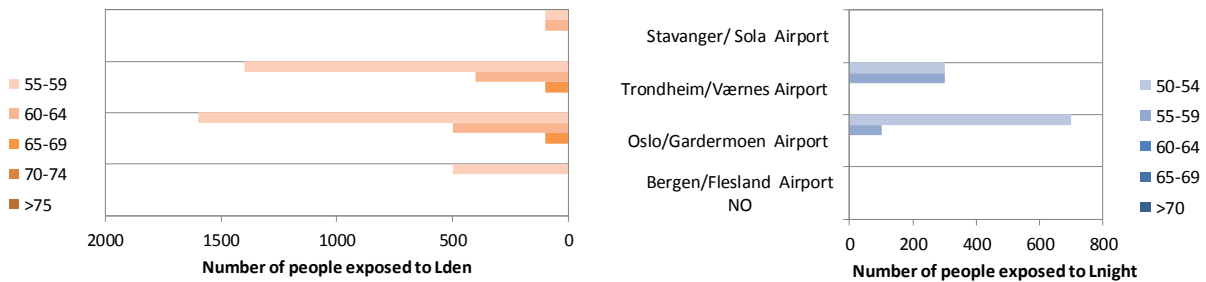
Total number of people exposed to road noise inside agglomerations (2012)



Total number of people exposed to railway, aircraft and industrial noise inside agglomerations (2012)



Total number of people exposed to Major Airports outside agglomerations (2012)



Noise contour maps (2012)

Major roads



Major railways



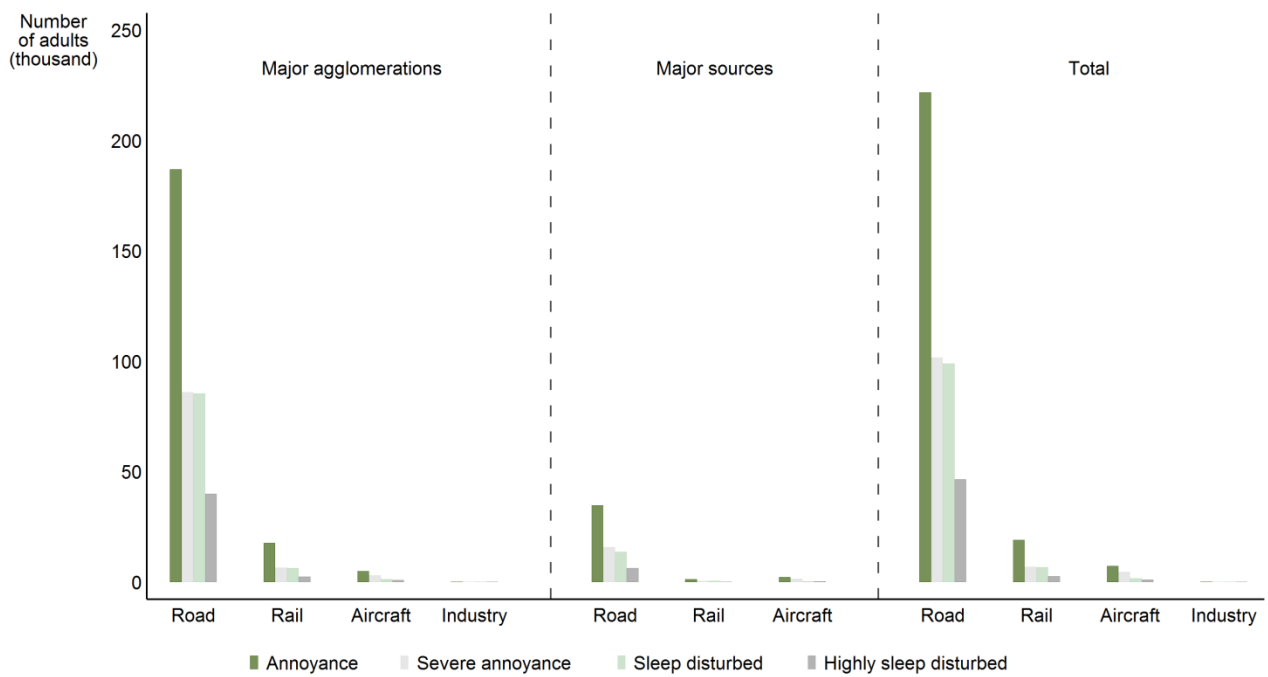
Major airports

Airport	ICAO	Annual traffic
Bergen/Flesland Airport	ENBR	103200
Oslo/Gardermoen Airport	ENGM	231339
Trondheim/Værnes Airport	ENVA	55474
Stavanger/Sola Airport	ENZV	82000

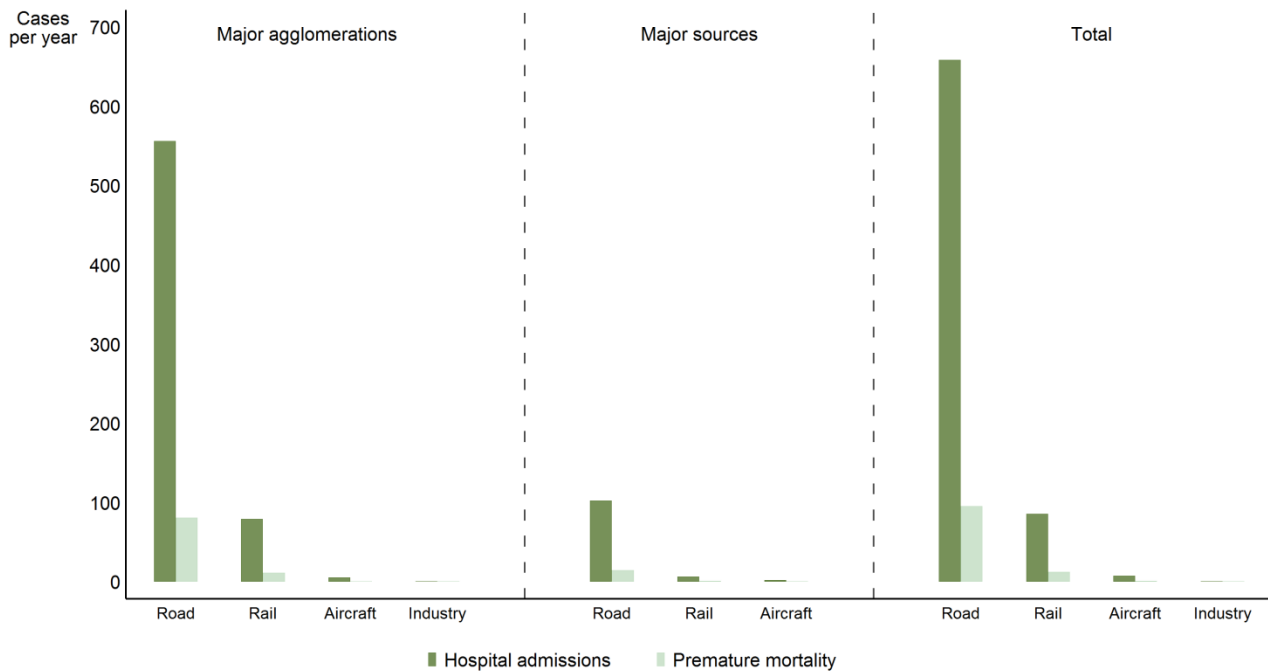


Health impact assessment

Annoyance and sleep disturbance



Hospital admissions and mortality



Trends on noise exposure 2007 - 2012

Trends on noise exposure are shown only in those cases where data is available for both implementation rounds:

- For major airports: total number of people exposed to more than 55 dB Lden and to more than 50 dB Lnight outside agglomerations.
- For agglomerations: percentage of population exposed to more than 55 dB Lden and to more than 50 dB Lnight due to different noise sources.

Major airports:

	L _{den}		L _{night}	
	First Round	Second Round	First Round	Second Round
Bergen/Flesland Airport	3000	500	800	0
Stavanger/ Sola Airport	3200	200	600	0
Oslo/Gardermoen Airport	0	2200	0	800
Trondheim/Værnes Airport	700	1900	400	600

Agglomerations:

Air (values in %)	L _{den}		L _{night}	
	First Round	Second Round	First Round	Second Round
Oslo	Data not provided or unsuitable for deriving trends			

Industry (values in %)	L _{den}		L _{night}	
	First Round	Second Round	First Round	Second Round
Oslo	Data not provided or unsuitable for deriving trends			

	Decrease in population exposed
	No change
	Increase in population exposed

Railway (values in %)	L _{den}		L _{night}	
	First Round	Second Round	First Round	Second Round
Oslo	Data not provided or unsuitable for deriving trends			

Road (values in %)	L _{den}		L _{night}	
	First Round	Second Round	First Round	Second Round
Oslo	Data not provided or unsuitable for deriving trends			

For further information about environmental noise in Europe please consult <http://www.eea.europa.eu/themes/human/noise> or visit the Noise Observation & Information Service for Europe at <http://noise.eionet.europa.eu/> and EEA Data Service <http://www.eea.europa.eu/data-and-maps/data/data-on-noise-exposure-2>.