

An aerial photograph of a city, likely Bilbao, Spain, showing a complex highway interchange with multiple overpasses and ramps. In the background, a tall, slender tower with a cross-like structure at the top is visible against a clear blue sky. The city's buildings are densely packed, and the overall scene is captured from an elevated perspective.

ENVIRONMENTAL NOISE

IN

BIZKAIA



¿What is environmental noise?

- This is the **noise generated by human activities** (road traffic, railways, air transport, industry, recreational activities and construction) **and** which is **perceived in the household environment** (in housing and its surrounding areas, public parks, teaching centres,...)

Directive proposal on the evaluation and management of environmental noise. 2000/0194(COD)



Is environmental noise perceived as a problem?

- “Over 50% of the European population living in highly industrialised countries, is exposed to high noise levels associated to traffic, and stemming from the same, people are subject to serious inconveniences.”
- “Approximately 113 million Europeans - 17% of the population- are exposed to noise levels with serious negative effects for the health.”

European Environmental Agency

Is environmental noise perceived as a problem?

- 86% of the Basque population is **very/quite** concerned about **environmental noise** in the Basque Municipalities.
- It is the **seventh environmental problem** which is perceived as being more relevant by the population of the Basque Autonomous Community.
- Approximately **50% of the population of Bilbao** considers that they are affected by some kind of general environmental noise.



Which are the environmental noise levels established?

- At international level, it is assumed that **daily levels exceeding 70 dBA** originate highly disturbing situations and strong complaints.
- Likewise, it is considered that **above 60 dBA** the disturbance affects a high percentage of the exposed population.
- Based on the above, the established environmental noise levels are :

LA eq-daytime	LA eq-night	Evaluation
>75	>65	Unbearable
> 70 a 75	>60 a 65	Very high
>65 a 70	>55 a 60	High
>60 a 65	>50 a 55	Acceptable
> 55 a 60	>45 a 50	Good
>50 a 55	>40 a 45	Quiet
<50	<40	Very quiet



Which are the main sources of environmental noise in Bizkaia?



Road traffic, according to intensity and speed



Rail traffic, according to intensity and speed



Airports



Industrial activities



Recreational activities



Construction activities in public areas

- Noise impacts caused by road traffic, railway lines and industrial activities in Bizkaia have been analysed as follows.

What is the environmental noise level in Bizkaia that is originated by ROAD TRAFFIC?

Sections of the road network with highest noise impact	Levels of environm. noise*	Sections of the road network with highest noise impact	Levels of environm. noise *
A-8 in Bizkaia	>75 dBA	BI-632 Abadiño-Elorrio	>70 dBA
A-68 in Bizkaia	>70 dBA	BI-634 Sopelana-Areeta	>70 dBA
N-240 El Gallo Vitoria-Gasteiz	>70 dBA	BI-635 Gernika-Lemoa	>70 dBA
N-627 Arrigorriaga-Galdakao	>70 dBA	BI 636 Güeñes-Bilbao	>70 dBA
N-634 La Rigada-Nocedal	>70 dBA	BI-636 A-8-BI-3742	>70 dBA
N-634 Barakaldo-Sasiola	>70 dBA	BI-637 Areeta-Barakaldo	>70 dBA
A-625-Variante de Luyando	>70 dBA	BI-3323 Martiena-Abadiño	>70 dBA
A-625 BI-625	>70 dBA	BI-3714 Basauri-BI-3720	>70 dBA
BI-623 Durango-Izurza	>70 dBA	Corredor del Txorierri	>70 dBA
BI-631 Mungia-Bilbao	>70 dBA	Corredor de Getxo	>70 dBA
BI-631 Derio-End of the	>70 dBA	Puente Miraflores	>70 dBA

* 10 metres from the roads.

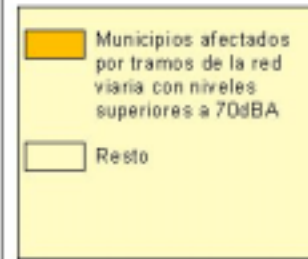
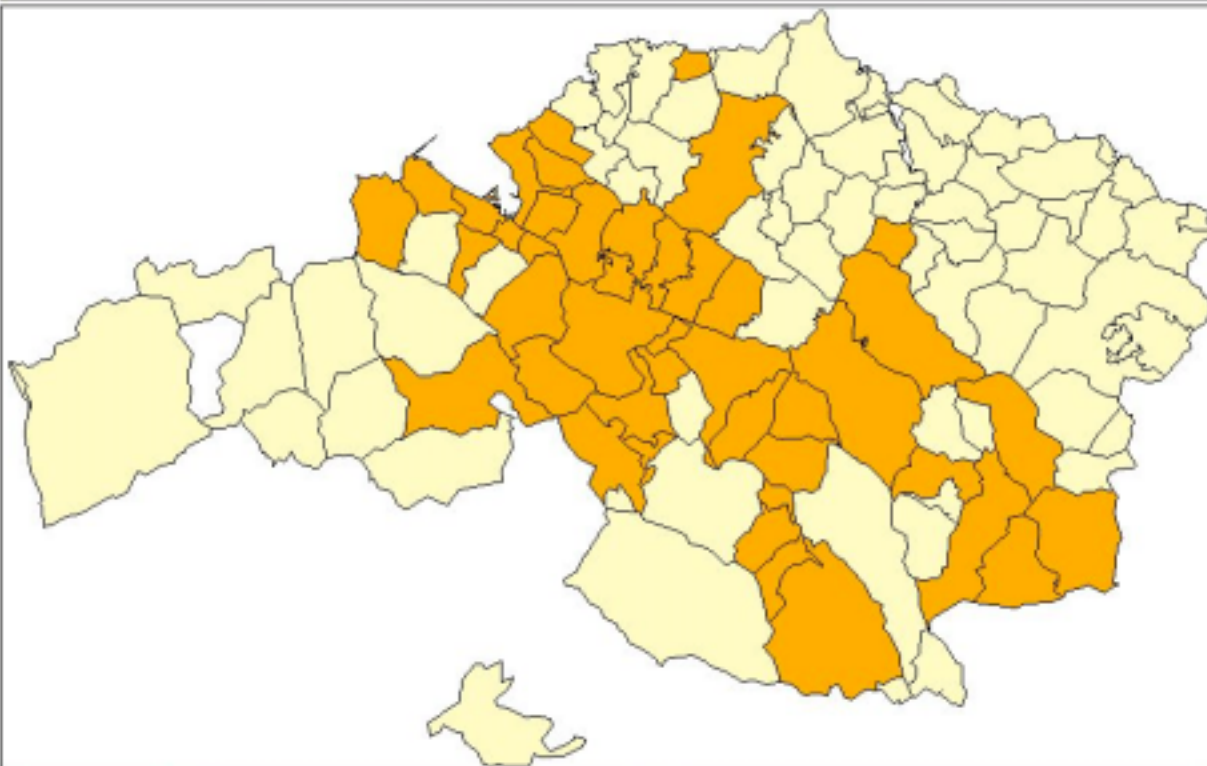


What is the environmental noise level in Bizkaia that is originated by ROAD TRAFFIC?

- Therefore, the noise impact originated by road traffic in Bizkaia, is concentrated in :
 - The inter-municipal roads of the Metropolitan Bilbao area, and more intensely in the section of the A-8 passing through the Municipalities of Bilbao and Barakaldo (>80 dBA).
 - The roads that connect Bilbao-Donostia-San Sebastián (A-8) and Bilbao-Vitoria-Gasteiz (A-68 and N-240).
- Details are given of those Municipalities from Bizkaia affected by sections in the road network with noise levels exceeding 70 dBA (10 m. from the road) as follows:

What is the environmental noise level in Bizkaia that is originated by ROAD TRAFFIC?

MUNICIPIOS AFECTADOS POR TRAMOS EN LA RED VIARIA CON NIVELES SUPERIORES A 70 DBA



FICHA TÉCNICA
Elaboración y Edición: **Legaris Consultores S.A.**

PROCESO DE ELABORACIÓN
- Selección información cartográfica
- Fijación cobertura
- Supervisión cobertura
- Destacación Mapa de áreas de interés



Bizkaiko Foru Aldundia Diputación Foral de Bizkaia
Ingurumen eta Lurrun Departamentu de Medio Ambiente y Acción Ciudadana



What is the environmental noise level in Bizkaia that is originated by RAILWAYS?

Sections of Railway line	Levels of environm. noise*	Sections of Railway line	Levels of environm. noise*
Barakaldo-Muskiz	55-60 dBA	Bilbao-Basurto	50-55 dBA
Santurtzi-Olabeaga	60-65 dBA	Basurto-Aranguren	55-60 dBA
Parque-La Naja	60-65 dBA	Larrabasterra-Plentzia	55-60 dBA
Olabeaga-Bilbao (Connect)	60-65 dBA	Amorebieta-Bermeo	55-60 dBA
Olabeaga-Parque (Connect)	65-70 dBA	Amorebieta-Durango	55-60 dBA
Bilbao-Orduña	65-70 dBA	Bilbao-Lezama	55-60 dBA
Aranguren-Balmaseda	50-55 dBA	Lutxana-Sondika	55-60 dBA
Carranza-Aranguren	50-55 dBA	Bilbao-Larrabasterra	60-65 dBA
Lutxana-Irauregi	50-55 dBA	Bilbao-Amorebieta	60-65 dBA
Basurto-Ariz	50-55 dBA	Durango-Berriz	60-65 dBA

* 10 metres from the roads.

Source: Noise map from BAC. 2000

What is the environmental noise level in Bizkaia that is originated by RAILWAYS?

- Therefore, the noise impact originated by the railway lines in Bizkaia does not exceed the levels considered as acceptable by the World Health Organisation.
- The noise impact originated by road traffic in Bizkaia exceeds the noise originated by the railway lines. (Approximately and as an average by 10 dBA).



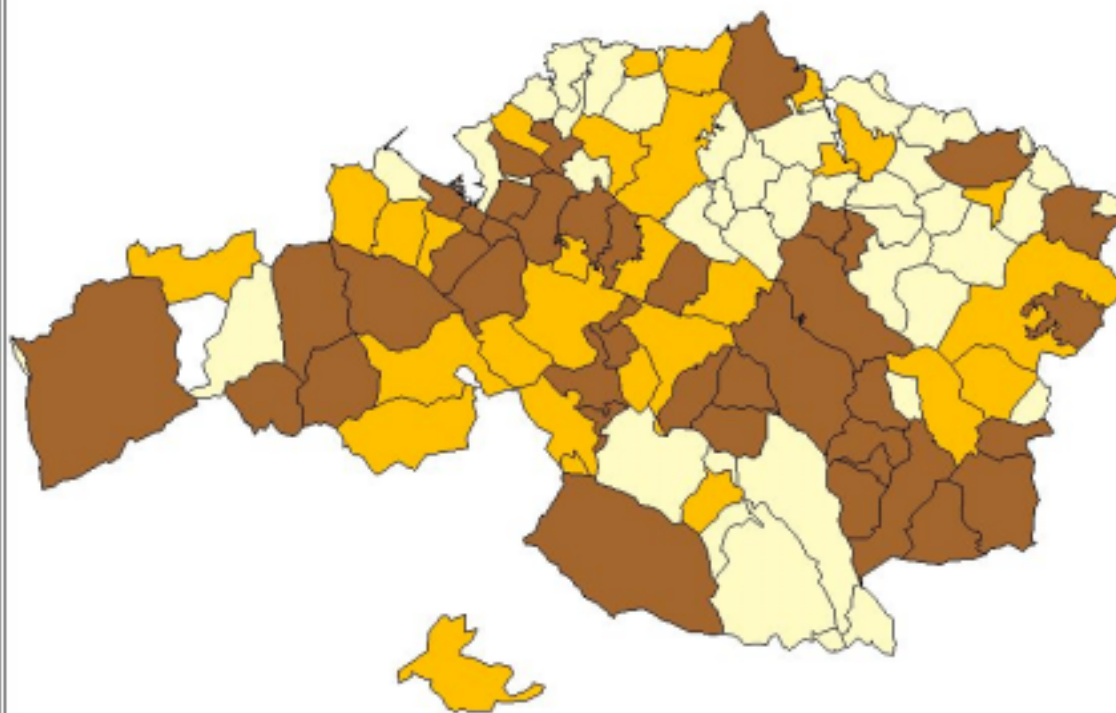
What is the environmental noise level in Bizkaia that is originated by INDUSTRY?

- Municipalities from Bizkaia that have some kind of industrial activity causing an environmental sound impact are detailed as follows .
- This information has been extracted from the “Noise map of the BAC-2000”, and is based on the analysis of 68 Municipalities from Bizkaia with potential sound impact originated by the industrial activity.
- From the latter, 41 Municipalities have one or more activities with sound level emissions above 70 dBA.



What is the environmental noise level in Bizkaia that is originated by INDUSTRY?

MUNICIPIOS CON ÁREAS INDUSTRIALES CON IMPACTO SONORO POTENCIAL Y REAL



FICHA TÉCNICA
Elaboración y Edición:
Igorri Consultores S.A.

PROCESO DE ELABORACIÓN
- Selección información cartográfica
- Pasaporte cartográfico
- Separación de coberturas
- Generación Mapa de Áreas de Interés



Bizkaiko Foru Aldundia Diputación Foral de Bizkaia

Instituto de Cultura y Desarrollo de Bizkaia Institutioa
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What percentage of population is affected by environmental noise in Bizkaia?

- The aim of the European Indicator, Sound Contamination, is to gage the percentage of the population of a Municipality that is exposed to high levels of environmental noise.
- Currently, in Bizkaia, it is only possible to examine the case of Bilbao and based on the results obtained in the drafting of the “Noise Map of Bilbao, 1999”.
- Nevertheless, it will soon be possible to make progress as regards results obtained from the Indicator, based on the work which is being carried out to this avail in Municipalities from Bizkaia such as Bermeo, Gernika, Getxo, Mungia, etc...



What percentage of the population is affected by environmental noise in BILBAO?

- In general terms,
 - **19.4%** of the population of Bilbao is subject to levels of environmental sound **exceeding 65 dBA**.
 - **28.1%** of the population of Bilbao is subject to levels of environmental sound impact of around **55 and 65 dBA**.
 - **52.4%** of the population of Bilbao is subject to levels of environmental sound impact **below 55 dBA**.
- **Road traffic is the main source of environmental noise in Bilbao**, particularly near the A-8, the access roads to the city and its main avenues (Autonomía, Lehendakari Agirre,..

What percentage of the population is affected by the environmental noise in BILBAO?

- By **districts** of Bilbao,

	Deusto	Uribarri	Otxarkoaga	Begoña	Casco Viejo	Abando	Rekalde	Basurto-Zornoza
>65 dBA	32.9%	25.1%	12.8%	22.6%	25.1%	48.5%	27.1%	32.8%
55-65 dBA	49.1%	49.1%	40.6%	45.4%	44.5%	43.9%	44.7%	39.6%
<55 dBA	18.0%	25.8%	46.6%	32.0%	30.4%	7.7%	28.2%	27.7%

Source: Noise map from Bilbao, 1999

- The **variability of the results by districts**, is related to the intensity of the road traffic, the existence or not of green areas that mitigate the environmental noise impact, the nature of the area in question (industrial, residential,...), etc.

What percentage of the population is affected by environmental noise in BILBAO?

- On a **comparative** basis,

	Bilbao	Europe's average	Netherlands	France	Spain	Denmark	Germany
>65 dBA	19.4%	28.1%	6%	14.5%	57%	7%	17%
55-65 dBA	28.1%	40.5%	48%	39.5%	38%	14%	34%
<55 dBA	52.4%	40%	46%	45%	5%	79%	49%

Source: Noise map from Bilbao, 1999

How to act against environmental noise from a Municipality?



- As indicated before, environmental noise is a growing problem in our society and action is required. **Each Townhall plays a decisive role.**
- From the sustainability point of view, special emphasis is made on **preventing environmental noise** using **municipal tools** such as :
 - The **URBAN PLANNING** or **design of the city** in such a way that potential infrastructures affected by the same are attended beforehand.
 - The **incorporation of environmental criteria** in buildings and households, in public roads and urban spaces.
 - The **adequate MANAGEMENT** of the **ACTIVITY PERMITS** issued and their inspection and control.



ANNEXE

- **RELATED CONCEPTS.**

- **Environmental Noise:** non desired or harmful noise generated by external human activity, including noise emissions from means of transport, industrial facilities or buildings.
- **Noise map:** presentation of data regarding the current acoustic status, exceeding a limit value and the population affected in a given area.
- **Noise indicator :** physical magnitude to describe environmental noise, which has a proven harmful effect. It is measured in continuous equivalent level L_{eq} .
- **Acoustic planning:** the fight against future noise through planned measures. It includes town planning, engineering of systems for traffic management, traffic planning, reduction of noise with acoustic insulation measures and fight against noise at origin.



ENCLOSURE

- **RELATED LEGISLATION.**
 - **Directive Proposal on the evaluation and management of environmental noise 2000/0194 (COD)**
 - **The Commission's Green Book on future policies to fight against noise COM/96/540 final**
 - **Municipal Regulations.**