DATA FOR BETTER CITIES

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Increasing population in urban areas

Quality of the public services
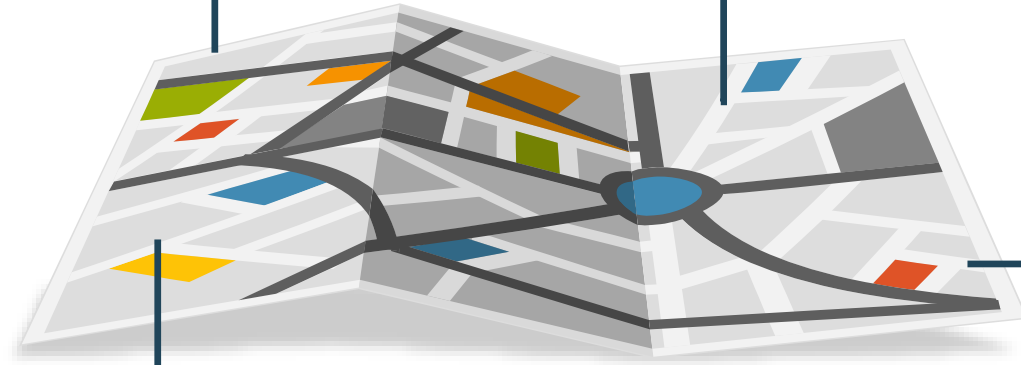To ensure population needs.

Guarantee social participation
Foster the integration of citizens in public life.

Efficient service provision
To maintain effective use of limited resources.

Promote the digital government
Through transparency, accountability, and participation.

UN Sustainable Development Goals

Make cities and human settlements inclusive, safe, resilient and sustainable

- Housing
- Access to transport system
- Inclusive and sustainable urbanization
- Safeguard cultural and natural heritage
- Protecting the poor and people in vulnerable situations
- Reduce environmental impact of cities
- Promote green public spaces
- Support positive links between urban and rural areas
- Resource efficiency
- Mitigation and adaptation to climate change
- Resilience to disasters

Targets and indicators: https://sustainabledevelopment.un.org/sdg11

The challenge: #everisHack4good

Data driven intelligence for cities

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1.

Identify a problem, **small or big,** but related to SDGs 11.

2.

Find your data, and **be open-minded**:
Numbers, text, images, sounds;
Open data portals, reviews, maps, indicators.

3.

Work your magic and build a great technological solution.

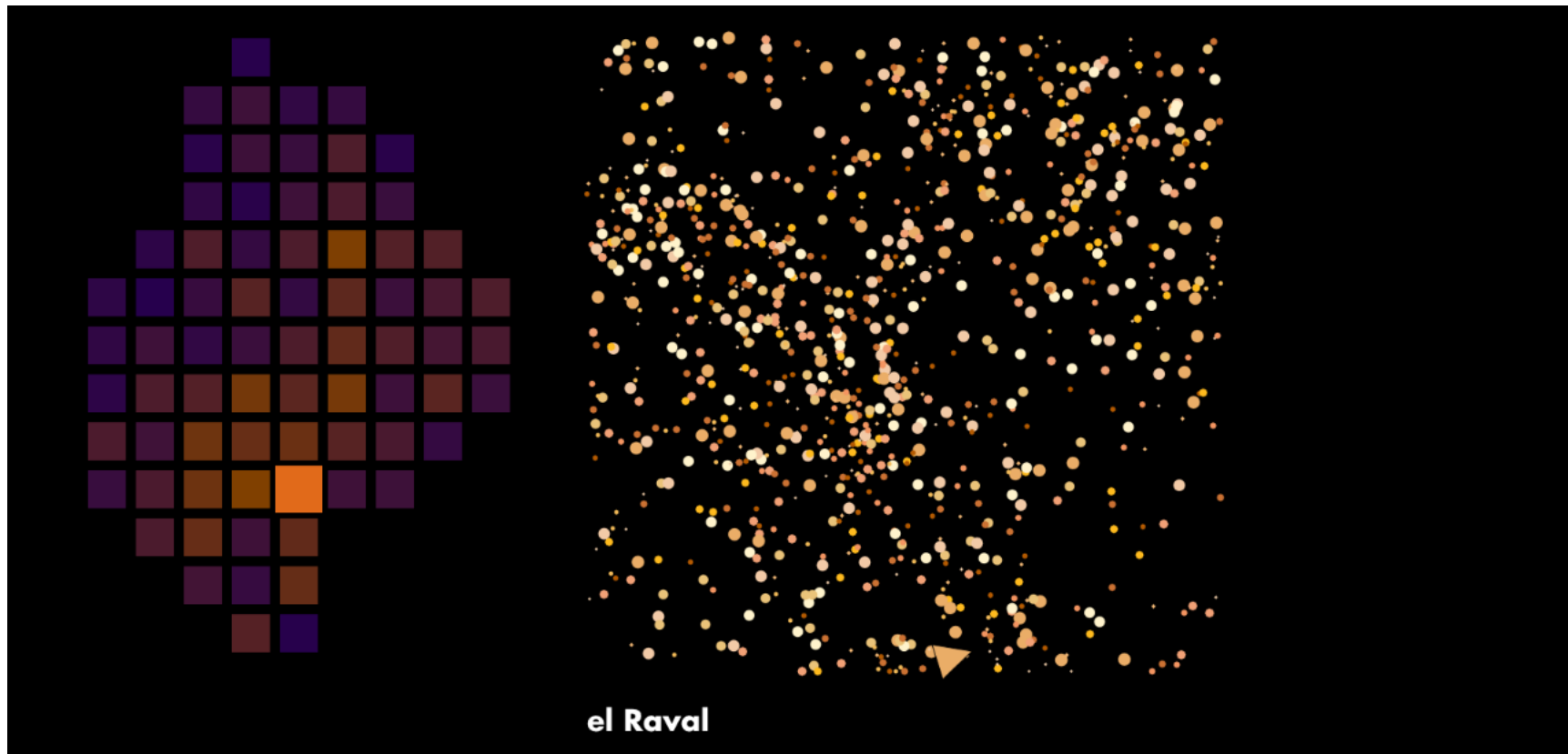Warm Ups → Asking Questions → Gathering Data → Analyzing Data → Telling Your Story → Trying it out

The sound of diversity

Given the open data from Barcelona produces an interactive musical identity that represents the diversity of each neighborhood.

el Raval

sònar+D 2019

USE CASES

Examples and data involved

GAMIFICATION

A video game **based on the data on the energy consumption** of household appliances in which each one of us is presented as a fighter in a combat arena and through which we learn criteria of energy expenditure of the devices we use daily in our houses.
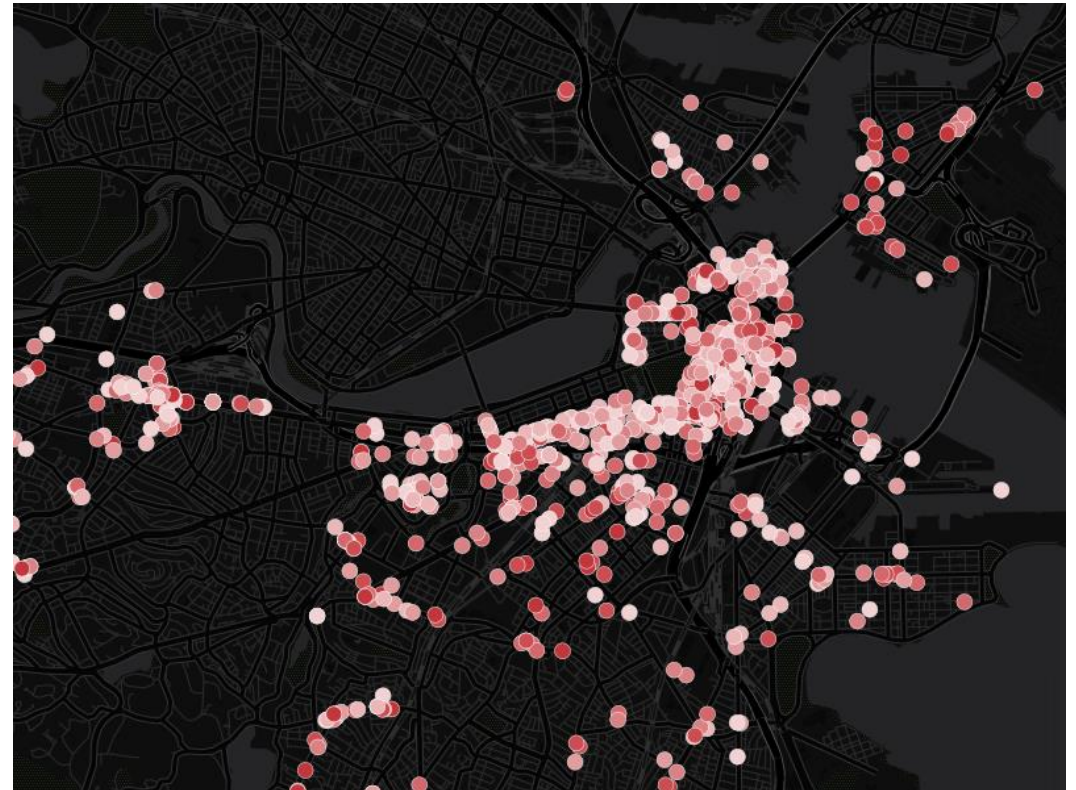
FLAG HEALTH RISKS

Using Yelp Reviews

As in most cities, health inspections are generally random, which can increase time spent on spot checks at clean restaurants that have been following the rules closely — and missed opportunities to improve health and hygiene at places with more pressing food safety issues. Meanwhile, each year, millions of people cycle through and post Yelp reviews about their experiences at these same restaurants.

http://drivendata.co/case-studies/using-yelp-reviews-to-flag-restaurant-health-risks/

MAPPING SUPPLY CHAIN

From Source To Shelf

Fair Trade teams want to use the data to illuminate the connections across nodes in the supply chain, and to more easily identify where gaps exist that need to be filled. For external customers and partners, Fair Trade also wants to increase the transparency of their sourcing and the visibility of the sustainable practices they support.

http://drivendata.co/case-studies/mapping-agricultural-supply-chains-from-source-to-shelf/
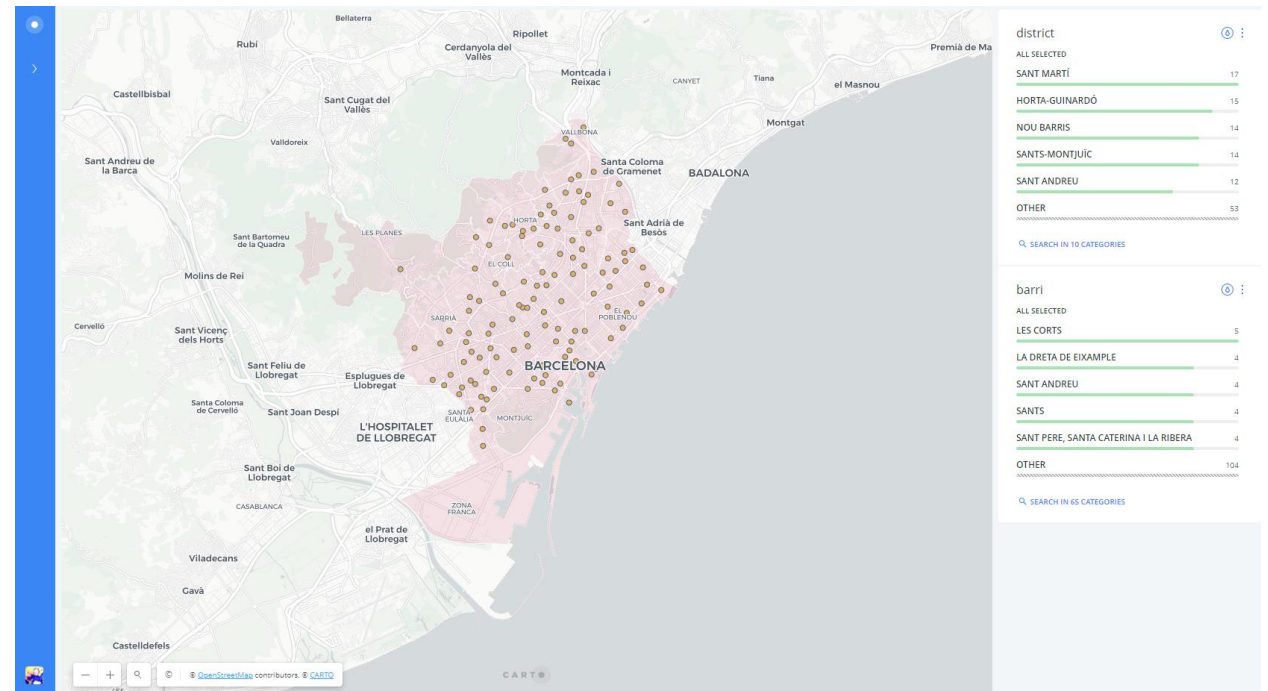
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INTERACTIVE MAP

Of Oil Recycling Points

An interactive map with the position of the Recycling oil container in the city of Barcelona based on the information published on the portal with the aim of facilitating the search for its location to the citizens. These searches are enabled by district and by neighborhood.
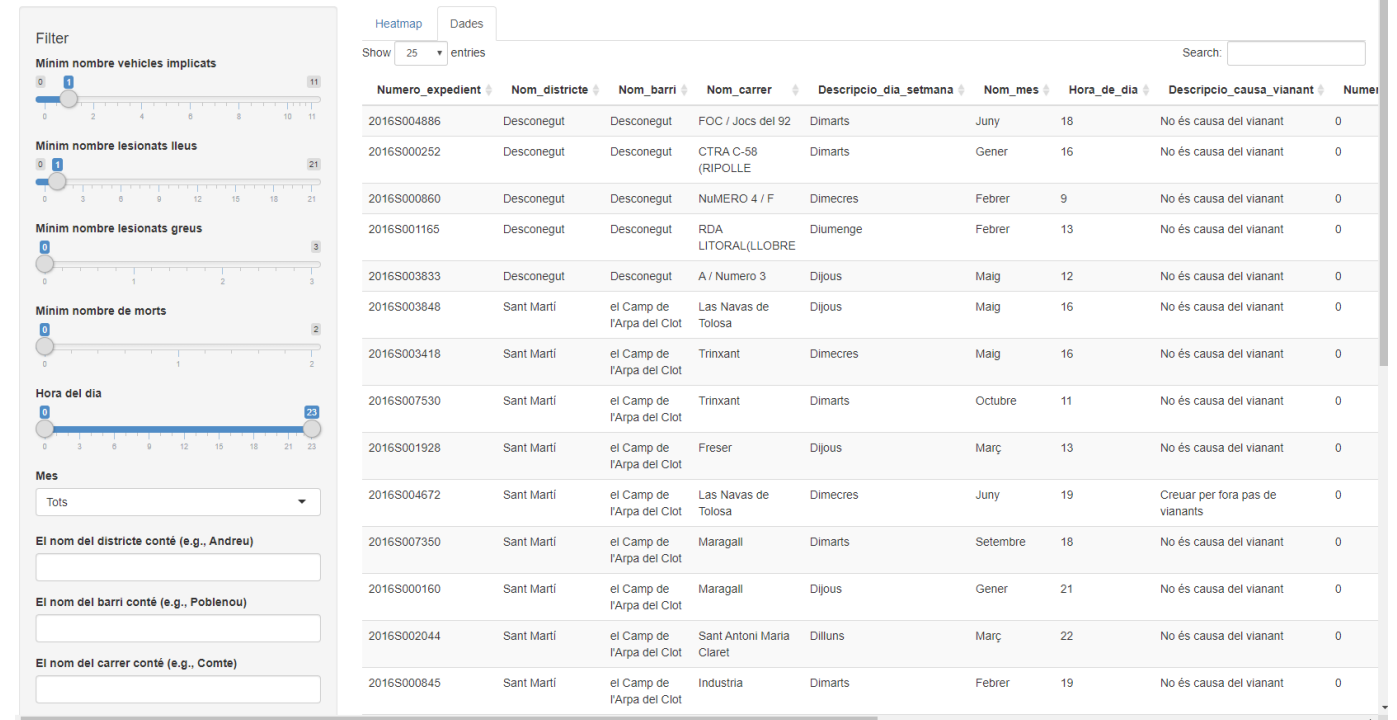
https://jorgeatgu.carto.com/builder/084ae804 -5b81-414e-9160-78750f36b3f3/embed

VISUALIZATION

Of The Dataset "*Accidents Managed By The Local Police In The City Of Barcelona*"

The publication of the dataset on accidents managed with by the local police in the city of Barcelona has generated visualizations of high quality by various portal users.

https://ddrbcn.shinyapps.io/shiny-accidents-barcelona/

MONITORING

City tourist reputation

Tourists increasingly use Internet to generate content regarding their travels, making them serve as a inspiration lever and decision for other potential tourists. This together with the big volume and speed in the generation of data is a challenge for cities to position the brand of tourist destinations. The possibility of incorporating tourist intelligence tools into cities and municipalities can help to observe the tourist status and improve the tourist experience in the city.

REDUCE

Wasted food

Most people and most business don't realize how much food they throw away every day.

By managing food sustainably and reducing waste, we can help businesses and consumers save money, provide a bridge in our communities for those who do not have enough to eat, and conserve resources for future generations.

Benefits:
- Saves money from buying less food.
- Reduces methane emissions from landfills and lowers your carbon footprint.
- Conserves energy and resources, preventing pollution involved in the growing, manufacturing, transporting, and selling food (not to mention hauling the food waste and then landfilling it).
- Supports your community by providing donated untouched food that would have otherwise gone to waste to those who might not have a steady food supply.

CONTROL

Incivism

In any big city you can find: conflicts, dirt, lack of information, precariousness, lack of maintenance and vulnerable groups.

Converting data on incivicious behavior into information allows city managers to make decisions faster, anticipate dangers and risks, stop incivism and improve the quality of life of citizens.

DATASETS AND ADDITIONAL SOURCES

DATA SETS

Some Examples:

- Natural – Image Datasets

- Geospatial Data

- Artificial Datasets

- Facial Datasets

- Video Datasets

- Text Datasets

- Question Answering Datasets

- Sentiment Datasets

- Recommendation and ranking systems Datasets

- Speech Datasets

- Music Datasets

- Health & Biology Datasets

- Government & Statistics Datasets

DATA SETS

#	TITLE	TOPIC	DESCRIPTION	FORMAT	LINK
1	Citizen Entities General File of the city of Barcelona	Administration Public sector	The Citizen Entities General File is one of the instruments of the City of Barcelona relationship with entities of the city. Its creation is provided in the Rules governing public participation (Article 9) and is regulated by the Rules governing the General index of citizens' organizations (BOP 26/2/2004). Historical resources which contain data available until the last week of the term are published. The resources are ordered by year and term, information that can be found in the name of the resource.	XML	https://opendata-ajuntament.barcelona.cat/data/en/dataset/entitats
2	Acoustic map of the city of Barcelona (WMS geoservice)	Territory Town planning and Infrastructures	WMS service that generates the cartography of the Acoustic Map that covers the territory of Barcelona's city council	WMS	https://opendata-ajuntament.barcelona.cat/data/en/dataset/mapa-acustic-wms
3	Inventory of the reserved parking spots in the infrastructure network of the city of Barcelona	Territory Town planning and Infrastructures	Inventory of the reserved parking spots in the infrastructure network of the city of Barcelona	CSV	https://opendata-ajuntament.barcelona.cat/data/en/dataset/infraestructures-inventari-reserves
4	Typology of the reserved parking spots in the infrastructure network of the city of Barcelona	Territory Town planning and Infrastructures	Typology of the reserved parking spots in the infrastructure network of the city of Barcelona	CSV	https://opendata-ajuntament.barcelona.cat/data/en/dataset/infraestructures-m-reserves
5	Base map guide of the city of Barcelona in Web Map Tile Service format (WMTS)	Territory Town planning and Infrastructures	WMTS service which generates the city guide map of the city of Barcelona showing urban layout, place names, postcodes, rail transport services, neighbourhoods and districts	WMTS	https://opendata-ajuntament.barcelona.cat/data/en/dataset/mapa-base-guia-wmts
6	Contaminants of the air quality measurement stations of the city of Barcelona	City and Services Environment	Contaminants of the air quality measurement stations of the city of Barcelona	CSV	https://opendata-ajuntament.barcelona.cat/data/en/dataset/contaminants-estacions-mesura-qualitat-aire
7	Air quality measure stations of the city of Barcelona	City and Services Environment	Air quality measure stations of the city of Barcelona. Main characteristics of each one are detailed.	CSV	https://opendata-ajuntament.barcelona.cat/data/en/dataset/qualitat-aire-estacions-bcn
8	Qualitat de l'aire de la ciutat de Barcelona	City and Services Environment	Es mostren dades dels contaminants mesurats a les estacions de la ciutat de Barcelona. L'actualització es realitza en intervals d'una hora indicant si el valor està o no validat i també es mostren les dades dels tres dies anteriors a l'actual. Tanmateix es publiquen històrics amb periodicitat mensual.	CSV	https://opendata-ajuntament.barcelona.cat/data/en/dataset/qualitat-aire-detall-bcn
9	Off-street parking inventory of the B:SM network in the city of Barcelona	City and Services Transport	Off-street B:SM (Barcelona de Serveis Municipals) parking inventory in the city of Barcelona.	JSON	https://opendata-ajuntament.barcelona.cat/data/en/dataset/aparcaments-sota-superficie

DATA SETS

#	TITLE	TOPIC	DESCRIPTION	FORMAT	LINK
10	Evolution of the current expenditures by policy of the Barcelona City Council	Administration Public sector	Current expenditures by policy (classification by programs). Actual amounts shown in € million and in terms of budgetary accounting.	CSV	https://opendata-ajuntament.barcelona.cat/data/en/dataset/evolucio-despeses-corrents-per-politiques
11	Authorizations for terraces on public use space in the city of Barcelona	Economy and Business Trade	Authorizations for terraces in public use space, by seasons and annually, in the city of Barcelona. These are restaurants and food shops that, regarding their typology, their authorization is allowed.	CSV	https://opendata-ajuntament.barcelona.cat/data/en/dataset/terrasses-comercos-vigents
12	Average rental price	Housing	Annual evolution of the average monthly rental price in the municipalities of the metropolitan area of Barcelona.	CSV / JSON	http://www.amb.cat/en/web/area-metropolitana/dades-obertes/cataleg/detall/-/dataset/preu-mitja-de-lloguer/6737819/11692
13	Actions for environmental mitigation	Local administration Environment	Municipal scale data on the type of actions planned in the field of environmental mitigation and adaptation and its state of execution. Own source based on the data of the different Action Plans (PAES and PAESC).	ODS / XLSX	https://dadesobertes.diba.cat/datasets/accions-de-mitigacio-mediambiental
14	Municipalities adhered to the Covenant of Mayors for Climate and Energy	Local administration Environment	Municipalities adhered to the Covenant of Mayors for the Climate and Energy, a European initiative through which the municipalities undertake to reduce the emissions of greenhouse gases. The data set includes information on the dates of accession, both in the old agreement and in the new one, since there are municipalities that have reaffirmed their commitment to more ambitious goals.	ODS / XLSX	https://dadesobertes.diba.cat/datasets/municipis-adherits-al-pacte-dels-alcaldes-pel-clima-i-lenergia
15	Emissions of greenhouse gases from municipalities	Local administration Environment	Emissions of greenhouse gases at municipal level, by sources and by sectors. Emission factors are applied to energy consumption. The emission factors are those determined by the methodology of the Mayors Pact for the environment established by the Covenant of Mayors (CoMO). The waste is those established by the Catalan Office for Climate Change of the Generalitat de Catalunya. The electricity emission factor is calculated for each municipality according to the CoM methodology and from the emission factor of the CNMC (it is published annually in the labeling reports of electricity).	ODS / XLSX	https://dadesobertes.diba.cat/datasets/emissions-de-gasos-defecte-hivernacle-dels-municipis
16	Profile of the environmental commitment of the members of the Network of Cities and Towns towards Sustainability	Local administration Environment	The Network of Cities and Towns for Sustainability is an association of municipalities presided over and supported by the Diputació de Barcelona, which has more than 290 members, most of which are local entities of Catalonia. This dataset includes the following information about the environmental commitment profile of the members of the Network: List of validation of the adhesion of the local entity to the Network, institutional declarations of the Network and international agreements on sustainability. List of validation on approved municipal environmental decrees related to the saving of water, noise, solar thermal energy or the environment in general. Listed with the links to experiences of municipal gardens of leisure, school or social type. List of validation of the municipalities that petitioned the Environmental School Agenda and the development of the Network.	ODS / XLSX	https://dadesobertes.diba.cat/datasets/perfil-del-compromis-ambiental-dels-membres-de-la-xarxa-de-ciutats-i-pobles-cap-a-la
17	Oil recycling containers in the city of Barcelona	City and Services Environment	Recycling oil container in the city of Barcelona. The coordinates are measured with the ED50 reference system and with the geographic system (longitude and latitude).	XML	https://opendata-ajuntament.barcelona.cat/data/en/dataset/contenidors-reciclatge-olis

ADDITIONAL SOURCES

	LINK	DESCRIPTION
1	https://www.kaggle.com/datasets	In March 2017, Google Cloud acquired Kaggle, a platform that engages over 1.5 million data scientists worldwide, in order to further data accessibility and implementation. Kaggle not only hosts crowd-sourced competitions for collaborative problem solving, but they also host data via their Kaggle Datasets platform. Each of the thousands of datasets shared on Kaggle is available through Kernels, which is a data science and machine learning workbench that comes pre-loaded with Python and R, popular libraries, and the ability to fork and comment on other Kagglers' analyses—at no charge. Inside Kaggle you'll find all the code & data you need to do your data science work. Use over 19,000 public datasets and 200,000 public notebooks to conquer any analysis in no time.
2	https://opendata-ajuntament.barcelona.cat/en/	Ajuntament de Barcelona's open data service
3	http://governobert.gencat.cat/en/dades_obertes/	Open data initiative of the Generalitat de Catalunya. It has datasets about all of Catalonia and concerning the city of Barcelona, among which are the incidents of the Rodalies service or public facilities.
4	https://dadesobertes.diba.cat/	Portal with data managed by the Diputació de Barcelona and municipal bodies.
5	http://cartotecadigital.icc.cat/	
6	https://datos.gob.es/es	Iniciativa de datos abiertos del Gobierno de España
7	https://www.tmb.cat/es/sobre-tmb/herramientas-para-desarrolladores	Herramientas para desarrolladores Colaboramos con desarrolladores de aplicaciones y plataformas de información, y facilitamos los datos del transporte en tiempo real.
8	https://data.upf.edu/en/dataset	
9	https://datacatalog.worldbank.org/search	The World Bank Group is one of the world's largest sources of funding and knowledge for developing countries. Its five institutions share a commitment to reducing poverty, increasing shared prosperity, and promoting sustainable development.
10	https://registry.opendata.aws/	This registry exists to help people discover and share datasets that are available via AWS resources.

ADDITIONAL SOURCES

LINK	DESCRIPTION
11 http://data.europa.eu/euodp/en/data/	The European Union Open Data Portal (EU ODP) gives you access to open data published by EU institutions and bodies. All the data you can find via this catalogue are free to use and reuse for commercial or non-commercial purposes.
12 https://github.com/freeCodeCamp/open-data	The freeCodeCamp.org community creates tons of data every month, and we open up as much of that data as we can (while being careful to respect our learners' privacy). In this repository, you will find: DatasetsAnalyses of those datasets Demos of projects based on the freeCodeCamp data Links to External Projects involving the freeCodeCamp data The data can be of interest to, but not restricted to, those looking for datasets and projects about: Web Analytics Social Media Analysis Social Network Analysis Education Analytics Data Visualization Data-driven Web Development Bots
13 https://www.yelp.com/dataset	The Yelp dataset is a subset of our businesses, reviews, and user data for use in personal, educational, and academic purposes. Available as JSON files, use it to teach students about databases, to learn NLP, or for sample production data while you learn how to make mobile apps.
14 https://opendataimpactmap.org/map	The Open Data Impact Map, a project of the Open Data for Development Network (OD4D), is a public database of organizations that use open government data from around the world. Open Data is publicly available data that can be accessed and reused by anyone free of charge. The Map was developed to provide governments, international organizations, and researchers with a more comprehensive understanding of the demand for open data. By mapping these organizations using open data, we can better identify, get feedback on, and improve the most valuable government datasets.
15 https://data.unicef.org/resources/resource-type/datasets/	UNICEF Data: Monitoring the situation of children and women
16 https://www.kdnuggets.com/datasets/index.html	Set of Datasets
17 https://github.com/awesomedata/awesome-public-datasets	Set of Datasets
18 https://msropendata.com/	A collection of free datasets from Microsoft Research to advance state-of-the-art research in areas such as natural language processing, computer vision, and domain specific sciences. Download or copy directly to a cloud-based Data Science Virtual Machine for a seamless development experience.
19 https://toolbox.google.com/datasetsearch	Google dataset search
20 https://research.google.com/youtube8m/	The YouTube-8M Segments dataset is an extension of the YouTube-8M dataset with human-verified segment annotations. In addition to annotating videos, we would like to temporally localize the entities in the videos, i.e., find out when the entities occur. We collected human-verified labels on about 237K segments on 1000 classes from the validation set of the YouTube-8M dataset. Each video will again come with time-localized frame-level features so classifier predictions can be made at segment-level granularity. We encourage researchers to leverage the large amount of noisy video-level labels in the training set to train models for temporal localization
21 https://cloud.google.com/bigquery/public-data/	Set of Datasets

THANK YOU