



# Using data to target support measures for vulnerable communities

A case study on the California Communities Environmental Health Screening Tool

November 2023

*Regional and  
Urban Policy*

# Using data to target support measures for vulnerable communities – A case study on the California Communities Environmental Health Screening Tool

## Key messages



- A monitoring tool can support local governments as they implement the just transition.
- CalEnviroScreen, the subject of this case study, informs policymakers in their decision-making by identifying the most disadvantaged areas.
- To capture the multifaceted stressors that vulnerable groups can be exposed to, a just transition monitoring tool should assess environmental, socioeconomic, and health-related stressors simultaneously.
- A comprehensive monitoring tool can be used to target critical investments to the most disadvantaged areas and inform policy development.
- Making the monitoring tool publicly available ensures that local communities can also use the tool themselves, for example to inform community projects.

## 1. Introduction

The California Communities Environmental Health Screening Tool (CalEnviroScreen) was developed by the California Environmental Protection Agency (CalEPA) as a key part of California's environmental justice programme. The tool supports the CalEPA to understand the impacts of environmental health hazards and pollution on disadvantaged communities across California as well as identify how to use climate funds to support and rejuvenate these communities. CalEnviroScreen is a good practice example in that it is a tangible data-gathering and monitoring tool that supports California as the state undergoes its energy transition.

## 2. What is the CalEnviroScreen tool?

### 2.1 Background

Many communities in California that are home to low-income residents, indigenous people, people of colour, and immigrants are affected by environmental pollution. These communities are often at a socioeconomic disadvantage and live near environmental health hazards that aggravate pre-existing health conditions.

The CalEnviroScreen tool was developed to respond to these challenges and support a comprehensive approach to address the environmental and socioeconomic burdens experienced by these communities. Initiated by Californian environmental justice groups, this tool informs local, regional, and state policies to substantiate and protect California's disadvantaged communities<sup>2</sup>. The tool has intentionally been developed in an accessible manner: it is [publicly available](#) on the California

state webpage, provides user instructions, and is presented with associated documentation detailing the data gathering and usage methodology.

The data used to assess the environmental pollution levels across California (see Figure 1) is publicly available and provided by various Californian and national organisations, such as the California Air Resources Board, the California Department of Pesticide Regulation or the US Environmental Protection Agency, and other existing environmental monitoring tools, like the Water Boundary Tool. In terms of practical application and use, CalEnviroScreen helps inform policymakers in their decision-making. It supports CalEPA to determine how to allocate programme and funding resources to the most disadvantaged areas in need of support. The tool also informs how carbon pricing revenues from the Californian Cap-and-

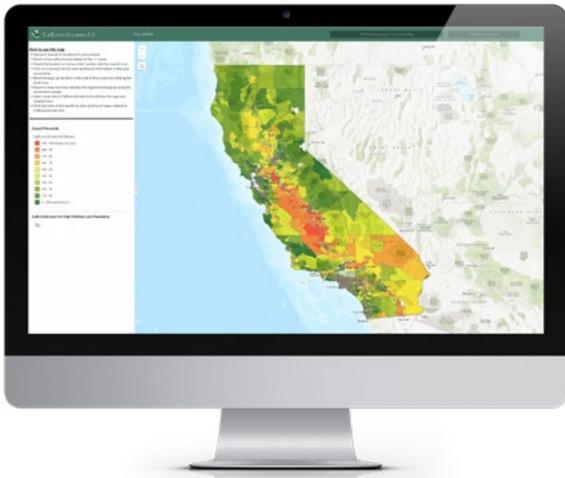


Figure 1 - Overview of CalEnviroScreen. Source: [https://experience.arcgis.com/experience/11d2f52282a54cee6cac7428e6184203/page/CalEnviroScreen-4\\_0/](https://experience.arcgis.com/experience/11d2f52282a54cee6cac7428e6184203/page/CalEnviroScreen-4_0/)

Trade Programme are spent, helping to target funding to vulnerable communities. In addition, the tool can be used by California communities to understand exposure and effects of pollutants in daily life.

Most environmental regulations address each pollution source individually, whereas communities experience pollution from multiple sources and at the same time. CalEnviroScreen breaks free from this single-issue view and assesses multiple, combined environmental stressors. Moreover, the tool also considers socioeconomic and health-related vulnerabilities that can aggravate the effects of pollution exposure. This multidimensional view is often still missing in environmental

decision-making, making CalEnviroScreen a good practice in just transition screening tools. Given that the CalEnviroScreen underlying datasets are publicly available, the tool can be adapted to fit unique circumstances.

## 2.2 Benefits and use for the just transition

California was one of the first states in the US to include the principle of environmental justice in legislation<sup>3</sup>. This refers, amongst others, “to the responsibility of governmental entities to ensuring the availability of a healthy environment for all people, the deterrence, reduction, and elimination of pollution burdens for populations and communities experiencing adverse effects of that pollution and to promote the meaningful participation of communities disproportionately impacted by pollution in environmental and land use decision-making processes”. CalEnviroScreen has played a vital role in advancing these goals and the just transition in California overall. The tool helps both governmental entities as well as communities identify pollution sources and their effects. In addition, the tool supports targeting critical investments and programme resources to support disadvantaged communities and support environmental justice initiatives.

CalEnviroScreen is used for various CalEPA programmes, as well as for program implementation across several other state entities, such as the California State Transportation Agency and the California Strategic Growth Council. A variety of laws, policies, and programmes now include explicit commitments or carve outs for environmentally impacted communities, all based on the data and information provided by CalEnviroScreen.

### The three main use domains:

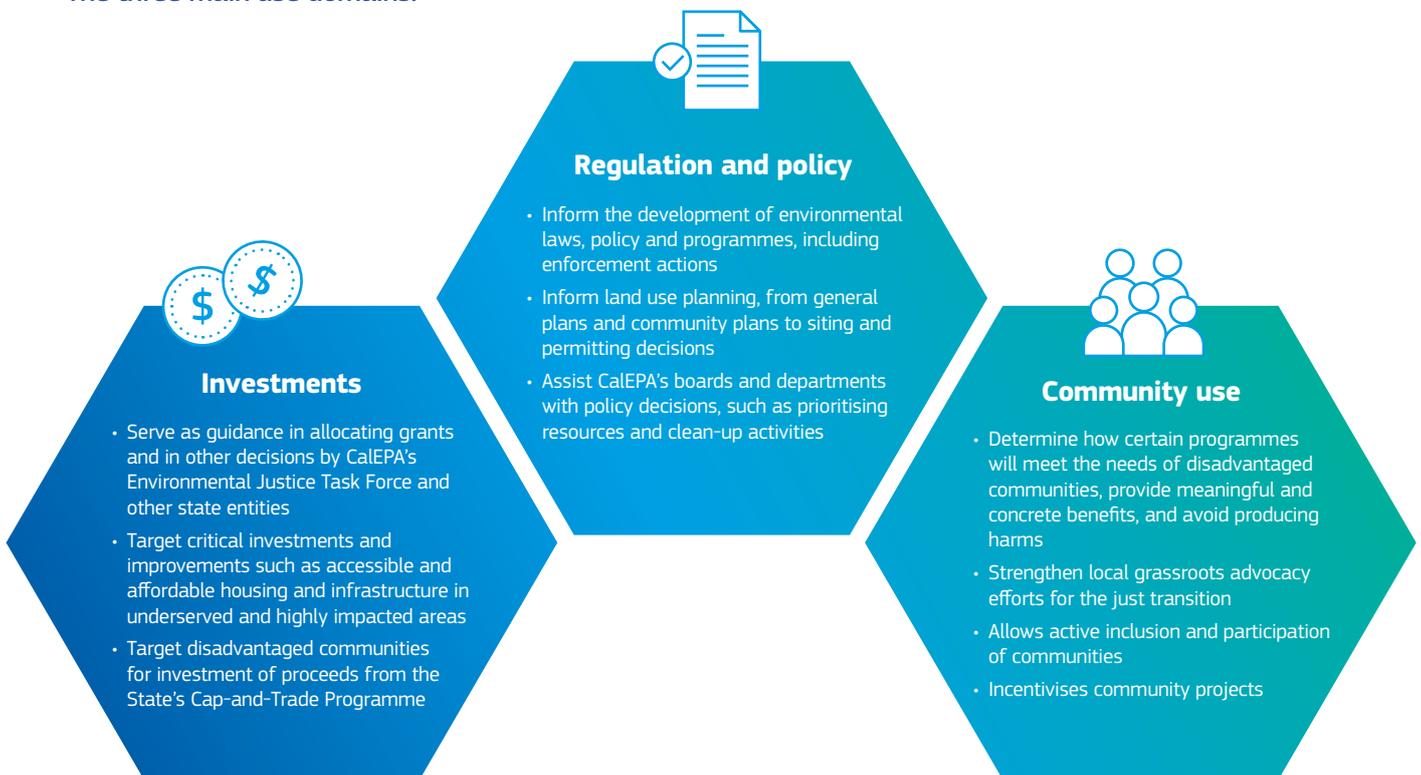


Figure 2 - illustrates the three main CalEnviroScreen use domains

## 2.3 Method

CalEnviroScreen uses 21 state-wide indicators of pollution burden and population characteristics associated with increased vulnerability to pollution (see Figure 3)<sup>4</sup>. The majority cover pollution burden, such as ozone, pesticide use or various particulate matter (PM) concentrations. Eight indicators cover population characteristics like poverty, education, or cardiovascular disease rates. These indicators were selected based on expert recommendations, available state and federal data, and public input.

To map pollution burdens across California's population (see Figure 1), numerical scores are assigned for each of the indicators in a given geographical area. These scores are then averaged for all indicators representing pollution burden and for those representing population characteristics. Combining the resulting two scores produces a CalEnviroScreen score, ranging from 0 to 100, for a specific area in California. An area can be either a county, city, or senate or assembly districts. A high score indicates that communities experience higher environmental vulnerability.

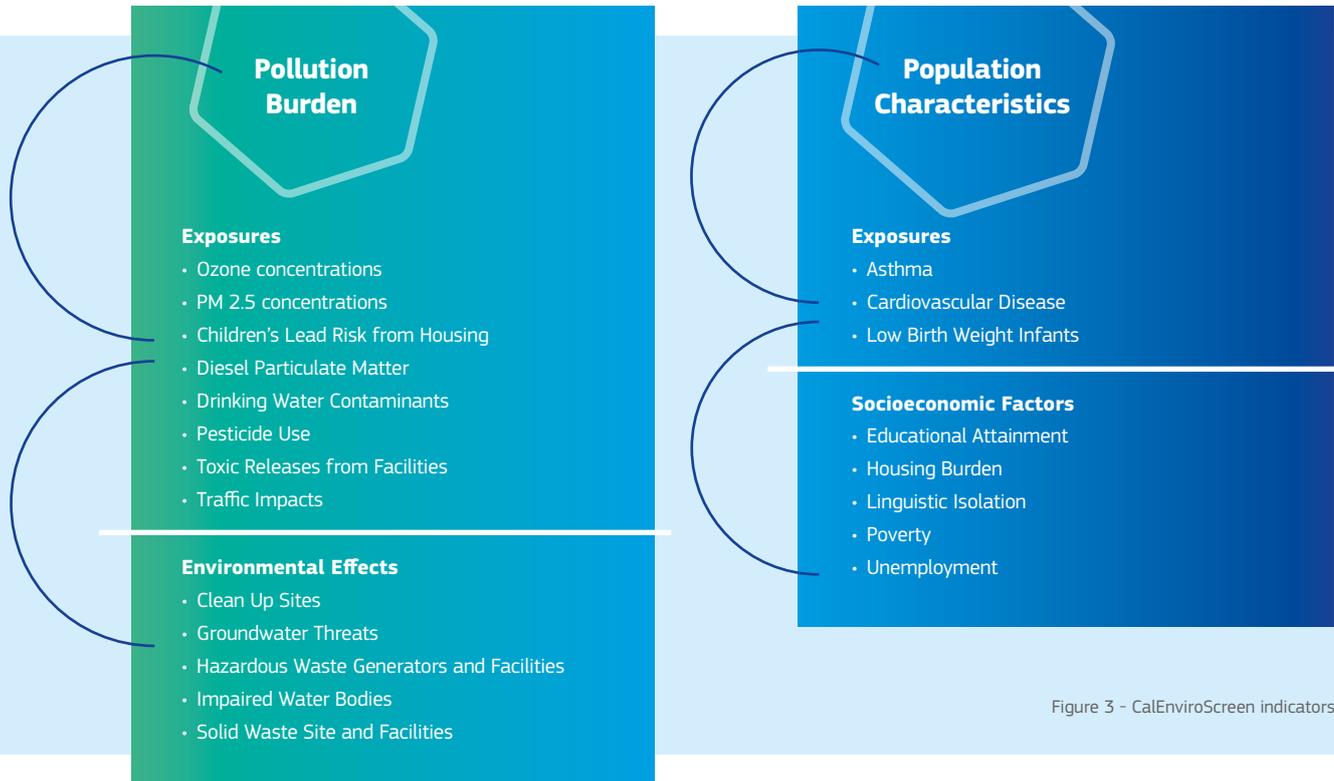


Figure 3 - CalEnviroScreen indicators

Using geographic information system (GIS) technology, the results are colour coded, ranked, and depicted on a map so that different communities can be compared to one another easily. As such, CalEnviroScreen represents a relative evaluation of pollution burden and pre-existing socioeconomic disadvantages in Californian communities. Through incorporation of new data sources and community feedback, the tool continues to evolve with each version.

## 3. Examples of practical use

CalEnviroScreen helps to support and define disadvantaged communities and the tool has contributed to improving living and health conditions in two of California's unhealthiest places<sup>5</sup>.

Fresno and Los Angeles County used CalEnviroScreen to identify the communities most affected by pollution and to prioritise funding for parks in these neighbourhoods. Fresno for example, a city in the state's San Joaquin Valley, and communities in Los Angeles County used to be among the unhealthiest places to live

in California. Exposure to air and noise pollution caused by heavy traffic, exposure to toxic chemicals, and illegal waste dumping due to a lack of waste disposal sites caused unfavourable living conditions. The communities are also socioeconomically vulnerable, with 25% of the population lacking health insurance. Fresno and Los Angeles County then used the data from CalEnviroScreen to consult the identified communities to understand their concerns regarding environmental pollution and gather input to inform policymaking. Both jurisdictions also



provided compliance assistance to industries and businesses and coordinated compliance inspections and enforcement activities to actively address the environmental issues within the affected communities. Local governments also leveraged the CalEnviroScreen data to design and implement regulations to reduce air pollution, hazardous and solid waste mismanagement, and pesticide and water contamination. Today, polluting facilities and industries follow the new regulations and environmental pollution has improved in Fresno and communities in Los Angeles County.

While both examples consulted the communities as a first step to address the various environmental and socioeconomic challenges, the projects in Los Angeles also partnered directly with local non-profit organisations in the affected areas to identify and address the community's needs. This shows that a tool like CalEnviroScreen can be used to identify disadvantaged communities most affected by pollution and then help to inform programs and policies to control and mitigate pollution sources.

## 4. How can a similar tool benefit the just transition in the EU?

In Europe, one in ten premature deaths is linked to pollution.<sup>6</sup> Regions in the EU that are moving away from fossil fuel-based industries are disproportionately affected and often home to vulnerable communities. As part of their Territorial Just Transition Plans (TJTJs) and as outlined in the Just Transition Fund (JTF) Regulation, regions in the EU most impacted by the transition towards climate-neutrality, are required to monitor the development and statutes of their transition process. Data on environmental pollution and socioeconomic factors also exists in the EU, and while geographical coverage and granularity are currently an obstacle, some EU instruments are available to inform decision-making. However, a multidimensional view assessing the multi-faceted challenges from the transition, ranging from environmental to socio-economic, is currently missing, as every available instrument assesses social and environmental issues separately<sup>7</sup>, for instance:

- The **Transitions Performance Index (TPI)** is a scoreboard that monitors and ranks all EU countries and 45 other countries on their transition to fair and prosperous sustainability. The transition is measured on four dimensions: economic, social, environmental, and governance performance.
- The **Leave-No-One-Behind Index** tracks inequalities along four dimensions: poverty, services, gender, and income. A higher score means that fewer population groups are left behind.
- The **European Environment and Health Atlas** presents information on inequalities in the distribution of environmental risks to health across Europe. Its “Check your place” feature allows users to enter an address and check the quality of its environment. The Atlas also has a collection of **maps** featuring environmental risks or benefits to health.
- Looking ahead, the **European Climate and Health Observatory** provides tools to prepare for and adapt to the impacts of climate change on health. The Observatory includes **maps** on the exposure of vulnerable groups and social infrastructure to climate-related risks and **maps** on the distribution of urban green spaces in relation to vulnerable groups.

In addition, the **CINTRAN Maps** (which are not an EU instrument specifically) combine a wide range of data, e.g. income and unemployment rate and dependence on the fossil fuel industry, into the “socioeconomic risk index”, indicating the regions which will rely most on support to overcome the challenges related to decarbonising their energy systems. The results are publicly accessible in **interactive maps**.

The JTF Regulation introduces output and result indicators to establish a performance framework to monitor, report on and evaluate TJTJ implementation. And while one of these output indicators refers to the area covered by air pollution monitoring systems, combined influencing factors are not considered. There are also significant data gaps – socioeconomic data mainly focuses on GDP per capita, and data on educational attainment or health status is often not available. These instruments can serve as a foundation to inform and monitor the just transition in the EU, but given the strong multidimensional nature of the just transition, monitoring just transition implementation necessitates a combination of indicators from different issue domains, such as social and environmental, and in-depth analyses that go beyond single-number indicators<sup>8</sup>. The CalEnviroScreen tool is a good practice example that can inform the development of just transition monitoring platforms in the EU, help prioritise those JTF-funded projects to target disadvantaged communities in most need and improve transparency for regions in transition.

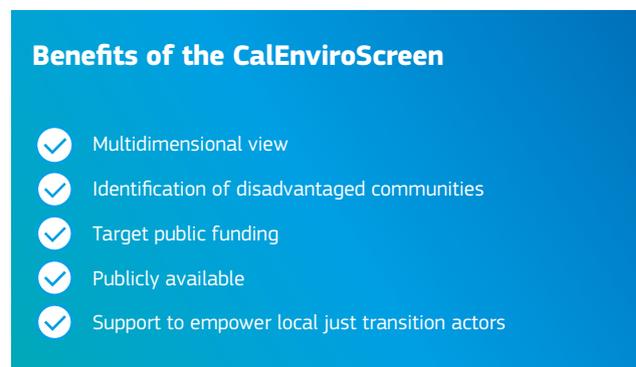


Figure 4 - Benefits of the CalEnviroScreen

This document was prepared by researchers at Guidehouse having conducted desk research, interviews and surveys. Any information and views contained in the present document do not reflect the official opinion of the European Commission. Reuse is authorised provided the source is acknowledged.

This document is part of a series presenting information and lessons learned on policy approaches at national, regional or local level supporting a just transition to a climate-neutral economy. The Just Transition Platform (JTP) assists EU Member States and regions to unlock the support in this transition. Visit the [JTP website](#).

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## Endnotes

- 1 Note that 'environmental justice' and 'just transition' can be used interchangeably. While environmental justice is more commonly used in the US, just transition is the known term across Europe focusing also on reducing the negative effects of transition to a climate-neutral economy.
- 2 California Green Zones (2023): CalEnviroScreen: A Critical Tool for Achieving Environmental Justice in California, <https://calgreenzones.org/calenviroscreen-a-critical-tool-for-achieving-environmental-justice-in-california/>
- 3 California Environmental Protection Agency (2023): Environmental Justice Program, <https://calepa.ca.gov/envjustice/>. The relevant government statute (California Code, Government Code - GOV § 65040.12, [https://codes.findlaw.com/ca/government-code/gov-sect-65040-12.html/?/](https://codes.findlaw.com/ca/government-code/gov-sect-65040-12.html?/))
- 4 California Office of Environmental Health Hazard (2021): CalEnviroScreen 4.0, <https://oehha.ca.gov/media/downloads/calenviroscreen/report/calenviroscreen40reportf2021.pdf>
- 5 Faust et al. (2021): California's Environmental Justice Mapping Tool: Lessons and Insights from CalEnviroScreen, <https://heinonline.org/HOL/LandingPage?handle=hein.journals/elma51&div=95&id=&page=>
- 6 European Environment Agency (2023): Health, <https://www.eea.europa.eu/en/topics/at-a-glance/health>.
- 7 European Environment Agency (2019): Environmental Justice, Environmental Hazards and the Vulnerable in European Society, <https://www.eea.europa.eu/publications/unequal-exposure-and-unequal-impacts/environmental-justice-environmental-hazards-and-the-2vulnerable>
- 8 Oeko-Institute (2021): Measuring a Just Transition in the context of the 8th Environment Action Programme <https://www.oeko.de/fileadmin/oekodoc/JustTransition-Indicator-Paper.pdf>