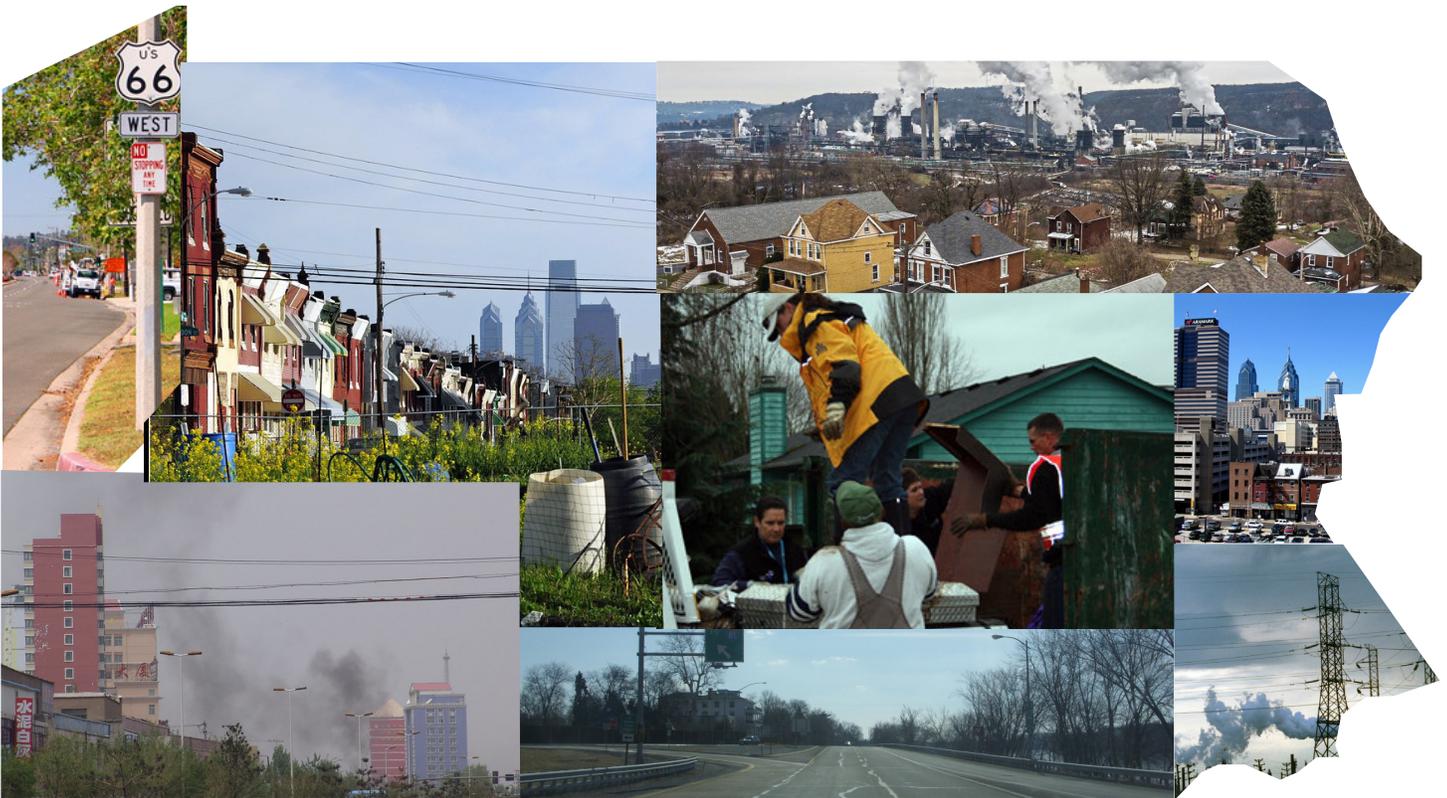


A Just Regional Greenhouse Gas Initiative

Meaningful Engagement and Air Quality Benefits
in Environmental Justice Communities



Dickinson College
Department of Environmental Studies

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Executive Summary

Main report goals

- Create an infographic to communicate RGGI to the general public
- Document community air pollution concerns in Pennsylvania
- Document past injustices associated with existing emissions trading programs
- Detail paths for meaningful community engagement
- Highlight innovations in using emissions trading revenue to target air pollution reduction in environmental injustice communities
- Detail other innovations in reducing air pollution in underserved communities

Listening: Pennsylvania Community Air Pollution Concerns

- Although sources of air pollutions vary across Pennsylvania, **human health**, with a specific emphasis on **children's vulnerability**, is a central concern among residents
- **Residents feel silenced.** They express concern that government officials and industries don't listen to or respond to their air pollution concerns
- Air pollution solutions must respond to local preferences in environmental justice areas and other disadvantaged areas
- Air pollution is not the only concern in disproportionately impacted communities. Other government programs should address other intersectional development concerns in air pollution impacted communities, including food poverty, energy insecurity, and lack of employment opportunities

Learning: Environmental Injustices in California's Cap-and-trade Program

- California's cap-and-trade program reduced greenhouse gas emissions in the state, but concentrated pollution in environmental justice areas
- More than half of California plants increased their emissions since the implementation of cap-and-trade
- Communities of color, lower income, and lower education levels are more likely to be sited near plants with toxic emissions
- New legislation and community engagement practices aim to correct these injustices, but further improvement is needed
- To avoid similar injustices to California, Pennsylvania should:
- **Foresee** potential environmental injustices
- **Invite** EJ and other disadvantaged community members to serve on RGGI decision-making entities
- **Utilize** auction proceeds for air pollution programs that will directly benefit environmental justice communities

Engaging: Meaningful Community Engagement

- Limited means of communication, inaccessibility of languages, and a lack of trust from communities are barriers to engage with residents, especially ‘hard-to-reach’ groups
- Create inclusive spaces, build trust, and actively listen to communities are key practices that decision-makers should follow to meaningfully engage communities.
- **Create inclusivity** among decision-makers and in engagement initiatives is key to achieving environmental justice
- **Trust** is earned through transparency, open communication, and accountability between decision makers and communities
- It is important to listen to communities without a pre-determined agenda and integrate feedback into initiatives

Innovating: Community Centered Air Pollution Solutions

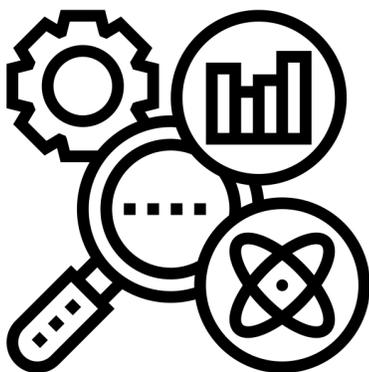
- Given the range of air pollution needs, innovations to encourage air pollution benefits must respond to local preferences in environmental justice areas and other disadvantaged areas
- A community centered approach would:
 - **Identify and engage** community partners to provide input on program design and projects
- Decision-makers should **adapt** initiatives to respond to community concerns
- **Create opportunities** for environmental justice and other disadvantaged community members to make decisions about RGGI proceeds
- It is also vital for Pennsylvania to invest in and encourage renewable energy proj-





Introduction

Dickinson College students completed this report at the request of the Pennsylvania Department of Environmental Protection (DEP), Office of Environmental Justice. The DEP asked for a report and presentation outlining best practices for using proceeds from greenhouse gas reduction programs to prevent pollution concentration in environmental injustice communities in Pennsylvania. Once finalized, the proposed Regional Greenhouse Gas Initiative (RGGI) will generate proceeds for air pollution reduction in the commonwealth. The RGGI program sets a cap on carbon dioxide emissions in ten participating states in the Northeast of the United States. To complete this timely research, students conducted research from January–May 2021, with approval from Dickinson College’s Institutional Review Board. The findings were presented to the PA DEP and the report will be available to the public.



Created by Eucalypt
from Noun Project

Research Methods

Research methods included:

- Literature Review
- 25 interviews with community members, non-profit representatives, government employees, academics, and scientists
- Air pollution and health community survey
- Observation of public forums on air pollution and environmental justice



Investing in PA Communities through the Regional Greenhouse Gas Initiative (RGGI)

▼ PA Regional Pollutant "Cap"



The Problem: Carbon Dioxide Pollution

This pollution increases temperatures and reduces air quality, with health and economic costs for communities.



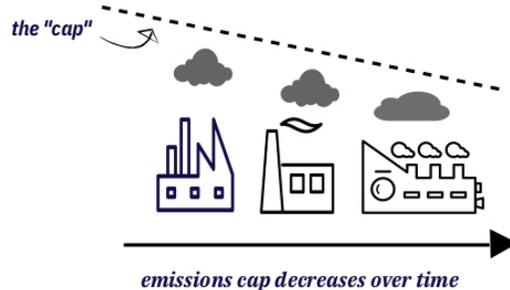
By 2050

The Goal: RGGI

The Regional Greenhouse Gas Initiative (RGGI) is a partnership between 11 Northeastern and mid-Atlantic states with the goal to reduce carbon dioxide pollution, increase air quality, and combat climate change.

How it Works:

RGGI program would set *limits* on carbon dioxide emissions from major power plants through a **regional pollution cap**.



Polluters have to pay for the amount they emit. Funds are then **reinvested** into PA's economy and vulnerable communities to reduce air pollution.



PA Community **Benefits** of RGGI:



Improved Health

- A **Decrease** in...
 - premature **deaths**
 - **ailments** such as heart attacks, asthma, and acute bronchitis
 - **hospital visits** due to respiratory and cardiovascular illness
 - **low birth rates**
- **Improved** water quality



Environmental Benefits

- **Improved** visibility and ecosystem health
- **Reductions** of toxins in the air and effects of climate change
- **Investments** in green infrastructure to reduce air pollution



A Strong Economy

- A net increase of over 27,000 **jobs** & decrease in lost work days*
- Return on investment to the state
- **\$2.9 billion** economic proceeds to PA and other RGGI states*
- GDP of the RGGI states has grown by 47%, outpacing growth in rest of the country by 31%*



*Source: Manion, M. et al. Analysis of the Public Health Impacts of the Regional Greenhouse Gas Initiative, 2009–2014.

*Source: Acadia Center (2019). RGGI 10 Years in Review. Acadia Center Report.

*Source: Department of Environmental Protection. Regional Greenhouse Gas Initiative: What's RGGI?

For more information visit www.rggi.org or contact the Pennsylvania Department of Environmental Protection

Dickinson

Infographic by Sammie Trvalik and Jackie Greger

“The RGGI program improved air quality throughout the Northeast states and created major benefits to public health and productivity, including avoiding hundreds of premature deaths and tens of thousands of lost work days”
(Manion et al. 2017)



Listening: Pennsylvania Community Air Pollution Concerns

Access to clean, healthy air is a human right and essential to a safe environment where communities can thrive. The United Health Association ranks Pennsylvania's air quality as 48th out of US states, with several cities among the nation's most polluted (American Lung Association 2020). This section highlights how Pennsylvania communities experience air pollution, with special emphasis on environmental justice areas. Listening to Pennsylvania community air pollution concerns is foundational to ensure that RGGI is just for all commonwealth residents. While some data in this section is from across Pennsylvania, there are specific details reviewed in this section for Philadelphia and Delaware counties, Allegheny county, and the south-central region (including Harrisburg). These locations were chosen because of the severity of air pollution, diverse densities and demographics, the availability of data, and geographical location of interview and survey respondents. Prior to detailing community voices, this section reviews emission sources, defines environmental justice, and includes a map on elevated air pollution concentration and environmental justice areas.



Carbon Dioxide(CO2) Emission Sources in Pennsylvania, 2019 (PA DEP 2021)

Electrical generating units
 Manufacturing
 Unconventional shale gas (fracking)



“Racial–ethnic minorities in the United States are exposed to disproportionately high levels of ambient fine particulate air pollution (PM2.5), the largest environmental cause of human mortality... Because of a legacy of racist housing policy and other factors, racial ethnic exposure disparities have persisted even as overall exposure has decreased. Targeting locally important sources for mitigation could be one way to counter this persistence”

(Tessum et al. 2021)

Methane Emissions from Fracking in 2019 (PA DEP 2021)

County	Emissions (Tons Per Year)
Susquehanna	26,509
Greene	19,458
Lycoming	15,155
Tioga	12,439
Bradford	12,025



Environmental Justice Defined

“Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when everyone enjoys:

- The same degree of protection from environmental and health hazards, and
- Equal access to the decision-making process to have a healthy environment in which to live, learn, and work” (EPA 2021)



Environmental Justice Areas

The Pennsylvania DEP (PA DEP) defines EJ areas as any census tract where:

- 20% or more of individuals: at or below the federal poverty line
- and/or
- 30% or more of the population: identifies as a non-white minority

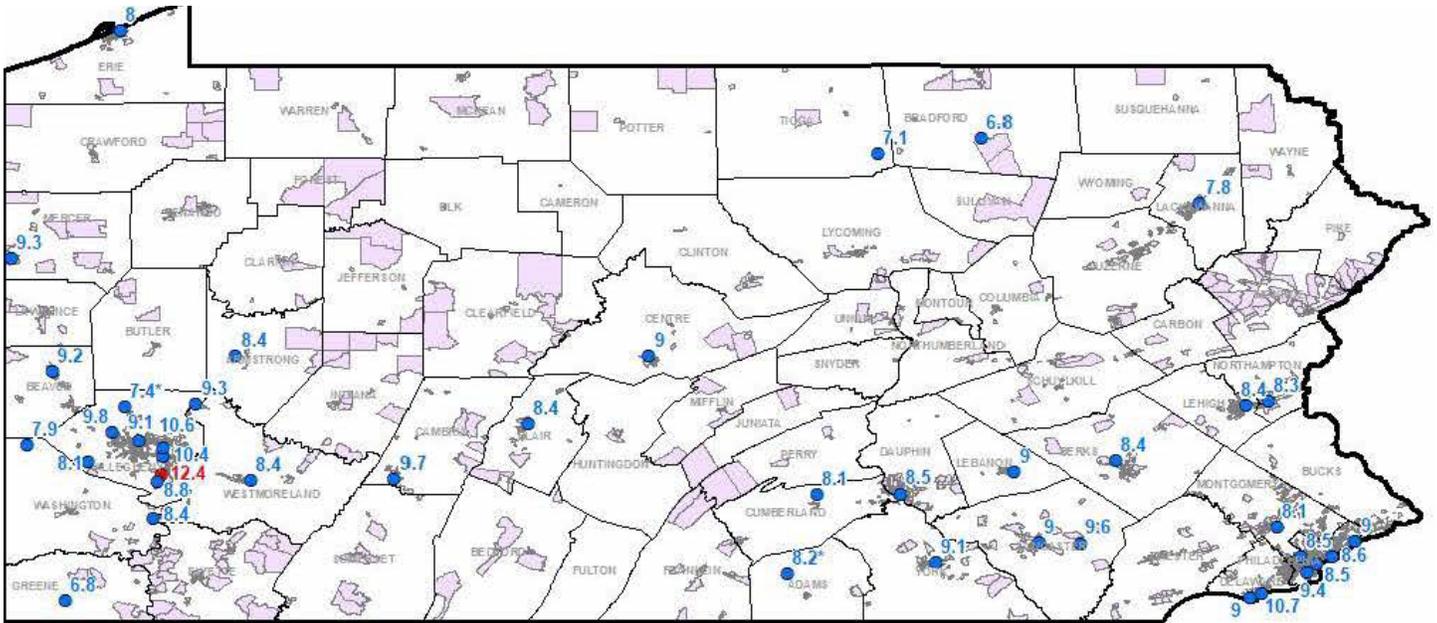
These amounts are based on US Census data and federal poverty guidelines (PA DEP 2021)



Using Data to Prioritize Air Pollution Reduction and Community Engagement

Pennsylvania-wide data, including the high air pollution level (PM 2.5) and environmental justice area map, should guide decision makers to prioritize areas for air pollution reduction. Further, community members from the most polluted environmental justice areas should serve on RGGI decision-making entities.

High Air Pollution Levels (PM 2.5) and Environmental Justice Areas (PA DEP 2021)



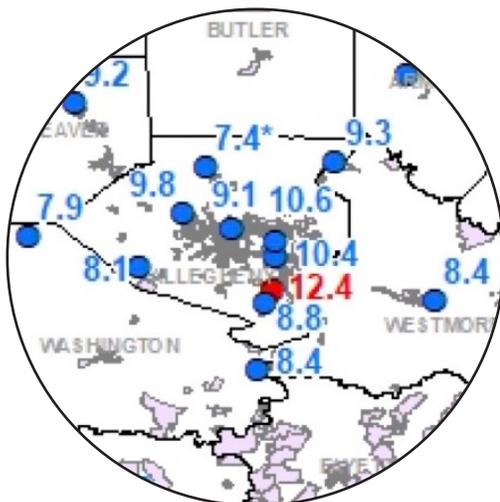
2015 Environmental Justice Areas

EJ Area by Census Block

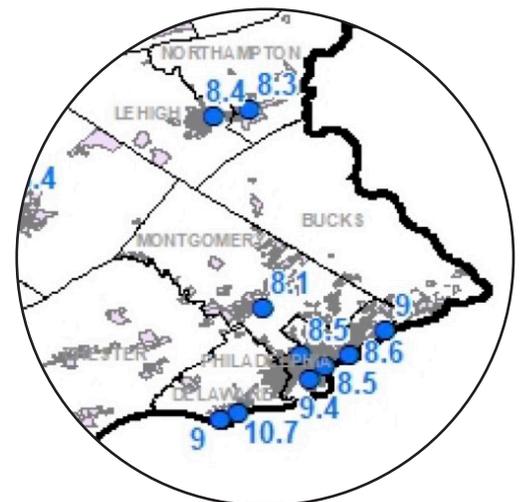
Appearing in Red: 2019 Annual PM_{2.5} Design Value above 12.0 µg/m³ (2012PM_{2.5} Standard)

Appearing in Blue: 2019 Annual PM_{2.5} Design Value at or below 12 µg/m³ (2012PM_{2.5} Standard)

Pittsburgh

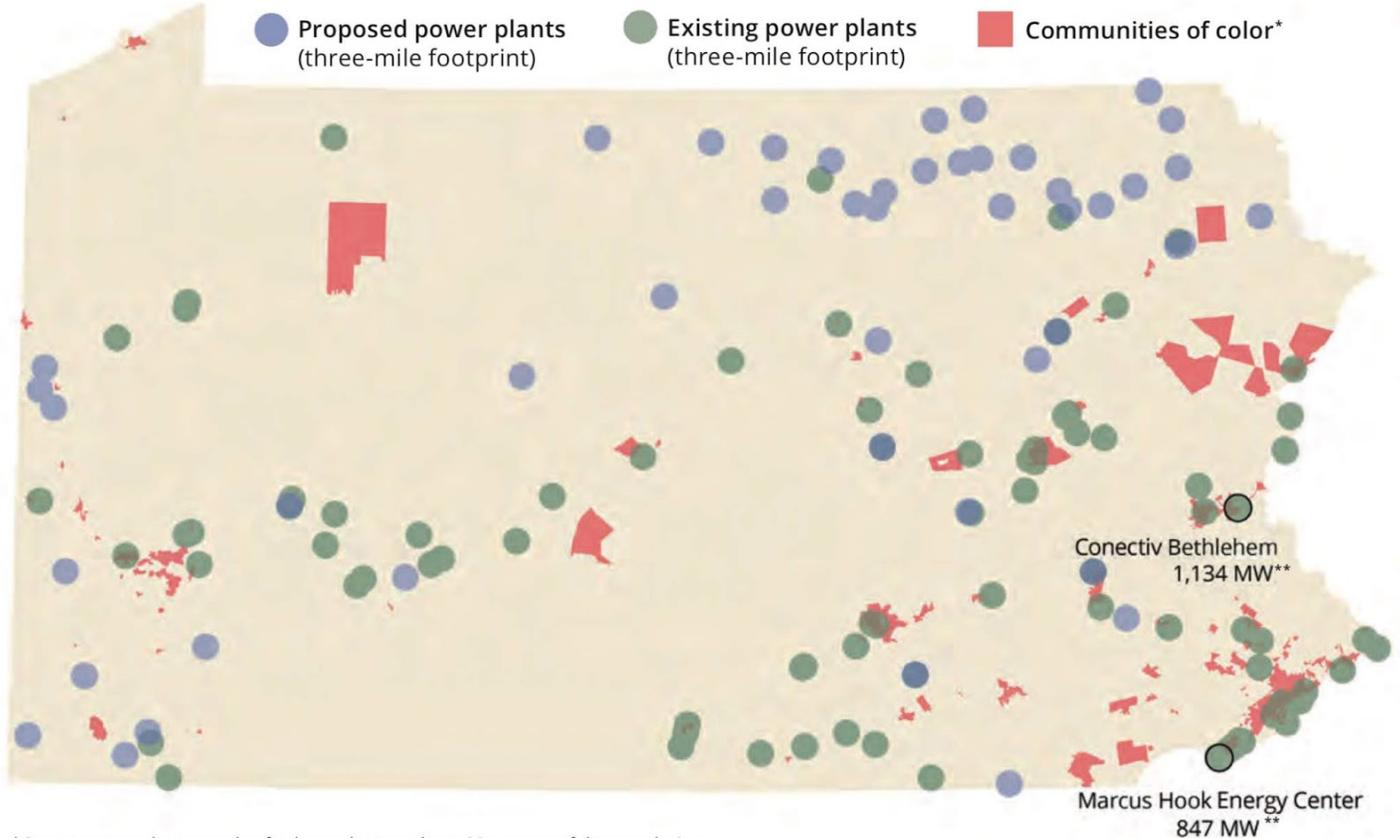


Philadelphia



Power Plants and Communities of Color (Henn 2018)

This map outlines where existing power plants and proposed power plants are in relation to predominantly people of color neighborhoods in Pennsylvania.



*Census tracts where people of color make up at least 30 percent of the population.

**MW = megawatts

“What’s drawing [polluter] companies here? They were drawn here because they felt as if this was the path of least resistance. Because of the way people view communities of color. Pointblank period”

(4/4/21 Interview, Zulene Mayfield)

“I totally feel like environmental racism is real. It’s very real [...] It’s like they’re trying to kill us off quicker”
(4/19/21, ABC news, Sherita Bibbs)

Health Impact

Pennsylvanian resident's primary air quality concerns are related to the negative health consequences that come with exposure to air pollution. Excessive long-term exposure has been linked to several life-threatening health conditions: permanent loss of lung capacity, shortened life span, and development of diseases such as asthma, bronchitis, emphysema, and cancer (Spare the Air 2021).



“I just wish there was more awareness that it really is dangerous for every family that lives here...it isn't as safe as we tend to want to make ourselves feel”

(4/1/21 Fractured, Jane Worthington)

“I know my family is only one of thousands in this state that suffer from climate accelerated asthma every day. But the Asthma Allergy Foundation of America has said that Philadelphia is the fourth worst place in 17 this country to live because of poor air quality and high ozone”

(12/9/20 Forum for CO2 Budget Trading Program, Anisa George)

“I've actually met kids [in Clairton] that are only breathing at about a third of the capacity they should be. And that's how they live. It's scary”

(6/11/2018, Environmental Health News, Dr. Deborah Gentile)

Children's Health

Exposure to pollution can significantly impact children's growth and development and can cause irreversible damage to the lungs (Madson and Wilcox 2006). There are several factors that put children at a higher risk of succumbing to illness or diseases. Children are more vulnerable to air pollution exposure because their lungs are still developing and because they breathe in more rapidly than adults (CDC 2020). According to the Center for Disease Control, children are at a heightened risk of getting sick from poor environmental conditions (CDC 2020).



The recommended amount of daily exercise for children is one hour per day, and for families who don't have access to indoor gyms and facilities for their children, the outdoors is a necessary for growth and enrichment (Nijhoff et al. 2018). When there is poor air quality, parents report that they are less likely to have their children play outside.

“How long are our kids expected to play inside? Why should they be expected to play inside? Who is tracking our health and what system is in place?”

(Unbreathable documentary 2020, Unknown speaker)

“Hazmat suits for children to go out and play. This is what young parents today worry about”

(12/9/20 CO2 Forum for CO2 Budget Trading Program, Joan Sabatino)

Parents of color reported removing their children from sports practice because of poor air quality

(Marusic 2018)

“We want our children to keep bringing children into this world and to continue to build the human legacy. We want our families to thrive and to live without the fear there may not be a stable world to live in”

(12/9/20 Forum for CO2 Budget Trading Program, Bishop Dwayne Royster)

Pediatric Asthma Prevalence

In Pennsylvania, an estimated 30,000 children a year will suffer from asthma attacks caused by ozone produced by the oil and gas industries (Grahm et al. 2017). However, children of color are impacted the most (DEP 2019). In Pittsburgh, predominantly African American schools have a high prevalence of childhood asthma: 22.5%. The areas around the schools had significant levels of air pollutants related to odds of asthma (Gentile and Skoner 2020).

“What we do have is high unemployment and underemployment. But how can we expect parents to work when they have to take off every time their kid has an asthma attack? [...] Black women are earning less here and suffering more negative health outcomes”

(12/9/20 Forum for CO2 Budget Trading Program, Tiffany Taulton)

Sensory effects

Many residents describe the visual and olfactory consequences of excessive air pollution. Some residents expressed how these consequences have caused inconveniences in their lives.

“In 2019 a smell event so strong seeped into and collected inside my home that we were all awakened and sickened with nausea and headache. It was so bad that I drove my husband and son with me out of the area to stay in a mountainside hotel until a friend texted to confirm the air had improved the next day and we could return”

(4/6/21 Our Right to Clean Air, Resident led Town Hall, Christine Graziano)

“I never missed a day running in New York City because the air smelled or because I felt like I had a breathing issue. In Pittsburgh, I’ve missed too many days to count. The most livable city in America isn’t livable if the air isn’t breathable”

(4/6/21 Our Right to Clean Air, Resident led Town Hall, Howard Rieger)

“This is a paper towel off a screen from my bedroom window that I clean every week. I clean this crap off my window. The Clairton Coke Works is one of the most toxic industrial facilities in Allegheny County”

(4/6/21 Our Right to Clean Air, Resident led Town Hall, Unknown Speaker)

“We’re tired of looking out our windows and seeing smoke bellowing in the sky encompassing us with a threat to my community, with these booms of toxic smells”

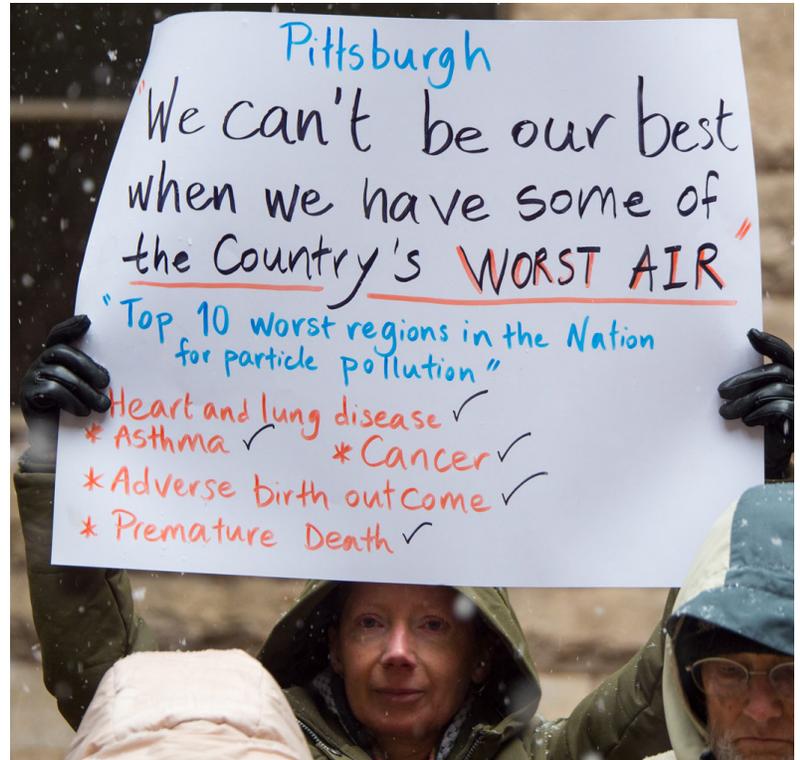
(1/1/17 Clean Up our Air documentary, Cheryl Hurt)

“I noticed a lot of trash and debris that was always in front of my property. And not knowing where it was coming from, we just cleaned up as we went along”

(1/10/18 Chester Residents Concerned for Quality Living, Dr. Horace Strand)

Lack of Voice and Response

Pennsylvanian residents reported feelings of helplessness associated with air pollution, particularly when they feel that government officials don't hear or respond to their concerns. Residents have felt powerless over industrial activity that encroaches on their communities without any proper notice. The struggle has been greater for residents in environmental justice areas. Many do not have the resources to dedicate time to challenging legislation or research industrial activity in their area. If community members and leaders cannot safely advocate for the betterment of their situation, it will discourage many from making their voice heard. Residents deserve to express their air pollution grievances and should be heard by government and industry officials who can resolve their concerns.



"I wasn't heard" (12/14/16 StateImpact Pennsylvania, Veronica Coptis)

Those who do make the time to voice their concerns face being met with silence. Veronica Coptis, the Executive Director of the Center for Coalfield Justice, travelled 200 miles from her environmental justice community to speak to the DEP in Harrisburg. When she asked the public forum speakers about approval for a coal mine permit Greene County's Ryerson Station State Park, she was ignored. The permit had already been signed, but Coptis was not informed until after the forum was over.

"We have a fracking well pad that was placed in our community and the reality is it was very quietly permitted. There were not very many people who knew about it and by the time the community really realized the process was so far along that there was no real way to stop it being placed. So, it sits on a hill above a great park that my kids spent much of their childhood playing softball and soccer"

(3/5/21 Interview, Vanessa Lynch)

"We know the polluting industries take advantage of racism, apathy and economic desperation to locate their facilities in areas that don't have the political power to stop them."

(12/9/2020 Forum for CO2 Budget Trading Program, Audra Wolfe)

Intersectional Development Challenges: Clean Environment or Jobs, Food, and Shelter?

This research details how communities of color and low-income communities are impacted by air pollution. These communities further face intersectional development challenges, including limited jobs, poverty, food and energy insecurity, discrimination, and other social concerns. Residents describe having to prioritize their basic needs for food, heating/ cooling, and shelter



“If I’m worried about studying and working and food and warmth [...] or that my kids get home from school or that my family is safe [...] I make it to the bus like I’m not worried as much about the toxic fumes that I’m going to be taking in while I’m waiting for the bus, or I’m not worried about air quality per say. It’s not a priority”

(4/5/21 Interview, Naida Elena Montes)

“I put roots here [in Clairton] because it was affordable, and then once I’m here I find out that there’s these issues to deal with [...] and I haven’t had the money to be able to move”

(1/1/2017 Clairton Coke Works, Clean Up our Air documentary, Pat)

“People who have jobs with oil and gas or who lease their land and are getting yelled at in community meetings or by their neighbors who fear for their health are often distressed too... They feel like they were just trying to take care of their families and now everyone is mad at them for it. It really can cause rifts across the entire community”

(4/1/21 Fractured, Jane Worthington)

Residents respond:

What are the ways that you think the government could be/should be involved in mitigating air pollution or decreasing it?

Role of government/ regulations

- Government should be leading the effort to mitigate air pollution by enforcing regulations on the companies that produce the most air pollution
- I don't think the government should be involved. Private companies are much better able to invent and manage technologies that better our lives. We are where we are because of government
- I would rather see each town/ city/ state make those decisions on how to improve air quality
- There is too much mistrust of government to make mandates the only tool. Involve business and communities
- Leave government out of it– air pollution should be handled per county

Mobile Emissions: Green Transit

- Emissions reduction, investment in transit
- Increasing the number of charging stations for electric vehicles
- Provide mass transit, promote lower emission vehicles, energy sources, appliances, etc. through grants, tax credits, etc.
- Electric vehicles and safe farming chemicals would be a good start

“Set health-based pollution limits, enforce meaningful penalties for illegal pollution, clean up or shut down the dirtiest parts of facilities that emit unhealthy levels of pollution”

(PA survey respondent)

Mobile emissions: Commercial trucks

- Put emission controls on truck emissions given we have extremely high truck traffic both in town and on nearby highways. Even with closed windows, I get black soot everywhere! I can't imagine what it is doing to my lungs
- More regulations on commercial trucks emissions

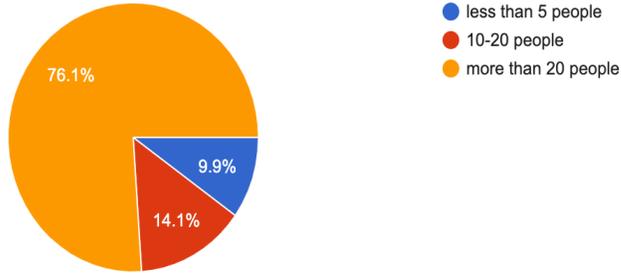
Air Monitors and Tools

- Provide air monitors all over the state, teach people of the significance of air quality
- Free radon testing in older homes, free/reduced rate radon mitigation. More focus on using knowledge as a tool
- Education about how pollution affects us and other biological beings: make it personal. Any time the air quality is too poor for sensitive people is one time too many

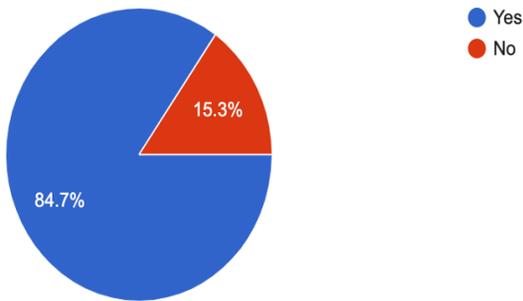
“Create a community health index for each district in every county statewide that identifies the current air quality conditions and pollution sources and gives an air quality grade. Communities with lower grades are eligible for funding to improve air quality and offset pollution sources. New pollution sources would not be able to gain permits to locate and operate in low air quality grade areas too”

(PA survey respondent)

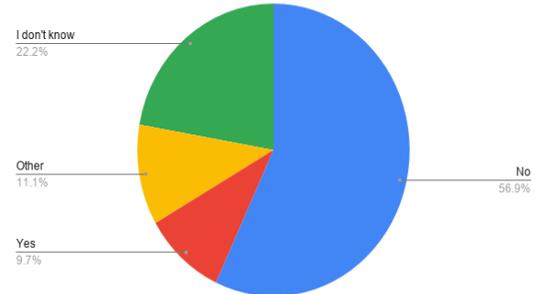
If you were to estimate the amount of people who face health problems because of poor air quality in your community, what number would that be?



Do you think you, your loved ones or people you know in your community deal with health issues that are either caused by or worsened by the air you breathe in?



Do you think air pollution is addressed in your community?



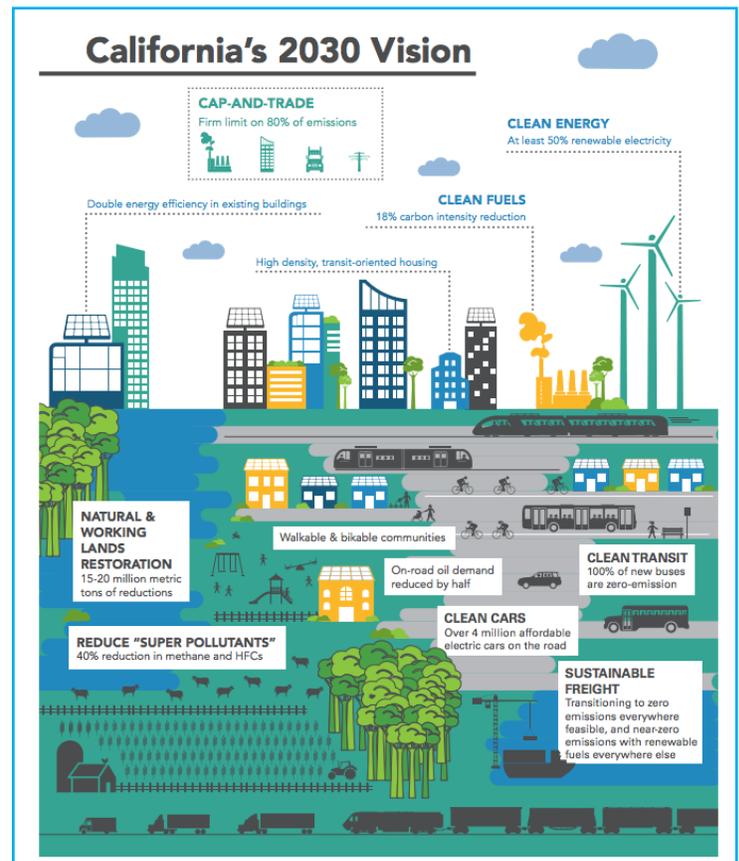
Concluding Lessons for Pennsylvania

- ✓ Good health, especially children's health, is at the center of most of the resident's concerns
- ✓ Sources of air pollution are diverse across Pennsylvania. There is no one-size-fits-all solution that will be adequate to meet the concerns of all Pennsylvanians
- ✓ Pennsylvania residents feel ignored by their local and state government leaders, and at times, even silenced
- ✓ Local solutions should be crafted to meet community needs and to address specific sources of air pollution
- ✓ Meaningful community engagement is vital to ensure air benefits for all Pennsylvanians
- ✓ Reducing carbon dioxide emissions is not enough to uplift and secure the safety of environmental justice communities. Government programs should address other intersectional development concerns in air pollution impacted communities, including food poverty, energy insecurity, and lack of employment opportunities
- ✓ The following section details environmental injustices associated with California's cap-and-trade program. Through understanding these injustices, Pennsylvania may work to foresee and prevent environmental injustices which may accompany RGGI



Learning: Environmental Injustices in California's

As Pennsylvania prepares to join RGGI, prioritizing environmental justice is essential to ensure all residents experience the benefits of decreased emissions. In other participating states, RGGI has been successful in reducing emissions while benefiting public health (Acadia Center 2018). However, other cap-and-trade programs show that the benefits of reduced greenhouse gas (GHG) emissions are not always experienced equally by the public. California's cap-and-trade program reduced state-level greenhouse gas emissions but resulted in increased air pollution in environmental justice communities. This section will discuss how California's program exacerbated environmental injustices, how state is mitigating pollution clustering, and how Pennsylvania can apply these lessons to allow all residents have access to clean air.



Concentration of Plants in Environmental Justice Communities

Large emitters regulated under cap-and-trade continue to disproportionately subject the most vulnerable Californians to air pollution. People of color are particularly subject to GHG emissions in California; research has demonstrated a positive correlation between the number of greenhouse gas-emitting plants in an area and the percentage of residents of color (Cushing et al. 2016). In addition, regulated facilities are also disproportionately located in neighborhoods with lower-income residents, lower education levels, and fewer English-speaking residents (Cushing et al. 2016). This trend of increased emissions in environmental justice communities worsens air quality, leading to increased health hazards for already vulnerable residents.

More than half of GHG emitters regulated under the California cap-and-trade program are in or within one half-mile of an environmental justice community (California Environmental Justice Alliance 2020)



How Do Carbon Dioxide Emissions Impact Human Health?

Carbon dioxide emissions are correlated with co-pollutants, such as large particulate matter, which are detrimental to human health (Cushing et al. 2016). When carbon dioxide emissions are reduced, so is exposure to particulate matter. Through reducing greenhouse gas emissions and improving air quality, RGGI states have decreased premature deaths, hospitalizations, and emergency room visits (Manion 2017).



Increased Emissions in Environmental Justice Communities

Not only are regulated facilities located largely in environmental justice communities in California, but such plants are also frequently failing to decrease their emissions under cap-and-trade. Since the implementation of the cap-and-trade program, fifty-two percent of regulated facilities increased their greenhouse gas emissions (Sanders 2018). For example, the Chevron Richmond Refinery, one of California's largest emitters, emitted more in 2017 and 2018 than it had since 2008 (Rosen 2020). These increased emissions are correlated with co-pollutants; many regulated facilities have also increased their particulate matter and air toxics emissions, which are harmful to human health. Facilities that increased their emissions under cap-and-trade were mostly located in environmental justice communities (Sanders 2018). This increase in local emissions is largely due to an overallocation of allowances, leading to an abundance of cheap allowances on the market (Cushing et al. 2016). The availability of inexpensive allowances left facilities with few incentives to reduce their emissions.

“Facilities regulated under California’s cap-and-trade program are disproportionately located in economically disadvantaged neighborhoods with higher proportions of residents of color, and the quantities of co-pollutant emissions from these facilities were correlated with GHG emissions through time”

(Cushing et al. 2016)

“Every time that we reduce pollution...it’s going to benefit EJ communities all over the state because they’re so disproportionately affected in the first place... But that doesn’t change the ratio of the burden”

(3/30/21 Interview, Annie Beaman)



Unequal Distribution of Burdens and Benefits

In California, the unfair distribution of greenhouse gas emitting facilities and the trend of increased emissions in environmental justice communities means the benefits of cap-and-trade are not distributed equally. Despite decreased state-wide emissions, environmental justice communities continue to experience disproportionate exposure to air pollution, which worsened following the implementation of cap-and-trade in many areas. While California's program has been touted as a success for decreasing state-wide emissions and improving overall public health, the most vulnerable populations are not receiving these benefits. Rather, air quality has improved state-wide, and environmental justice communities have been left out as their air pollution has become more extreme.

“California’s cap-and-trade program is a cautionary tale...The concept of trading pollution is always going to have a tendency to entrench pollution sources where they’re at, and that’s going to be in low-income communities and communities of color.”

(12/23/2020 PEW, Ingrid Brostrom)



COMMUNITY
AIR
PROTECTION



PROTECCIÓN DEL
AIRE
EN LA COMUNIDAD

California's Efforts to Address Environmental Justice Concerns

Community Air Protection Program

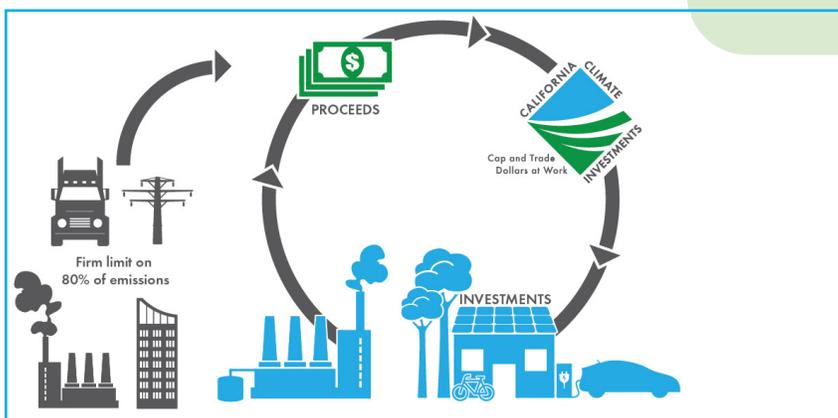
Since beginning the program in 2006, California has made certain strides to address the environmental justice concerns that have arisen from the implementation of its cap-and-trade program. In 2018, the California Air Resources Board (the governing body for the cap-and-trade program) developed the Community Air Protection Program (CARB 2018). Using air monitoring and emissions reduction programs, members of communities that are disproportionately impacted by greenhouse gas emissions can take charge of their community's health and provide data that informs policy decisions. 13 communities across California are currently taking part in the program, receiving training in air monitoring, access to data in an understandable way, and investments in clean technology and other improved structural changes (CARB 2018). This program is detailed more later in this report.

Targeting Revenue From Allowance Auctions

As of 2020, California is directing the revenue gained from its cap-and-trade allowance auctions toward developing projects that will benefit "disadvantaged...and low-income communities and households." (CA Climate Investments 2020). Some of the over 400,000 initiatives that the California Climate Investments organization has implemented include "place[ing] affordable housing adjacent to transit and job centers," developing composting programs for members of environmental justice communities and outfitting disadvantaged neighborhoods with protection against the region's extreme weather events.

"CARB also began making determinations about the direct environmental benefits of off-sets. Starting in 2021, no more than half of the offset credits that an entity surrenders for compliance can come from projects that do not provide direct environmental benefits in the state"

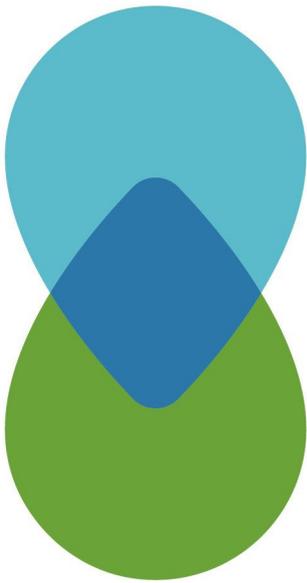
(Bill AB-398)



What have other states done to address environmental justice in their cap-and-trade programs?

Washington

Washington's proposed cap-and-trade program seeks to actively address environmental justice concerns. To achieve this, the state can intervene if the statewide cap is not reducing emissions in vulnerable communities. Lauren McCloy, senior energy policy adviser, states "If [the Washington State Department of Ecology] sees an entity is not reducing emissions or is increasing emissions, particularly in a community that's been highly impacted by health disparities, they would be able to impose an entity-specific emissions cap" (12/23/21 PEW, Lauren McCloy). In addition, all investments into projects from the program's revenue would require an analysis of its impact on environmental justice communities (Brown 2020).



Clean & Prosperous Washington

Massachusetts

In Massachusetts, officials created a cap-and-trade program that deals with the energy sector, to work alongside RGGI goals. This program has been in place since 2018 and focuses on limiting the occurrences of offsets being over prescribed and thus creating higher levels of air pollution overall rather than the opposite (Sanders 2018).





Takeaways for Pennsylvania

Lesson One: Center Environmental Justice in Pennsylvania's Cap-and-Trade Bill

The spread of pollutants under cap-and-trade programs is usually concentrated in communities of color, as well as less wealthy neighborhoods. As a result, non-economic factors—namely population type and density—should be taken into consideration when deciding on emissions regulations under cap-and-trade.

“Some economists and environmental justice advocates argue that efficient climate regulation requires deeper GHG reductions in locations where the health benefits of co-pollutant reductions are likely to be greatest, and that this objective cannot be accomplished with the geographically unrestricted trading characteristic of cap-and-trade in which all GHG reductions are treated equally regardless of where they occur”

(Cushing et al. 2016)

Offsets and EJ communities:

Environmental justice concerns are not often considered with the implementation of cap-and-trade. California allows businesses to have the option to buy offsets to stay within the emission target goals. Offsets allow plants to invest in projects that aid in environmental initiatives, but they can provide false security. More than half of California plants increased their emissions

“We don't care if they have a project for tree planting elsewhere,” she says. “When are they going to reduce pollution here?”

(2/24/2017 NPR, Alicia Rivera)

“Facilities owned by companies that used offsets emitted significantly higher levels of GHGs than those owned by companies that did not use offsets”

(Cushing et al. 2016)

Lesson Two: EJ Community Representation and Involvement

In California, many vulnerable residents are unaware of what cap-and-trade is and how it impacts their health (Rosen 2020). This lack of EJ community engagement has led some residents to feel that their needs were ignored or sidelined during the creation and implementation of cap and trade. Annie Beaman, Executive Director of Our Children's Earth Foundation, shared that EJ groups are "oftentimes...left out of those processes, [and] these programs are developed largely behind closed doors, and the communities don't even know anything about it" (3/30/21 Interview, Annie Beaman). This lack of transparency and engagement can create a lack of trust in cap-and-trade, as well as lead to the program not addressing EJ communities' needs.

Pennsylvania should consider including EJ community members on RGGI proceeds decision-making entities. Creating these positions will ensure EJ communities' voices are heard, addressed, and centered. Throughout the process of creating the legislation and implementing RGGI, EJ residents' voices need to be valued and prioritized. As residents of the most heavily impacted and vulnerable communities, they have a particular understanding of what their communities' needs are and how cap-and-trade can best benefit them.

"Bringing representatives from [EJ] groups in as decision makers and as core to any policy development process from the beginning...And that sometimes does mean creating specific stakeholder processes or even positions within the administrative board that oversees the programs... a community representative elected or appointed based on their experience in EJ issues"

(3/30/21 Interview, Annie Beaman)



Lesson Three: Engage in Meaningful Community Outreach

Along with involving EJ community members in the legislative process, continual community engagement is necessary to educate EJ community members in Pennsylvania about RGGI. Residents have the right to understand what cap-and-trade is, how it will potentially impact their communities' health, and how they can make their voices heard. In addition, accessibility of messaging must be prioritized. Messaging should be multilingual and in various formats for different age groups. A successful educational outreach program will empower EJ communities and ensure that they are aware of how cap-and-trade will affect them.

“If Pennsylvania is going to get involved in a cap-and-trade program, I think it’s really important to be really clear in messaging and meet folks where they are...Use plain language. Assume people don’t know what it is, but want to, and assume that they’ll care more about what it is if they know how it impacts them either positively or negatively.”

(4/8/2021 Interview, Chief Operating Officer at a nonprofit in California)

Lesson Four: Prioritize Accountability

Building accountability measures is imperative to prevent environmental justice issues. The accounting of emissions from plants must be strictly monitored, or pollution can go unaccounted for. In California, hundreds of tons of pollution were not accounted for from an industry in Southern California (3/30/21 Interview, Annie Beaman). Proactively preventing loopholes, building in accountability measures, and building a tight program will prevent pollution in EJ communities going unaccounted for or unregulated in Pennsylvania.

Concluding Lessons for Pennsylvania

- All Pennsylvanians deserve to experience the health benefits of reduced greenhouse gas emissions. RGGI is an opportunity to advance both emission reductions and environmental equity in tandem. Learning from California’s environmental justice challenges, Pennsylvania should:
- Center environmental justice in RGGI implementation
- Create strong accountability measures to ensure all pollution is strictly monitored
- Create leadership roles for Environmental justice community members on RGGI decision-making entities
- Implement a strong community outreach program
- The following section includes key components to achieve meaningful community engagement



Engaging: Best Practices for Meaningful Community Engagement

For the RGGI to work towards environmental justice and contribute to healthy communities, it must center the voices and concerns of residents. Community engagement is central to this process (Prno et al. 2021). Community engagement efforts should be integrated into every stage of RGGI's planning and implementation to achieve environmental justice (Pastor et al. 2012).

What is community engagement?

Community engagement is a process where decision makers:

- Engage with affected communities in the planning process of a new project
- Invest in resources so that residents can participate
- Seek decisions that benefit affected communities

What is meaningful community engagement?

Meaningful community engagement requires more than simply connecting with communities. It ensures that residents are:

- ✓ **Informed:** Have information about projects and how they impact their lives
- ✓ **Vocal:** Can easily voice their questions, concerns, and ideas
- ✓ **Heard:** Feel that their feedback is reflected in changes made
- ✓ **Accountable:** Know that decision makers are held accountable to their promises

Meaningful community engagement

Meaningful community engagement involves more than informing communities of a plan and gaining their approval. It moves beyond involvement “to ensure that the benefits and burdens of new plans and projects are equally distributed” and that “those involved... should get people involved early, provide them with resources so they can fully participate, and ensure that outcomes reflect participation and local needs” (Pastor et al. 2012). Truly meaningful community engagement works to achieve environmental justice (Prno et al. 2021; Sprague et al. 2020).

Diverse practices and models have been used to build meaningful community engagement. This section details what these practices are, common mistakes to avoid, and how to engage as many residents as possible. It will also feature insights from interviews with community engagement practitioners and researchers. Interviewees noted that decision makers must listen to, respect, and address resident’s opinions, especially in affected communities.

“Regions can achieve [environmental justice] when everyone enjoys equal access to decision-making processes and can engage meaningfully in decisions regarding the distribution of both benefits and burdens of new plans and projects”

(Pastor et al. 2012)



Best Practices

Making Community Engagement Meaningful

The first step towards meaningful community engagement is reaching out to affected communities. This can be accomplished through collaboration with local organizations and connectors who know the community well and are trusted by their people. These community connectors or gatekeepers are a powerful resource for connecting with communities and learning what strategies will best meet their needs.

Connecting with communities

- Gatekeepers “are individuals who can facilitate access within a local setting because they are connected, influential, or highly informed about the local situation” (Kanazawa 2018)
- Decision makers should identify and build relationships with gatekeepers to better understand communities



“We do try to build relationships with community connectors... to give us the lay of the land letting us know who’s active and who’s not... In recent years, we have been able to get grant funding so that we can give out stipends to local connectors”

(3/15/21 Interview, Julie Vastine)

“I think it's important to have advocates who have the concern (and) can be the voices of residents who... don’t know how to speak up or they don’t know what to do”

(3/17/21 Interview, Germaine Patterson)

There are several practices decision makers should center in their engagement plans. The following section details these key best practices for meaningful community engagement:

- ✓ Create inclusive spaces
- ✓ Build Trust
- ✓ Listen Actively

Create Inclusive Spaces

Building equitable and inclusive organizations, “requires more than tokenism, it cannot be achieved without diversity at the planning table, in staffing, and in coordination. It may delay achievement of other important goals, it will require discussion, hard work, patience, and advance planning” (Jemez Principles for Democratic Organizing 1996). This also means recognizing the labor and respecting the boundaries of those working in their communities. A coordinator at a nonprofit said of the importance of inclusivity in organizations, “hold space reliably for people to share what they want when they feel comfortable” (3/31/21 Interview). Whether building inclusive leadership or participation in community engagement efforts, more inclusive community engagement will result in more accessible processes and equitable outcomes.

Inclusive spaces in practice

“Do outreach and more outreach and more outreach to know what the community needs... Really get the right kind of voices and people at the table...You need to (engage with) people of all ages and backgrounds”

(4/8/21 Interview, COO at California nonprofit)

Practice “gratitude for what [community members] share. What they're able to share and how they're able to show up anytime is something to be celebrated.”

(3/31/21 Interview, Coordinator at a nonprofit)

Creating inclusive spaces also requires that decision makers examine the inclusivity within their own organizations. Building equitable and inclusive organizations, “requires more than tokenism, it cannot be achieved without diversity at the planning table, in staffing, and in coordination. It may delay achievement of other important goals, it will require discussion, hard work, patience, and advance planning” (Jemez Principles for Democratic Organizing). This also means recognizing the labor and respecting the boundaries of those working in their communities. A coordinator at a nonprofit said of the importance of inclusivity in organizations, “hold space reliably for people to share what they want when they feel comfortable” (3/31/21 Interview). Whether building inclusive leadership or participation in community engagement efforts, more inclusive community engagement will result in more accessible processes and equitable outcomes.

“Make sure that it doesn't feel like the work that we're doing is like happening to the community but happening with the community.”

(3/31/21 Interview, Coordinator at a nonprofit)

Build Trust

Trust is established over time as decision makers make a clear effort to be transparent about the plan, maintain communication with residents, and are held accountable for their actions. Creating transparency by sharing and making information about initiatives accessible to all is a foundation to build trust with communities (Dei 2005; Lakes et al. 2014; Prno et al. 2021). This open communication shows communities that decision makers are sincere in their efforts to collaborate with them in bettering their community and are taking responsibility for their actions, which helps enhance and sustain trust from communities (Dei 2005; Lakes et

Building trust between communities and decision makers improves the level of resident participation and quality of initiative outcomes. Feeling valued and respected encourages residents to get involved in engagement (Lakes et al. 2014; Prno et al. 2021). More participants produce more input, which in turn helps decision makers gain a better understanding of a community and its needs and develop initiatives that contribute to the well-being of communities.

“One of the key things you have to do when you are working with community is to have an open and consistent and reliable two-way communication, so that if someone has a problem, they feel like they can bring that up with you and address it immediately”

(3/15/21 Interview, Julie Vastine)

“To me it [effective community engagement] would be... really showing care, and being consistent, and being true to your word.”

(3/17/21 Interview, Germaine Patterson)

Decision makers must be “transparent in their communication” and “held responsible for their actions” to “rebuild trust with communities”

(Dei 2005)

Building trust in practice

- ✓ Respectfully explain the limitations of your organization or agency and, “direct people (to) where they should go if they want to see that change happen”
(3/11/21 Interview, Veronica Coptis)
- ✓ “When someone gives you constructive feedback, you have got to show that you have heard them and that you take that feedback seriously and make changes”
(3/15/21 Interview, Julie Vastine)

Listening Actively

Listening is not an idealistic virtue of policy initiatives; it is key to a healthy democracy. Listening to communities may seem like an intuitive step towards meaningful community engagement but doing so effectively isn't always easy. Poor attempts at listening to

communities can erode trust and entrench opposition to initiatives. Effective listening practices, can, “enhance legitimacy claims, increase levels of trust, help deal with disagreements, improve representation, and refine deliberation” between decision makers and the public (Dobson 2014)

As the Center for Creative Leadership explains, “active listening refers to your willingness and ability to hear and understand” (Active Listening 2019). Decision makers seeking to meaningfully engage communities need to center the concerns and desires of communities without a pre-determined agenda. Genuine listening may directly challenge the plans and goals of decision makers. Understanding and addressing that feedback is what gives meaningful community engagement its meaning.

“If you really want true community engagement, you're like not giving a solution to communities, you're helping the community facilitate their own solution.”

(3/11/21 Interview, Veronica Coptis)



Active listening in practice

Active listening refers to your willingness and ability to hear and understand...it involves six skills:

✓ Paying attention, suspending judgment, reflecting, clarifying, summarizing, and sharing (Center for Creative Leadership 2019)

“Don't go into a meeting with your agenda first, you always have to go into those first meetings ready to listen and to learn from the community about who they are, what their values are, what their goals and objectives are, and you have to wait for the appropriate time to then share your goals and objectives”

(3/15/21 Interview, Julie Vastine)

Obstacles to Engagement and Suggested Solution

Making Community Engagement Accessible

- The distinct social backgrounds and life circumstances of individuals necessitate diverse methods to engage community so that decision makers can reach everyone affected by plans. This section summarizes common barriers in the engagement process and suggests solutions to address them. These challenges include:
- Inaccessible Outreach
- Lack of Trust in Decision Makers
- Unsustainable Initiatives

Inaccessible Outreach

Traditional community meetings at specific places and times that distribute overly technical information do not support meaningful community engagement. These strategies restrain opportunities for all residents to participate. They further marginalize non-English speakers, people of low socio-economic status, and people with disabilities. These residents are then deemed 'hard-to-reach,' further increasing the gap between communities and decision makers (Flanagan and Hancock 2010). Decision makers are encouraged to be flexible in methods and languages when communicating and exchanging information with communities. These strategies increase the chance for information to reach more residents, ultimately resulting in more popular and effective programs.

Defining 'Hard to reach' residents

'Hard to reach' populations are residents who either resist participating in outreach or cannot access traditional engagement methods due to their social conditions or the limitations of the engagement program (Flanagan and Hancock 2010). This group has experienced burdens and receiving benefits of plans unequally, one of the key barriers to achieving environmental justice (Pastor et al. 2012). Being able to engage with 'hard to reach' residents contribute to the overall meaning of community engagement and is key in addressing environmental injustices.



Obstacles to Accessibility and Suggested Solutions

Obstacle		Suggestion
Inaccessible meeting locations and times of traditional open meeting	→	<ul style="list-style-type: none"> • Hold in-person meetings after working hours and give adequate notice (more than a month in advance) • Hold virtual meetings after working hours with opportunities to call in and make slides and recordings accessible afterwards whenever possible • Make gatekeepers aware of meetings so they can share with their communities • Meet residents where they are
Overly technical information	→	<ul style="list-style-type: none"> • Use plain language and analogies to demonstrate how policies will impact the daily lives of those affected • Provide contact information of people communities can direct questions or concerns to
Information is only available in spoken English	→	<ul style="list-style-type: none"> • Provide translated materials • Have live translators and sign language interpreters at both in-person and virtual meetings whenever possible

“You need to speak to people in a way that they understand and show them what some of the implications are even though they can’t feel them, they can’t touch them.”

(3/25/21 Interview, Jeanne Simonelli)

“[In] our first ever bilingual webinar at DEP for Esperanza,... one of our Office of Environmental Justice Staff, is fluent in Spanish, so we went through each slide, I said it in English, and then John would say it in Spanish after me. And it was a great experience, and we recorded it, and it is on our climate action plan webpage so that folks can still view.”

(3/17/21 Interview, Heidi Kunka)

Benefits and Barriers of Virtual Engagement

The COVID-19 pandemic has forced many community engagement efforts online. While this has presented a barrier for those with limited access and understanding of technology, it has also increased the flexibility and accessibility of community engagement for others.

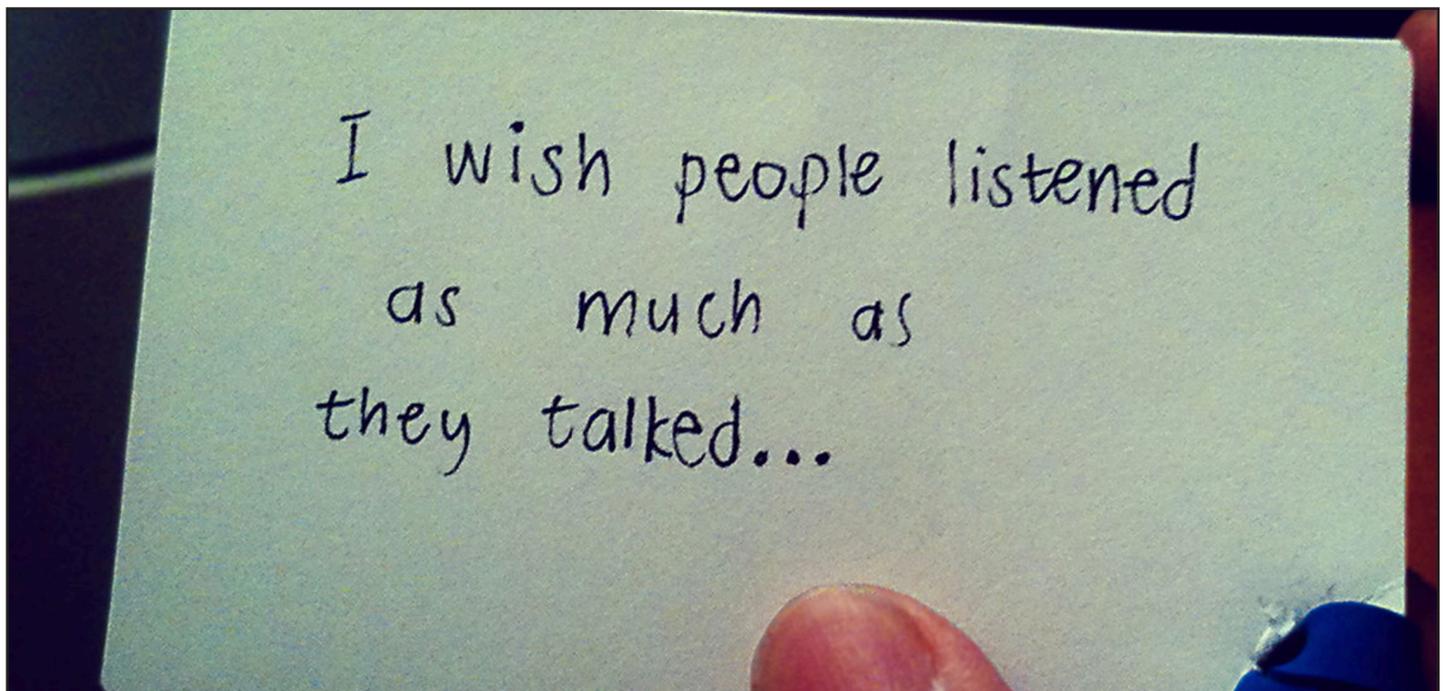
Virtual engagement can decrease obstacles such as:

- Finding transportation
- Finding childcare
- Mobility impairments
- Mental health barriers

In-person meetings and efforts are important to engage ‘hard-to-reach’ groups and understand the challenges of communities on the ground (Pastor and Morello-Frosch 2014). It would be wise, however, for decision makers to continue virtual engagement efforts alongside more traditional meetings beyond the pandemic.

“Too often people don’t know how or what to comment on or can’t attend a meeting... Thank you for providing an online option.” (3/22/21, Anonymous respondent in DEP Environmental Justice Policy Feedback Session)

“Almost all the meetings are going virtual. We’re actually seeing more public participation by far than we were seeing in the past.” (3/26/21 Interview, Rob Altenburg)



Lack of Trust in Decision Makers

Establishing trust is one of the key practices outlined in this section. Building trust may not come quickly or easily, especially when communities lack trust in the decision makers. As outlined earlier, this lack of trust can stem from failure to share information, maintain communication with communities, or show accountability to their promises on the part of decision makers.

“There’s a lack of trust that a lot of impacted communities have, particularly with the DEP, to take their input and their consideration honestly into implementation”

(3/11/21 Interview, Veronica Coptis)

Often, communities that lack trust in decision makers have also experienced environmental injustices. Such experience makes them become rightly mistrustful of future organizations seeking their input. They may refuse to engage with traditional outreach efforts, leading decision makers to consider them as ‘hard-to-reach’ and further marginalizing vulnerable groups (Flanagan and Hancock 2010). If decision makers do not make effort to learn why some communities are deemed ‘hard-to-reach,’ this underlying issue of trust may never be resolved.

Unsustainable Initiatives

One common issue with community engagement initiatives is that they are short-lived and unsustainable. For policies like RGGI that will continue for maybe decades to come, it is crucial that community engagement is long-term and active. The expectation is not that the DEP will perfectly allocate resources from the start but will participate in active engagement. Central to this is adaptive management which includes, “mechanisms to study the impacts and adjust for effects that are unexpected or undesirable” (Story 2021).

“Having a commitment to longevity is a commitment to sustainability”

(3/25/21 Interview, Jeanne Simonelli)

“It’s good in general to get people to turn out and let policymakers know how they feel about well makings. Very often though, the community concerns aren’t the ones that carry the day”

(3/26/21 Interview, Rob Altenburg)

Concluding Lessons for Pennsylvania

Meaningful community engagement is complex, time-intensive work. This section discussed the following methods for Pennsylvania decision makers to reflect the needs and concerns of impacted communities:

- Meaningful community engagement requires that plans reflect the feedback of affected communities
- Feedback should be sought in inclusive, welcoming ways that honor local expertise and build trust with communities
- Decision makers need to practice active listening and approach discussions without an agenda
- Common obstacles such as limited means of communication from decision makers, lack of trust from the community, and unsustainable initiatives must be identified and addressed early in planning to ensure meaningful community engagement
- The following section applies lessons for community engagement to air pollution reduction efforts

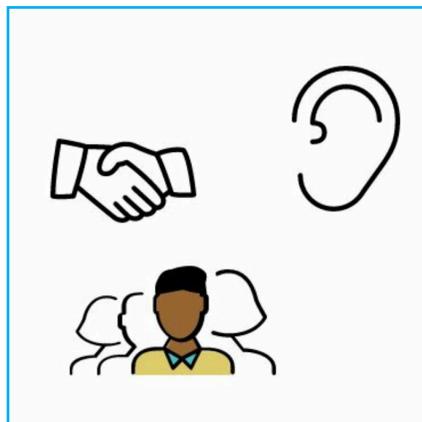
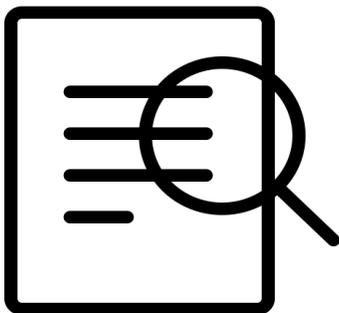




Innovating: Effective Ways to Engage Communities in Reducing Air Pollution

The lessons from the previous section are relevant to air pollution communities. The opinions and knowledge of affected residents are valuable and should dictate how air pollution mitigation is carried out. Particular attention should be made to engage environmental justice communities, which are frequently the most exposed to negative air pollution health effects such as respiratory and cardiovascular ailments (Pastor et al. 2012). The following case studies profile innovative examples of how Pennsylvania could work to address air pollution problems in environmental justice areas. While each case is unique, the following common approaches are present in all:

- Prioritizing a community-centered approach to reducing air pollution
- Working with community members when making decisions



Effective Community Air Pollution Reduction Engagement

Effective air pollution reduction is defined by the success of actions taken to reduce air pollution in a community while engaging the community members. This engagement ensures that air pollution reduction reflects community needs and preferences. Overall, the process of decision-making is also improved when the public is involved (Prno et al. 2021).

It is encouraged to have, “outreach specialists that work in different parts of the state that are responsible for really leading community engagement in their areas...develop contacts with community members and [maintain] encouragement, education, [and] whatever is necessary to help community members engage on the issues that really they think are important”

(3/26/21 Interview, Rob Altenburg)



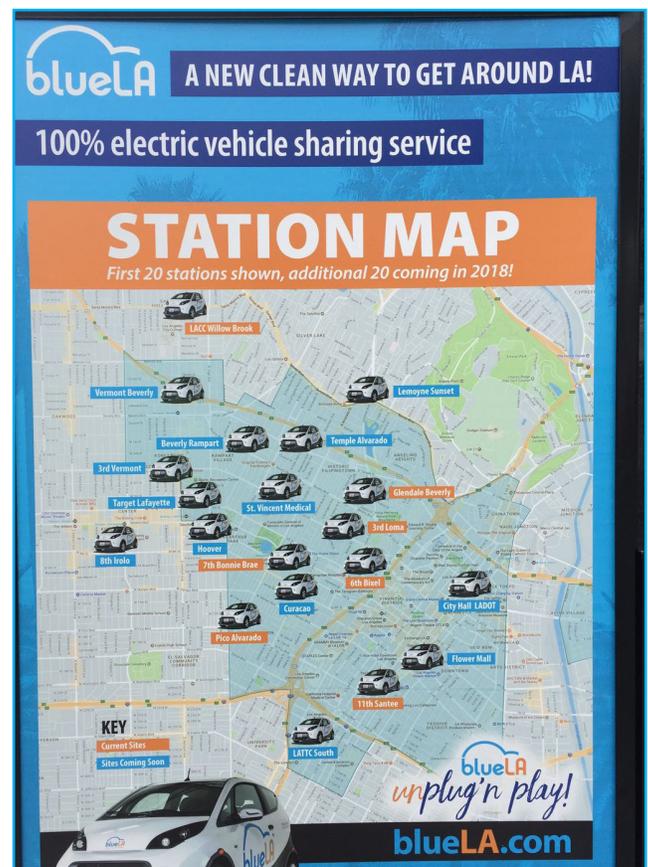
Case Study #1: Electric Vehicle Carshare for Low-Income Residents

What is the program? The city of Los Angeles launched an electric vehicle (EV) carsharing pilot project in 2016. The program provides EV carsharing opportunities for low-income residents while reducing GHG emissions. BlueLA operates 100 shared battery electric vehicles (BEVs) in a one-way carsharing model in central LA. Operated by French battery company, Blue Solutions, residents can check out cars at self-service kiosks. There is a monthly membership fee of \$1 for low-income residents, with a 15 cent per mile fee. The program provides low-income residents the opportunity to participate in carpooling, recreation, dropping children off at school, and driving to interviews (Shared Use Mobility Center 2019).

Costs: The EV carsharing pilot project was funded through a grant from the California Air Resources Board (CARB). The project is also funded out of the Greenhouse Gas Reduction Fund with proceeds from the state's cap-and-trade program. Project funding includes a combination of city and state commitments (\$2.8 million) and private investment (\$10 million) for BlueLA to install and service cars during the five-year pilot.

Partners: The development of this project was supported by a lead technical partner, the Shared Use Mobility Center, and members of the Charge Coalition (Coalition for Clean Air, the Greenlining Institute, Environment California, and the Natural Resources Defense Council). Partners have engaged community stakeholders, residents, and businesses throughout the process.

Considerations: The goal of the BlueLA project is to recruit at least 7,000 new users within three years of the project launch. These new users are expected to sell or avoid the purchase of 1,000 private vehicles, reducing an estimated 2,150 tons of GHGs annually. Los Angeles has a car-heavy culture, which contributes to the heavy smog and health impacts (Shared Use Mobility Center 2019).



Concluding lessons: While expensive, electric vehicle car-sharing for low-income communities would reduce air pollution and enhance affordable transportation options for Pennsylvanians. This approach would address some of the intersectional development challenges raised by Pennsylvania residents.

“The BlueLA EV Carshare program has helped protect Angelenos from harmful pollutants, build healthier communities across our city, and bring new transportation options to neighborhoods on the front lines of climate change”

(Shared Use Mobility Center 2021, LA Mayor Eric Garcetti)

Case study #2: Imperial County Air Monitoring Project

What is the program? The Imperial County Air Monitoring Project takes place in California, where there are historically high levels of air pollution. The project installs air monitors and trains the community to monitor them. Community members are involved in designing the project, siting, and maintaining the monitors, gathering data, analyzing results, and communicating results (NIEHS 2020). The air pollution monitors help residents understand which areas of their community are more dangerous in terms of air pollution, so they can support policies and actions that promote healthy air. Residents help to decide where the monitors are installed and receive training. Paul English, the director of this program, states that involving community members helps engage them in troubleshooting issues with monitors and makes it easier to get permission for where to place them (4/5/21 Interview, Paul English) Results from monitors are available online at any time, so residents can regularly monitor levels in their area

Costs: Government-owned sensors are provided to the community in partnership with other organizations to help analyze data and educate residents (4/5/21 Interview, Paul English).

Partners: Partners of the project include Comité Civico del Valle and the California Environmental Health Tracking Program, which falls under the CA Department of Public Health. They help install the monitors and provide tracking information for the air quality levels.

“A Community Steering Committee of 15 community members meets regularly with the project team to guide project activities. Community participants bring valuable knowledge, access, relationships, capacity, and resources to the project. They also offer input on disseminating data in a way that is accessible, understandable, useful, and accurate. In addition to building on the trust and relationships established during prior projects, the partnership encompasses a commitment to community engagement and scientific rigor while ensuring shared decision-making responsibilities”

(NIEHS 2021)



Considerations: While improving awareness of high concentrations of air pollutants is an important step to help residents become more involved in fixing air quality issues in their community, it does not directly reduce pollution. Meaningful air pollution reduction requires regulation

Concluding lessons: This initiative helps promote community involvement by allowing citizens to decide where monitors are placed, while also learning how to repair and monitor them. Air quality sensors are an effective way to use money allocated for air quality initiatives to help educate and empower the community to improve public health.

“Considerations to keep in mind in the implementation of air monitoring technology are the price of the product and how affordable they will be for the community. Along with this, it is worth noting that when higher end, often more costly, instruments are used, generally it is assumed that there is more reliable data being collected. A way to help solve this problem is for communities to work alongside air districts to set up community air monitoring. Although there are benefits to this, air districts might follow different processes and could mistrust the accuracy of community data”

(Chang 2021).

Using Data to Enforce Air Pollution Regulations

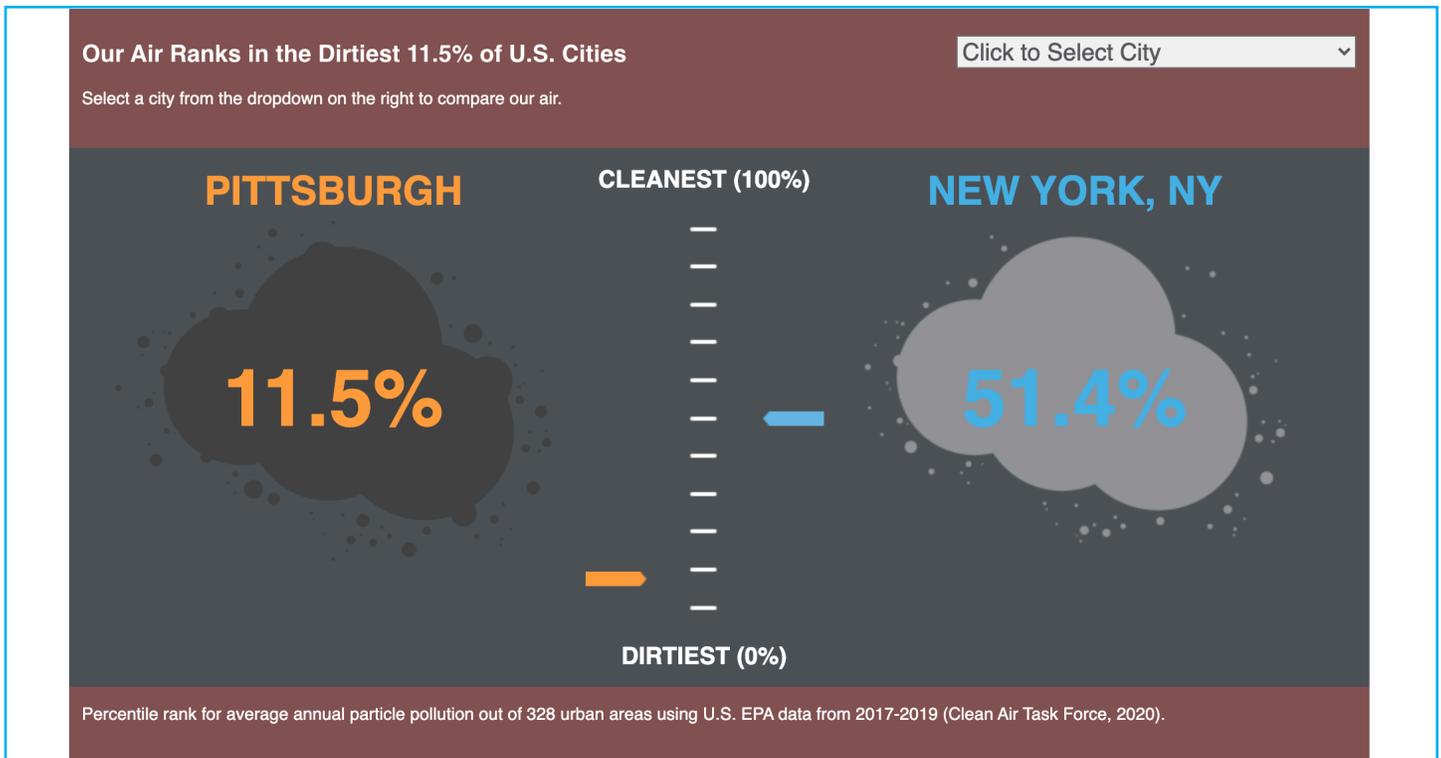
Matt Mehalik, of the Breathe Project, explains a major source of air pollution in Allegheny County, U.S. Steel’s Clairton Coke Works, “it emits hydrogen sulfide, it emits sulfur dioxide, and it is one of the main reasons why our county is not in compliance with the Clean Air Act and hasn’t been” (1/14/20 Sears, Matt Mehalik). The Breathe Project works with community members to provide air pollution monitors, similar to those described in the Imperial County case study. The Breathe Project also has an interactive online tool called the Pennsylvania Breathe Meter, a dirty air calculator. Collectively, these resources empower residents to gain knowledge about air pollution and to hold polluters accountable if they are not in compliance with air pollution regulations. Clairton resident Germaine Patterson describes the monitors:

“they’ll provide a Dylos (air quality monitor), which will read the PM 2.5 inside your home and outside your home so that residents can see what it looks like when their air quality changes” (3/17/21 Interview, Germaine Patterson)

Pennsylvania Cities with Dirty Air

Pittsburgh ranks in the dirtiest 11.5% of US cities

Philadelphia and surrounding areas rank 26% in the dirtiest US cities (Breathe Project 2021)



Case Study #3: Types Community Groups/Action(Gonzales 2017)

What is the program? West Harlem, NY would have experienced increased air pollution if officials approved a wastewater treatment plant and a bus depot (Johnson and Johnson 2012). Community members, including resident Peggy Shepard (co-founder and executive director of WE ACT for Environmental Justice), stopped the implementation of the bus station completely, eliminating extra diesel exhaust from entering the community. Though she was unable to stop the wastewater plant from being built, Shepard successfully persuaded the city to redesign the plant and build it underground. The plant and its toxins were out of sight of the community, and a new park was built on top of the site, creating a more pleasant community recreation site (3/25/2021 Interview, Michael Heiman).

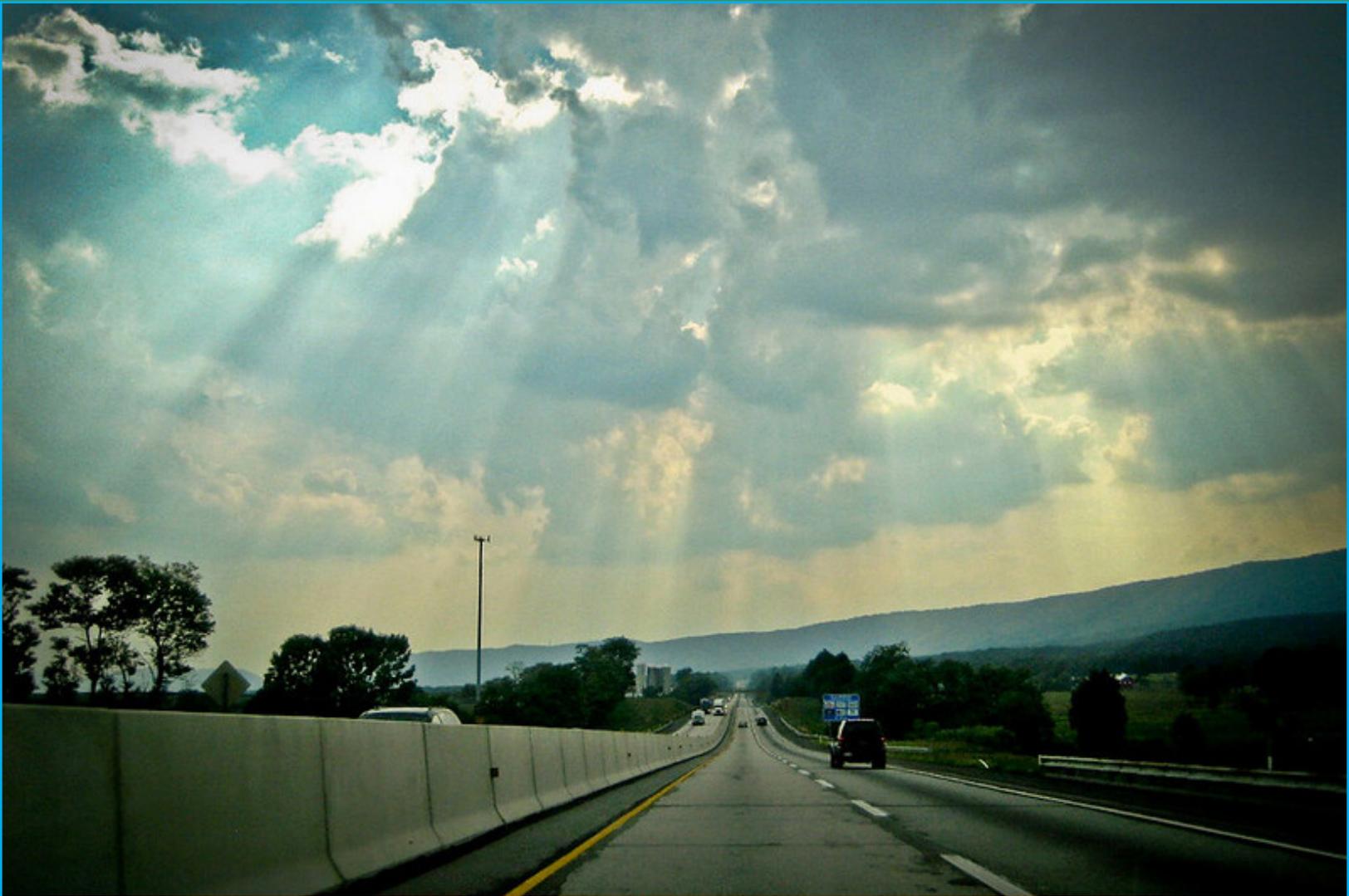
Costs: Shepard and her community worked with the Transit Authority and wastewater plant to craft projects to safeguard the health and safety of West Harlem residents. Residents dedicated significant personal time to achieve these changes.

Partners: Residents negotiated the projects with the New York City government officials and the New York City Metropolitan Transit Authority.

Considerations: Often, facilities like a wastewater treatment plant are necessary for a densely populated community. This example demonstrates an innovative alternative

Concluding lessons: Pennsylvania could use this as an example of one way to direct funding from RGGI. Greenspace infrastructure, such as the park, help reduce air pollution.





Concluding Lessons for Pennsylvania

Engagement with environmental justice and other disadvantaged communities in Pennsylvania is extremely important when finding solutions to air pollution problems. Key approaches to ensuring air benefits for all include:

- Proceeds from RGGI should be directed towards air pollution reduction initiatives such as electric vehicle carshares, community air monitoring projects, and support for community groups
- Significant attention should be paid towards the location of air pollution reduction initiatives
- Community involvement should be prioritized through regular outreach, active engagement, and should be incorporated into decision-making processes
- Environmental justice and other disadvantaged communities should be directly represented on bodies making decisions about air pollution reduction projects



Concluding Recommendations: Engaging with Communities

“Diversity and the appreciation of differences are inextricably tied to social justice and the unequal ways that power and privilege construct differently in our society”

(Bell 2007)

Given the range of air pollution sources and different impacted geographies in Pennsylvania, this research recommends a community–centric approach to RGGI. This path would respond to and reflect the needs of environmental justice areas and other disadvantaged communities, acknowledging past and present inequalities. Below are suggestions for how to foresee potential environmental injustices, to engage community members, and to ensure air benefits for all Pennsylvanians.

Listening

Diverse air pollution concerns and geographies

- Although sources of air pollutions vary between regions, human health, with a specific emphasis on children's vulnerability, is a central concern
- Air pollution solutions must respond to local preferences in environmental justice areas and other disadvantaged areas
- Air pollution is not the only concern in disproportionately impacted communities. Government programs should address other intersectional development concerns in air pollution impacted communities, including food poverty, energy insecurity, and lack of employment opportunities

Learning

Foresee environmental injustices and act

- Research and analyze the communities that are most susceptible to environmental injustices before RGGI is implemented
- Invest in and encourage renewable energy projects, which will reduce many co-pollutants associated with electricity generation

Engaging

Representation on decision-making bodies

- Community members from the highest air polluted environmental justice and other disadvantaged areas must have direct representation on the RGGI proceeds decision-making body
- The community representatives should:
 - be recommended to serve by the DEP Environmental Justice Advisory Board and/ or by application
 - receive an honorarium for their work

Partner with community groups

- DEP should partner with community groups to:
 - Expand outreach to marginalized communities
 - host public forums and promote dialogue
 - provide training for paid community air monitors

Innovating

Provide communities with air pollution reduction options and space to initiate their own solutions

- Given the diversity of air pollution sources and distinct community needs, there are often multiple available approaches to improve air quality
- Decisions about air pollution reductions should be made in consultation with environmental justice and other disadvantaged communities

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