Expanding Beyond Coal
Data Collection, Economic Revitalization and Workforce Development Strategies in Communities Affected by Coal Plant Closures

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Introduction

A quick Google search of the Sierra Club will bring up a number of articles reporting on the organization’s efforts to oppose building new coal power plants and using advocacy and legal measures to challenge existing facilities. These efforts are undoubtedly important for the public health of millions of Americans, and for the future sustainability of the planet. However, these actions also feed into the narrative of the Club’s opponents that the result of their efforts is layoffs and potentially higher energy costs.

The Sierra Club approached us to conduct an analysis and, “devise alternatives and complementary measures for which the Sierra Club can advocate at the federal and state level that would help buffer and alleviate negative economic impacts and foster growth and job creation in the clean energy sector.” The purpose of this report is to help counter that narrative and suggest paths that the organization can take to expand efforts beyond battling coal, to help remedy the economic effects of coal plant closures, as well as transition communities’ workforces towards sustainable green jobs.

Through our project we have expanded the scope of these goals in two ways. In the first section, we have compiled a broad database of key variables, which can be critical in supporting the Sierra Club’s work in targeting plants for closure, communicating the dangerous public health consequences from outdated polluting coal plants, and applying for grants and government resources. In this section we define each of the variables describe their importance to the organization’s work. We also conclude by recommending investing resources for developing a targeting tool to use the data for determining the best plants to prioritize efforts towards.

Additionally, in the second section we urge the Sierra Club to consider additional routes to helping transition communities affected by plant closures to include a multi-faceted approach. While green workforce development is an essential strategy for the organization, it should not rule out advocating for jobs that fall outside of the green jobs umbrella. Furthermore, beyond training future workers, the Sierra Club should also channel resources towards repurposing plants for alternative community needs, and other community revitalization efforts. This section utilizes case studies, interviews with experts in the field, as well as best practices from organizations to accomplish these objectives.

In the final section, we use the city of Bridgeport to demonstrate how the data can be used for to bolster Sierra Club’s work. We also provide an exhaustive list of information on the government policies, community partners for workforce development and community revitalization, along with an analysis of current efforts underway from organizations to close the Bridgeport Harbor Power Station.

Through utilizing the information that the dataset and targeting tool provide, the strategies outlined to comprehensively address the problems affecting job growth in communities with plant closures, and the resources in the Bridgeport analysis, we are confident that the Sierra Club will be well equipped to not only help the country move beyond coal, but also help communities create an environment for long-term, sustainable and healthy jobs.
Data Analysis and Targeting Tool

The Sierra Club's Beyond Coal campaign and our project team have targeted a list of 19 coal-fired power plants for an analysis of their potential conversion or retirement. We have chosen a range of variables, each uniquely important, in order to help better inform and guide the campaign of what plant, socioeconomic, health, and political conditions exist in the communities where these plants are located. These variables are not only applicable to the particular plants we have found data for, but can be extrapolated for any plant where the data is available.

The purpose of such a comparison is for Beyond Coal to be able to prioritize its efforts objectively and strategically. Our work is just scratching the surface: a more detailed microeconomic analysis must be done to fully understand the case-by-case conditions of plant closures. Local labor markets, real estate values, electricity market dynamics, and other variables (including pending Clean Air Act regulations) should be considered in further work.

The raw data can be used one of two ways, the first of which deals with transition for the communities of plants targeted for closure. By combining the best practices and case studies with the data, while using the characteristics of communities, their political make-up, and the renewable resource potential of states, communities can economically transition away from a local economy based on coal.

The second use of the data is for targeting future plants for shutdown. At the bottom of this section is an explanation of a weighted, factor-based model that will allow the Sierra Club to target future plants for closure based on a number of factors, including pollution from the plants and their health impacts.

Background

We focused on 19 power plants, located within three points of a Northeastern triangle formed by Toledo, OH, Bridgeport, CT, and Asheville, NC, with most in Ohio, West Virginia, and Pennsylvania. Our criteria for selecting variables were driven by several factors. Some variables have the potential for political sensitivity, e.g., number of full-time employees at a given plant, local unemployment rates, and the presence of a renewable energy standard within the state. Others are related strictly on their emitted pollutants and how unhealthy they are, e.g., all the emissions data and health data. Finally, we were limited by the availability and lack of current data.

One of the important, but more challenging variables to acquire data for was the local labor market. The number of employees at these plants is often not disclosed until closing prompts local news coverage. Ultimately, this data and other local economic conditions (notably, real estate value and property tax revenue) are unreliable. An additional and important variable we suggest researching is the prevailing wage and local job market structure (the wages and availability of different types of jobs, for differently skilled workers).

The Tierney and Cleetus studies listed below have suggested that labor market dynamics,

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1 Or for locating the high priority cases based on factors deemed important by the Sierra Club.
state political conditions (e.g., whether the governor is a Democrat, what percentage of the jurisdiction is Republican, the presence and quality of a state renewable energy standard), and electrical market conditions (including tax rates, extent of deregulation, whether the utility is partially publicly-owned). These conclusions are useful for Beyond Coal, because it suggests that the decision-making process in plant closures is sensitive to these “external” factors that affect operating cost.

The campaign can use our data and suggested model as a stepping-off point to find additional data, carry the economic analysis a step further, and highlight the true costs of a given plant. In addition, using the qualitative team’s resource guide, the campaign can build relationships with labor groups, the public, and policy-makers, and indirectly influence the regulatory and market conditions, which impact these plants.

Data

The following sections will explain in detail what data was gathered for the 19 plants targeted for closure. Included in the explanations are why that specific characteristic is necessary in transitioning a community from a coal-based plant, or why it is necessary in the targeting of future plants. Further, there is an explanation of why that characteristic is considered important, where applicable.

Included in the attached data set is a full data dictionary of where all of the information is found. Because of this, we do not include an extensive list of sources in this document.

Plant Production and Pollution Characteristics

Perhaps one of the most important factors in determining which plants to shut down (coupled with health impacts of coal-burning), the size and pollution totals of plants are very important to examine. The data here was gathered at the plant level, using EIA and EPA data, for the years 2008 – 2010.

The plant and pollution characteristics are important to examine when determining which plants to shut down, but they are more important in targeting, as the information leads us to the largest, dirtiest plants. Although it is outside the scope of this project, this information can also be used to determine new ways to replace existing power on the grid.

Nameplate Capacity: The nameplate capacity of the plant, or the intended full load of each unit is the first variable examined. As mentioned before, this value is the total of all units at the plant. The nameplate capacity shows just how large each unit is at the plant, and thus how large of a plant we are dealing with.

Total NOX/SO2/Mercury Emissions: Total tons of nitrous oxide (NOX), sulfur dioxide (SO2) and mercury emitted from each plant are examined. NOX and SO2 are two of the major factors in the creation of acid rain, and these pollutants are created almost exclusively from the burning of coal. Mercury is also a dangerous chemical emitted from coal plants, and it has numerous human health effects such as cancer.

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2 It is well-known that larger, older plants create more pollution. It is also well-known that more pollution creates larger scale problems, so the focus is not on finding resources explaining this. It is the stance of this group as well as the Sierra Club that this fact is understood.
NOX/PM Yearly Emission Rate: The NOX and PM yearly emission rates are the rate for the entire year in pounds per million Btu for each pollutant. These rates are included for standardization of pollutants, to serve as a way of examining the effect of smaller plants as well as the total effect of the large ones.

NOX Controls: This binary variable indicates whether or not any units at the facility were without controls. This is important because the use of adequate controls (and continued use of them) is important for curbing NOX emissions at plants.

Health Impacts

Similar to the production and pollution impacts of the targeted coal-fired power plants, the negative effects on human health to those subjected are large components of any targeting effort. The data included are taken from a study performed by Abt Associates under contract from the Clean Air Task Force. The numbers presented (which are a county-wide total resulting from coal burning from 2000-2004) are: deaths, heart attacks, asthma attacks, hospital admissions, chronic BC, and asthma ER visits. Also included is the American Lung Association’s air quality grade for counties containing a coal plant.

Plant Characteristics

Specific plant characteristics regarding ownership status, size, and age are also included. The plant characteristics are important both in targeting and providing for potential transitions of communities. For example, older plants tend to be dirtier and less efficient than newer ones, so they should be targeted for closure. Further, plants with a large workforce, especially if they are unionized, must be examined closer in determining how best to move forward.

Oldest/Newest Unit: The oldest and newest units are included to show the age of the plant. Most of the plants targeted are in the northeast, and thus they are older. As mentioned previously, these older plants tend to be dirtier and less efficient.

Number of Employees/Unionized: The number of employees and whether or not they are unionized are important items to examine moving forward as well. Because the goal of the campaign is to completely shut down plants, the jobs will be lost. It is important for the campaign to be aware of the number of lost jobs, especially if it is possible to create an equal amount through the transitions.

CAA Enforcement Actions: A final plant specific characteristic researched is the number of Clean Air Act Enforcement Actions taken against the plant in the past five years; the actions can either be state or federal led. Research shows that plants coming under enforcement action tend to move toward compliance with the law, so plants with no formal actions recently should be targeted (Earnhart 2004).

Social/Demographic Characteristics

This section provides demographic information for communities surrounding targeted plants. Except where noted, all information is derived from the EPA’s online database, Enforcement & Compliance History

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3 This includes all controls, although EIA considers only SCRs and NSCRs to be adequate.
4 As mentioned previously, this data tends to be very hard to retrieve.
5 When looking at the data this is the case.
6 We use the same definition of enforcement action as Earnhart, including only formal actions, not NOVs or inspections (2004).
7 This is only the case if they exhibit high pollution totals.
Online (ECHO) and uses a 5 – mile radius for measurement. Compiling a profile of the community surrounding targeted plants is useful for many reasons. First, it provides analysts with an estimate of workforce preparation in the surrounding community and their ability to transition to the production of green energy.

Second, this profile allows analysts to identify communities that are disproportionately impacted from coal pollution and prioritize plant closures. Massey (2006) notes that “low-income communities and minority ethnic groups often bear the most severe consequences of environmental degradation and pollution.” The Environmental Law Institute (2002) notes “Countless independent studies have concluded that communities of color and low-income communities are disproportionately exposed to environmental harms and risks.”

Additionally, U.S. environmental laws designed to promote “environmental justice” are effective tools to force plant closures. The Environmental Law Institute (2002) states, “environmental laws contain various requirements and opportunities that can be applied to address cumulative impacts, sensitive populations, and other issues of concern to many communities of color and low-income communities.”

High School Education: The first variable is the percentage of residents in a selected area with a high school diploma or greater. For our case, this variable is intended to measure the ability of the local work force to successful adapt and transition to a green energy workforce.

Income: Next is percentage of households with income less than $25,000 per year. Lower income households are disproportionately affected by high rates of pollution (Earnhart 2004).

Residents below the Poverty Line: The percentage of people in the selected area that live below the poverty level is another variable used to identify higher risk communities.

Urban: The percentage of the 5-mile radius surrounding the targeted plant that is classified as urban shows us the denseness of a community; this shows how many people are affected by the pollutants (similar to density).

Minority Residents: The percentage of the population of the given area that is minority is the next socioeconomic indicator. For this model, the percentage of minority residents will help the campaign target plants that disproportionately affect lower income and minority residents. It also helps the campaign target plants based on existing laws and regulations designed to protect more vulnerable communities.

Percentage of Black Residents: The percentage of black residents provides the number of persons in surrounding 5-mile area who are African American. Again, this shows a potential EJ concern given the location of the plant.

Percentage of Children under the age of 5 years: Next is the number of Children (persons five years old or younger) in the surrounding area. This is another measure of higher risk communities and the potential for environmental justice.

Population Density: The number of persons per square mile in the area being profiled is the next variable examined. This is important because it shows how many people are subjected to a plants’ pollutants.

Unemployment Rate by County: The unemployment rate based on March 2012 preliminary numbers. Source: U.S.
Whether we like it or not, local, state, and national politics play a substantial role in our efforts to transition away from the consumption of dirty fossil fuels to clean and renewable energy. Local, state and national political composition is also important in determining the level of support available for the Sierra Club and their campaign to move beyond coal power plants.

Democratic Governor: We utilize a dummy variable indicating a Democratic governorship, with 1 indicating the governor is a Democrat and 0 if otherwise. Existing research and literature show a correlation between a Democratic governor and a community’s likelihood at adopting environmentally friendly policies (Becker 2004).

Representative in Congress: Although little research has been done on the relationship between political affiliation and support for clean energy initiatives, polls have consistently shown that Republicans favor fossil fuels over green energy. A recent poll by the Pew Research Center found that 59 percent of Republicans believe that the more important priority is to expand exploration and production of oil and other traditional energy sources.

In this model, the political makeup of the Congressional district surrounding a targeted plant can be used as a measure of potential community support for initiatives to phase out coal plants and replace them with renewable energy production.

Percent of Republican County Voters in 2008 Election: This is yet another measure of the area’s progressivity and the openness of local leaders to efforts to invest in and develop the clean energy sector in place of the existing coal plant (Earnhart 2004).

State Renewable Energy Policies

Under existing law, states maintain a larger share of authority for energy policy than the federal government, and in the absence of a comprehensive national strategy to increase the production of renewable energy sources, states have led the way in developing and implementing policies to encourage the production of renewable energy. This is important for the Beyond Coal Campaign in its efforts to help communities surrounding targeted coal plants transition to local production of renewable energy that can replace the economic impact following the closure of plants.

Unfortunately, existing research has shown mixed results regarding the relationship between state policies and the production of renewable energy. A majority of the information and research on this relationship was obtained from the National Renewable Energy Laboratory 2008 report “State of the States.”

This model utilizes a dummy variable indicating the existence of an RPS, public benefit fund, industry tax incentives or green power purchasing policies with 1 indicating the existence of each policy.

Renewable portfolio standard (RPS): RPS is one of the most popular state policies to increase the private production of renewable energy. An RPS mandates the provision of a certain level of renewable energy production in a state by a certain date, which, according to the increases investment certainty for project developers and infrastructure planners...
by creating a market for renewable energy within the jurisdiction.

Public Benefit Funds: According to Elizabeth (2011), public benefit funds “can be used to provide funding to narrow any gaps between the market price of electricity and the generating costs of clean energy technologies; address technical, regulatory, and market barriers for emerging technologies; stimulate the development of companion industries and infrastructure that are crucial to the success of clean energy; and promote consumers' awareness of clean energy.”

Industry Tax Incentives: To promote economic development and the creation of jobs, some states offer financial incentives to recruit the manufacturing and development of renewable energy systems and equipment; Elizabeth (2011) notes, “These incentives commonly take the form of tax credits, tax exemptions, and grants. Often times, the amount of the incentive depends on the amount of eligible equipment that a company manufactures.”

Most of these incentives apply to several renewable energy technologies, but a few states target specific technologies, such as wind or solar. These incentives are usually designed as temporary measures to support industries in their beginning years, and commonly include a sunset provision to ensure the industries become self-sufficient.

Green Power Purchasing and Aggregation Policies: Governments at the local, state and federal level can support renewable energy by buying electricity from renewable resources, or by buying renewable energy credits (RECs). Many state and local governments, as well as the federal government, have committed to buying green power to account for a certain percentage of their electricity consumption.

Potential Targeting Tool

Although it is beyond the scope of this analysis, we present a potential targeting tool for finding plants that are high priorities for future closure. Because 16 of the 19 plants analyzed are already slated to be closed, a tool of this type would need the data already gathered, but for different sites.

Once the data has been gathered (this can be done for the data set attached as a trial run), weights will need to be placed on each set of characteristics. For example, if the club feels that health impacts are the most serious threat coal-burning plants pose, a weight equivalent to how important that is compared to the other factors can be assigned.

Example weights:

Production/Pollution = 0.10
Health Impacts = 0.40
Plant Characteristics = 0.20
Demographics and Socioeconomics = 0.10
State Policies = 0.20

These category weights show that health impacts are the most important factor when targeting a plant for shutdown. In this weighting, they are four times as important as production and pollution, and twice as important as state policies.

Once weights have been assigned for the different categories, a thorough analysis of each individual variable will need to be performed. For example, nominal variables can be created for ranges of deaths caused by coal burning in each county (1 = 1-10 deaths, 2 = 11-35 deaths, 3 = 36-60 deaths, 4 = 60+ deaths). Again, at this point the analysis proves to be beyond the scope of the group’s expertise. The Sierra Club would be better suited to determine the breakdown for creation of nominal variables.
Finally, once category weights and nominal variables have been determined, a scoring model can be run to determine the plants with the highest priority for shutdown (based on the scoring determined by Sierra Club).

**Conclusion**

This data and the suggested variables we have produced provide a comprehensive set of tools to compare and prioritize plants in Beyond Coal campaigning efforts. Though only for a limited number of plants, these variables and others addressing local labor conditions will allow the campaign to objectively rank (and weight as appropriate) the variables across all plants.

**Best Practices for Community Revitalization and Job Creation Efforts**

The original goal for the project requested us to, “devise alternatives and complementary measures for which the Sierra Club can advocate at the federal and state level that would help buffer and alleviate negative economic impacts and foster growth and job creation in the clean energy sector.” The premise of replacing the jobs that are lost from plant closures with alternative energy jobs, or more broadly green jobs, is alluring. However, our research suggests that this approach alone is too inflexible to apply for every community. Furthermore, while replacing jobs may be a good first step, it may be insufficient for alleviating the negative economic impacts that result from plant closures.

Our recommendations therefore, insist on focusing efforts in three focus areas: Community revitalization, workforce development, and repurposing power plants. This expanded focus has a number of benefits. First, by expanding the scope of the programs focus the Club will be less likely to achieve long-term results in communities by addressing a number of factors that dampen the prospects for job growth in these cities and towns.

Second, advocating for community revitalization efforts is more closely aligned with the Sierra Club’s mission and programs, and therefore will compliment the strengths of the work done of the national campaigns, state chapters and regional programs. Finally, by expanding the options for alleviating the negative economic impacts the Beyond Coal Campaign will have more tools in its toolkit to tailor solutions that are appropriately suited for each community. The following focus areas outline strategies for achieving these goals.

**Focus Area One: Green Workforce Development**

The best way to develop and train a local workforce is to form a partnership with organizations, businesses and government to leverage resources and existing programs. These partnerships should include a variety of stakeholders. According to a report from Green for All (2008), these groups should include:

- **Employers and industry representatives** to help identify current and future labor shortages, design training curricula based
on actual workforce needs, and hire people who successfully complete the training.

- **Community-based and workforce development organizations** to help recruit target populations, assess skill levels, identify participant needs and barriers to success, organize support services, deliver training, and evaluate outcomes.
- **Labor unions** to bring ties to employers and connect participants to opportunities in union apprenticeship programs.
- **Community colleges and other workforce training institutions** to design curricula and provide skills training, support services, and career guidance.
- **Government agencies** to conduct labor market analyses and provide connections to the existing workforce development infrastructure, program funding, support services, and, in some cases, employment opportunities.

The clear role for the Sierra Club is to act as a community-based workforce development organization. In this capacity, Sierra Club can help locate workforce development opportunities, find organizations and existing programs to partner with, and help find funding for training programs.

**Locating Workforce Development Opportunities**

There are a number of resources for determining the best place to invest resources for workforce development. Economic development corporations and partnerships are public, private, or quasi-private institutions that are formed for the purpose of creating new jobs and income growth. These organizations receive hundreds of millions of dollars from the Department of Labor and state governments to invest in marketing for the city, and also to conduct workforce assessment surveys to determine the areas that local governments should invest in for business growth. The results of these studies are often available for public use and can be attained either from their websites or by contacting the organization (Hufford, 2012).

Additionally, community colleges and technical institutes are a good source of information as well. Often these schools have programs that are tailored to the needs of businesses, and often partner with businesses to locate jobs for recent graduates. These institutions are also a great partner for clean energy job training. Community colleges and technical institutes are major sources of training for jobs involving alternative energy technologies, energy efficiency and weatherization, and energy auditors (White, 2008).

Another strategy is to go into communities and talk to businesses. According to Madura Wijewardena (2012), Director of Policy and Research for NUL, a highly successful practice that the Central Florida Urban League conducted, was setting up meetings with local businesses and business roundtables to find out if they are having difficulty finding employees with training. The program has placed employees in a wide variety of businesses from the technology/broadband, energy, hospitality, culinary, manufacturing, and medical support sectors.

**Finding Organizations and Existing Partners**

According to the Green for All (2008) report, “Partnerships can be organized by can be organized by industry, such as energy

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8 In 2009, the Department of Labor provided over $100 million in grants to states for Labor Market Research. The results of the studies are available here: http://www.doleta.gov/pdf/LMI_Grant_Summaries_02052010.pdf
efficiency or green building. Or they can be organized by sector, such as building and construction, with workforce strategies for renewable energy, efficiency, and transit.” The important thing is to narrow the focus of each partnership to an individual industry in order to use data, expertise, and resources most efficiently.9

Leveraging Funding Resources for the Partnership

A number of government officials emphasized the importance of job placement being tied to training as an essential component for receiving federal funding. One official stated that the American Recovery and Reinvestment Act funds were not as successful at creating jobs as was predicted in part because funds were doled out to projects without clear end goals of job placement. For example, many workers were trained in energy efficiency and weatherization in areas where there simply wasn’t a strong demand for the services, and therefore workers either needed to relocate or find other employment (Eley, 2012).

The administration took a lesson from this and has strongly encouraged agencies to make job placement a central focus for workforce development support grants. Therefore, when partnering with organizations that specialize in training, make sure there is a clear connection between the program and future employment.

Madura Wijewardena (2012) of NUL stated their organization has strongly emphasized when partnering with businesses, to create training to apprenticeship programs, and getting guarantees from businesses to hire employees upon completing the training requirements. In some instances they have had success rates with job placement as high as 80%.10

He also emphasized that funds don’t have to come from the government, in many instances, businesses will provide money to training partnerships to recruit and hire workers. In the case study on the Central Florida Urban League the organization receives seed money from the businesses to develop training programs with testing, evaluation, apprenticeships and eventual job placement.

To effectively leverage resources for training programs with job placement, the Sierra Club can work in two ways. One way is for the organization to locate existing organizations with workforce development programs and partner with them to find suitable training programs that could be adopted to fit the needs of a community. Many national or state-level workforce development agencies have malleable programs, which have the same operational structure, but can be used to train employees in a variety of different sectors. Another approach is to use the tools outlined in the section above to identify a sector or industry that needs workers, and then subsequently find a workforce training partner to assist in developing a program to fit

9 For a more detailed explanation on this section, visit: http://www.nawb.org/documents/sector_strategies_full.pdf

10 This report has a number of case studies from NUL on successful training practices: http://www.twresearchprogram.com/pdf/TWC_WijewardenaReport.pdf
this need. Deciding the best method should be done on a case-by-case approach (Wijewardena, 2012).

**Green Jobs vs. Jobs**

For an environmental organization, it may seem odd to advocate for jobs outside of the green workforce sector. However, not all communities have the same natural resources or workforce characteristics, which are amenable to green jobs development. In many low-income communities, the existing infrastructure for workforce development may be limited, and the areas that are most ripe for job training may be in other sectors.

In fact, the one common theme that resonated throughout all of the interviews was the importance of advocating for jobs based on the needs of each community. So while this section contains advice for green workforce development, we advise that this should not be an all-encompassing approach. For example, according to a member of the EPA’s Green Energy Work Group, many of the job shortages that are causing alarm in the northeast are from retiring operators in utility companies (Eley, 2012). These positions require technical training and this would be a great place for an industry to organize a partnership around.

However, with that said, there is plenty of room for green jobs in these targeted communities. According to a recent study by IBIS World (2012), three of the top ten fastest growing sectors are in the clean energy economy, including wind and solar power, and environmental consulting. And these sectors are being heavily supported by federal, state, and local funds.

For the purpose of flexibility, it is better for the Sierra Club to adopt a broad definition of green jobs. One such definition from the White House Middle Class Taskforce (2010) describes green jobs as, “jobs that provide products and services which use renewable energy resources, reduce pollution, conserve energy and natural resources, and reconstitute waste.”

These jobs can include:

- Energy auditors
- Insulation and weatherization technicians
- HVAC technicians and installers
- Wind energy technicians
- Solar photovoltaics or solar water heating installers
- Manufacturers, distributors, and salespeople of energy efficient products
- Low carbon (or clean energy) transportation planners, manufacturers, refiners, or technicians
- Research and development staff

Thus, for example, if there were a need for additional staff in public transportation, such jobs would be considered green jobs. This allows the Sierra Club to more appropriately focus on the needs of a community, while still

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11 The National Association of Workforce Development Boards is an excellent resource for locating organizations across the country to partner with: http://www.nawb.org/


13 How Does a State Develop a Clean Energy Workforce?: http://www.epa.gov/statelocalclimate/state/topics/workforce.html

14 How Does a Local Government Develop a Clean Energy Workforce?: http://www.epa.gov/statelocalclimate/local/topics/workforce.html
being able to claim success in developing the clean energy economy.

**Focus Area Two: Repurposing Coal Plants**

The retirement of several coal-fired power plants across the U.S. will result in possible job and tax revenue losses, but also present opportunities for sustainable development and positive environmental and health incomes. For a successful transition into retirement, however, action must be swift and well planned. In many cases, retired plant sites remain dormant for years, or even decades, turning into industrial blight (Slavin and Brown 2011, 5). It is imperative that communities facing coal plant retirements avoid this scenario, as property values within 1,500 feet of brownfields are negatively affected until the site is cleaned up (Leigh and Coffin 2005).

Among the many factors affecting the repurposing of coal-fired power plants, a realistic plan with feasible financing mechanisms is essential. There are multiple funding resources and tax incentives available for projects of this nature. By taking advantage of all possible funding opportunities, public and private actors will maximize their return on investment and minimize the threat of the plant retirement becoming a burden to the city or state budget.

While a new wave of coal-fired power plant closures is expected in the near future due to EPA regulations taking effect, there are several previous cases of plant closures that can act as historical lessons for state and local governments as they plan for the repurposing of their own plants. In the past, coal-fired power plant repurposing projects have generally fallen into four different categories of use. In the first category, plants are repurposed with the public interest as a priority for future use of the power plant site, which usually materializes in the form of a community center of school. This public mission can often gain corporate donations, reducing overall project costs (Staple and Slavin 2012). A second type of repurposing occurs when power plants are preserved for their historic value as a museum or landmark.

The third method of coal-fired power plant repurposing utilizes coal plants’ property value to redevelop the plant site as commercial or residential real estate. Finally, the fourth way plants have been repurposed is by retrofitting the plant to generate energy from an alternative source. All patterns of plant repurposing strategies have found a way to be successful by taking advantage of their plants physical and geographic qualities, and present a framework for the decision making process when determining the repurposing plan for the next wave of coal-fired power plant retirements.

**Homan Square Power House/Shaw Technology and Learning Center- Chicago**

The Homan Square Power House in Chicago, IL presents an illustrative example for the transition of a coal-fired power plant transitioning from an inner city source of damaging pollution to a community center. The Homan Square Power House was built in 1905, generating heat and electricity for the world headquarters of Sears, Roebuck and Co. until it was retired as a historical landmark in 1978. It remained in its retired state until 2007 when it was repurposed as the Shaw Technology and Learning Center. The current purpose of the plant is to serve as a community meeting center for low and moderate income residents, as well as housing the Henry Ford Academy charter school, a school with concentrations in green technology and sustainability (Slavin and
Brown 2011, 10). This project served as a key component of Chicago’s three-tiered effort to revitalize the power plant’s neighborhood in the form of commercial development, housing, and community services such as health care and recreational facilities (Homan Square).

This plant-repurposing project took advantage of public funding and existing features in the plant to serve the community and further the sustainability movement. The overall cost of the project was $57 million, but $17 million in federal tax credits reduced this. Completed in 2009, this project took advantage of the plant’s ample 30,000 square feet of floor space and spacious three story turbine room, utilizing the plant’s physical attributes and geographical proximity to an underserved urban population. The expansive room that used to enclose the power plant’s turbine room now performs a versatile range of purposes, including serving as the cafeteria, gym, and holding school assemblies and community events. The repurposed building retains several features from the power plant for their historical and aesthetic value, including the coal ash conveyor belt, a 40-ton gantry crane, and the brick walls and terra cotta floor tiles of the turbine room. Geothermal heating, energy efficient lighting, and insulated windows help make this building LEED Platinum certified (Slavin and Brown 2011, 10).

**Station L Power Plant/Oregon Museum of Science and Industry-Portland, Oregon**

The Station L Power Plant in Portland, Oregon provides a successful model for repurposing a historical power plant as a museum. This power plant used to be a wood chip and sawdust fired steam-generating plant, and since 1992 has served the Portland community as the Oregon Museum of Science and Industry (OMSI). Like many other plant repurposing projects, the OMSI project relied on multiple sources of funding, raising its approximately $40 million in project costs through $8 million in public bonds and $32 million in donations. Similar to the Homan Square Power House in Chicago, OMSI showcases green technology such as a solar electric car and electric bike charging station in its parking lot, the first in North America. OMSI contrasts cutting edge green technology with historical industrial machinery exhibits. The museum also displays another successful utilization of the expansive space of the power plant’s turbine hall, repurposing the 219,000 square feet of space into a 200-seat planetarium and a five story OMNIMAX Dome Theater. This repurposing project benefits the community through preserving the power plant’s historical value, while educating the community on past, present, and future industrial technologies (Slavin and Brown 2011, 12).

**Station B/Electra Condominiums- San Diego, CA**

The transition of a San Diego Electric Railway Company power house into a luxury condominium complex proves that the retirement of a coal plant should not be associated with a loss of economic activity and blight. The power plant, known as station B, was retired in the 1980s and designated as a landmark building by the city of San Diego for its Classical Revival architecture. This landmark classification presented a restriction for the plant’s redevelopment options, as it meant that the outer walls of the power plant must be preserved. By virtue of its a desirable location two blocks from San Diego Bay, the power plant’s landmark status did not deter private investors, and in 2008 The Bosa Development Company of Vancouver, BC pursued an ambitious redevelopment project to convert the plant into a 42 story condominium building. To comply with the
landmark restrictions, the entire contents of the building were gutted, leaving only the façade. Internal features of the power plant were preserved, however, by elegantly recreating the turbine hall (Connell et al 2009, 76). A project of this magnitude was costly at $248 million, but it was economically successful as its 248 units, which range in price between $500,000 and $2.5 million, sold out in a mere 3 months (Salem Safe 2012, 5).

Salem Harbor Power Station in Salem, MA

The city of Salem, MA is currently in a situation that many communities will find themselves in the near future: how to recover lost revenue from a coal plant retirement. The city is in the decision making stage, and seeks to redevelop the site of their coal-fired power plant with the goal of maximizing tax revenue. While many of the previous cases discussed were retired for a considerable amount of time and no longer generating significant amounts of tax revenue, this coal plant retirement has significant economic implications to for the Salem tax base. The owner of the plant, Dominion Power, currently was expected to pay $3.5 million in taxes to Salem in 2009 (Brattle Group 2008, 1). Thus, the closing of this plant represents a significant loss of state and local government revenue, and a potential loss in the provision of government services. Closure of the plant will also likely result in the loss of jobs if the city does not formulate an effective repurposing and economic transition plans.

The Brattle Group performed a detailed analysis with the goal of determining the best ways for Salem to recoup the lost tax revenue resulting from the closure of the power plant. They recommended a mixed-use plan for the repurposing of the power plant site. Their recommendations for the 42 acres include: 17 acres devoted to the development of 180 single family homes, a 4 acre retail center, an apartment building situated on 15 acres of the former power plant site, a 4 acre office park, and a new hotel that is expected to yield $22,000 in annual property taxes (Brattle Group 2008, 3). The expected tax revenues resulting from all of these proposed development projects would be $1.6 million per year in 2008 dollars (Brattle Group 2008, 3). The power plant’s water front location indicates that the developed property is likely to be of a higher value than average properties in the communities. Independent of all possible site repurposing and economic development initiatives, Salem expects an increase in property tax revenue resulting from increases in home values by improving quality of life for residents and reducing maintenance costs such as cleaning coal soot. The closure of a fossil fuel burning power plant is expected to increase average home values by 5%, resulting in increased property tax revenue (Brattle Group 2008, 4).

While the immediate costs to Salem and communities experiencing a coal-fired power plant retirement will be significant and repurposing of the site will take considerable time and investment, the development of the site can potentially produce short and long term gains. The development of the site will have considerable costs, but these costs are likely to manifest themselves as income for construction workers within the community. In the case of Salem, MA, the city is expecting the redevelopment projects to add 300 construction jobs. At the conclusion of the site repurposing projects, Salem is expecting an additional 606 long-term jobs (Brattle 2008, 11). With its waterfront location, and no historical or aesthetic value to speak of, Bridgeport, CT may want to pursue a similar multi use repurposing strategy for to mitigate economic losses resulting from the plant’s closure.
Alternative Power Generation

Along with the loss of jobs and tax revenue, the retirement of coal-fired power plants will result in the loss of the energy generating capacity that the plants produced before their retirement. Between 2012 and 2020, it is expected that 10-15 percent of the nation’s coal-fired power plants will be retired, resulting in an energy generation shortfall of 30-50 gigawatts (GW) (Slavin and Brown 2011, 6). This shortage of energy generation capacity will necessitate energy production from alternative fuel sources to coal. One alternative energy source strategy would utilize existing coal-fired power plant infrastructure and retrofit retired plants to generate electricity by burning natural gas. As a fuel source, natural gas presents numerous benefits. Energy generation from natural gas produces less than half the amount of CO2 emissions per kilowatt-hour, about one tenth the amount of nitrogen oxide emissions, and negligible amounts of mercury, sulfur dioxide, and particulates compared to coal-fired power plants (Slavin and Brown 2011, 7).

Many states are adopting renewable energy portfolio standards, which require that a portion of the electricity a utility sells to be generated from renewable sources. As states introduce more renewable energy sources into their energy portfolios, the appeal of natural gas as a transitional technology increases, as the energy output from natural gas can be manipulated rapidly to complement the fluctuating output levels of renewable technologies such as wind and solar energy generation (Slavin and Brown 2011, 8). An additional possibility for alternative energy conversion is to retrofit coal-fired power plants to generate energy by co-firing biomass and coal (Mann and Spath 2001). An alternative approach to alleviate the energy shortfall resulting from coal fired power plant closures is to invest in energy efficiency improvements (Elliot, Gold and Hayes 2011).

Focus Area Three: Community Revitalization

The broken windows theory holds that neighborhoods that appear unclean or uncared for are more likely to become hotbeds for crime and criminal activity. This theory suggests that the appearance of disorder in a community can lead to actual disorder, creating a negative feedback loop that further decays the community’s infrastructure and discourages businesses from locating there.

This theory also holds true for environmental amenities. New residents and businesses will be weary of relocating in an area with polluted waterways, lack of open green spaces, and foul-smelling polluted air. Additionally, if the city lacks basic infrastructure, such as access to public health facilities, healthy food stores, or public transportation, the city’s conditions will worsen. Therefore, community revitalization efforts are of critical importance to facilitating long-term job growth in a community.

There are many directions that the Club can take for community revitalization efforts. There are also many federal resources, programs and technical assistance tools available for organizations to use for these efforts. A great place to find a multitude of these resources from 17 federal agencies is the Community-Based Federal Environmental Justice Guide, which can be found in Appendix II. This guide is also very useful for locating grants that federal agencies offer for a variety of different projects.
Deciding Which Community Revitalization Efforts to Undertake

According to Suzi Ruhl (2012), Senior Attorney for EPA’s Office of Environmental Justice, the easiest way to decide where to focus efforts in a community is to “find out what is broke and fix it.” In her experience, working with local nonprofits, faith-based organizations and other community leaders is the easiest way to ‘find out what’s broke.’ In some instances this may mean developing community gardens in areas that are food deserts. Some neighborhoods may be in need of affordable housing or more green spaces.

Holding community meetings is also a direct route to finding out the problems underlying a community. Working with local organizations to bring people together can be a good way to get local support for projects and programs. Mrs. Ruhl (2012), emphasized these meetings are a great opportunity to bring together community leaders and organizations, which are vital for forming partnerships and collaborative problem solving.

Benefits of Incorporating Community Revitalization Efforts

There are a number of advantages to advocating for community revitalization strategies. One benefit is that these efforts are already integrated into the work in the Club’s national campaigns, state chapters and regional programs. Advocating for clean air, clean water, and reducing sources of toxics and other pollutants not only improves the environment and public health in a community, but they also make the community more attractive to businesses and new residents. The Sierra Club’s existing programs and strategies in cities’ affected by coal plant closures could be counted towards facilitating job creation through community revitalization.

Another reason, closely tied to the first, is that these projects are more closely tied to the Sierra Club’s mission, and may be necessary for a more robust campaign. While organizers may not have as much experience conducting the research for and managing workforce partnership efforts, programs to clean up pollution, provide sustainable transportation and livable communities are a core function of Sierra Club staff. Such programs better compliment the strengths of the organization and should be considered as a part of the campaign to address help communities.

Conclusion

The imminent retirements of the nation’s coal-fired power plants presents both risks and opportunities for the communities involved. The communities affected by the retirements must actively plan for the future to mitigate potential economic and energy generation losses, or face the risk of blight. The Sierra Club can counteract this by taking advantage of public funding at the state, local, and federal level and creating repurposing plans that suit the plant site’s attributes and the community’s needs, developing workforce partnerships to create jobs, and revitalizing communities to attract businesses and new workers. With effective strategy and implementation, communities will no longer be subject to coal’s harmful health and environmental effects, and prosper in its absence.
Putting the Information into Action: The Case of Bridgeport

The following is a analysis of data we have collected from Bridgeport, followed by a review of events and organizations in Bridgeport, Connecticut, which are either actively engaged in working towards the shutdown of the Bridgeport Harbor Power Station or are dedicated to the sort of holistic community development efforts, which will be key to the success of the “Beyond Coal Campaign.” A catalogue of workforce development and community revitalization organizations, which are potential partners for Sierra Club for their groundwork in the area, is included along with each organization’s mission and contact information. The activities, skills and capacity of these organizations are vital resources to be leveraged in conjunction with Sierra Club’s “Beyond Coal Campaign.”

Many of the organizations are well positioned within the community and actively dedicate themselves to partnerships with other non-profits or business to bring about change, development and social/environmental justice. The final section includes information about other legacy sites which exist in Bridgeport and will requires substantial effort to reduce negative impacts for the community as a whole; once remediated, these sites also hold great potential to be assets for community development in Bridgeport, Connecticut.

Bridgeport Data Analysis

The Bridgeport Harbor Power Station has not added a new unit since 1968 and its oldest unit was built in 1961. The oldest unit was built a few years later than most plants examined but the newest unit approximates the median age of new units, the majority of which are more than forty years old. Except for the Lakeshore Power Plant, Bridgeport has the highest surrounding population density of any generating stations we examined at 4910 per square mile within a five mile radius of the plant, 100% of which is urban. Additionally, Bridgeport has the second highest concentration of minority populations in the immediate area (46.3%) as well as the second highest concentration of African Americans (20.3%). Only 58.4% of those within a five mile radius have an education level equal to that of a high school graduate; 28.6% earn incomes below $25,000 per year and 12.5% of those live below the poverty line; this is significantly lower when the radius is tightened to one mile (see case study below). The demographic characteristics of the surrounding area suggest community development will be an important tool in Bridgeport.

The SO2, NOX and Mercury emission levels are relatively low compared to other plants we examined (see data) however the Bridgeport Harbor Plant still received an ‘F’ for its ALA ozone grade and pollution is leading to significant negative health impacts for the surrounding population. Between 2000 and 2004 there were 46 deaths, 94 heart attacks, 877 asthma attacks, 42 hospital admissions and 31 cases of chronic bronchitis the Clean Air Task Force attributed to burning coal in Bridgeport; all of which are again second only to Lakeshore.

The plant has 115 employees, 85 of which are unionized, making Bridgeport a significant
target for Sierra Club’s blue-green alliance strategy. Even if all employees come from the immediate area, compared to the size of the surrounding population the number employed at Bridgeport Harbor is relatively low, increasing the ease with which the jobs might be replaced upon plant closure. The negative health outcomes, age of the plant, low number of employees and Democratic political climate indicate Bridgeport should be ripe for closure and inclusion in the “Beyond Coal Campaign.”

Bridgeport Harbor Power Station: Bridgeport, Connecticut

The 43-year old coal plant at Bridgeport Harbor Power Station has been the site of significant protests by the public and environmental groups recently, including Climate Summer and Greenpeace as well as being targeted by Sierra Club’s “Beyond Coal Campaign”. The NAACP has also signed on to actions against the Bridgeport plant and contends the negative effects are disproportionately impacting poor and minorities populations with the average income within one mile of the plant equaling just $11,400 per year and consisting of over 87% people of color. The plant’s operating permit requires renewal every five years with the plant’s owner PSEG having to prove it is complying with Federal Clean Air Act standards for pollution controls and monitoring. Conservation Law Foundation’s vice president Jonathan Peress contends permits tend to get renewed even if the plant is not found to be in compliance and it is up to the Department of Energy and Environmental Protection and EPA to engage in enforcement.

Bridgeport Harbor Station’s current operating permit expired February 2, 2012 and the DEEP, which is scheduled for May 14, 2012 at 6:30pm, has granted a public hearing.

Other Information of Interest in Bridgeport

Regional Greenhouse Gas Initiative: The RGGI is New England’s carbon dioxide trading program; the income from credit sales is available for energy efficiency programs and renewable energy programs and is distributed in Connecticut under the following structure:

- 69.5 percent of Connecticut's proceeds from the sale of RGGI CO2 allowances provide additional support for energy efficiency programs overseen by the Energy Conservation Management Board (ECMB) and administered by Connecticut Light & Power (CL&P), United Illuminating (UI) and the Connecticut Municipal Electrical Energy Cooperative (CMEEC).
- 23 percent of proceeds support renewable energy programs administered by the Connecticut Clean Energy Fund (CCEF).


17 CTPost. Activists want Bridgeport Coal Plant Closed

Governor’s Executive Order on Green Jobs:
In October 2009, Connecticut Governor M. Jodi Rell signed an executive order establishing guidelines to train and develop the state’s green collar work force aimed at creating a green workforce that will meet the needs of the growing clean energy business sector, attract new investments and help ensure a healthier environment for future generations. The executive order contains the following items:

- Requires state agencies to plan for growth of green industries and identifies those jobs that will qualify as “green jobs;”
- Creates a Green Collar Jobs Council comprising of state agencies;
- Investigates allocating funds for existing job training to the new comprehensive 21st Century Green Jobs Training Initiative;
- Investigates allocating up to 25 percent of funding from federal stimulus package for green, shovel-ready projects;

Connecticut’s Environmental Justice Law: In May 2008, Connecticut passed its first ever-environmental justice law. The law recognizes 25 low-income towns (called distressed municipalities) and low-income neighborhoods in 34 other Connecticut towns as environmental justice communities, of which Bridgeport is one. If certain types of major polluting facilities are proposed in these neighborhoods, the applicant for a permit from the Department of Environmental Protection or the Siting Council would be required to do two things before building or expanding one of these facilities:

- They would be required to get approval for an enhanced public outreach plan, to include a public meeting to explain what is being proposed at least 60 days before the agency makes its decision, and
- They would negotiate with the chief elected official and the environmental justice community about environmental benefits to offset some of the proposed environmental hazards. These optional benefits may include funding for environmental education, diesel reduction, walking or biking trails, or urban forestry.

Connecticut Department of Labor:
Connecticut DOL keeps and regularly updates a data base of Labor Market Information (LMI) which tracks current and future labor market demands: http://www1.ctdol.state.ct.us/lmi/index.as

A Major Resource for Bridgeport Area Activity: The Bridgeport Regional Business Council: The Bridgeport Regional Business Council (BRBC) espouses a regional approach to economic development and consists of Chambers of Commerce from Bridgeport, Stratford and Trumbull as well as Leadership Greater Bridgeport and Women's Leadership Council. Additionally, the BRBC partners with a substantial number of local organizations, which can be contacted through the BRBC directory. Efforts of the BRBC include:

Create an environment to encourage expansion of current businesses as well as attract new ones capable of increasing tax bases and spurring regional economic development

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Regional approach will present greater opportunities for specifically trained green collar work force employees
Expanding number of business partners increases ability to determine where current and future labor shortages will occur
Added leverage when securing public resources/grants for development
Greater clout for input on public policy decisions

Small Business Development

- Seminars on how to access business from large companies, city, state and the federal Government
- Networking workshops aimed at gaining new clients and customers
- Program to market the city to local and regional audiences
- “Small. Fast. Smart” electronic journal (blog) containing articles helpful to small businesses
- Social networking presence to communicate information and opportunities to constituents

Partnered with the Urban Land Institute for creation of land use policies, conservation and development

- Greater predictability and confidence encourages greater investment
- Redevelopment of vacant industrial sites at Steel Point and former Remington Plant
- Revitalized arena and ballpark at Harbor yard, Captain's Cove Seaport, Ferry Terminal and new Derektor shipyard.
- Expansion projects at Housatonic Community College, Bridgeport and St. Vincent's Hospitals

- Cultivating multi-modal transportation access
- Conducted efficiency study of Bridgeport Public School system
- Created Bridgeport Education Work Council which partnered with City of Bridgeport and Bridgeport Board of Education

Bridgeport Regional Business Council
10 Middle Street, 14th Floor
Bridgeport, CT 06604
(203) 335-3800
info@brbc.org
http://www.brbc.org
Karen DelVecchio, Executive Vice President, BRBC & Executive Director, Trumbull Chamber of Commerce, delvecchio@brbc.org : (203) 335-3800 ext.109
Lisa Labella, Director of Leadership and Member Services, BRBC labella@brbc.org : (203) 335-3800 ext.116

Climate Summer: Climate Summer is a summer internship program for college students, graduate students, and recent graduates. Climate Summer riders travel exclusively by bicycle in small teams across New England, spending approximately one week in a community before biking on to the next. While in each town, riders connect with community leaders that are actively addressing society’s addiction to fossil fuels by crafting local solutions that strengthen communities.
Climate Summer
30 Bow Street
Cambridge, MA 02138
(617) 299-0771
climatesummer@betterfutureproject.org
http://www.climatesummer.net

Climate Summer is a program of the Better Future Project which works to accelerate the growth of a movement to make stronger, more resilient communities and advance a
rapid and responsible transition away from fossil fuels.

Better Future Project has the same mailing address as Climate Summer (stated above) info@betterfutureproject.org
Craig S. Altemose, Executive Director craig@betterfutureproject.org
Marla Marcum, Director of Programs marla@betterfutureproject.org
Vanessa Rule, Director of Community Engagement vanessa@betterfutureproject.org
http://www.betterfutureproject.org

Conservation Law Foundation: protects New England’s environment for the benefit of all people. They use the law, science and the market to create solutions that preserve our natural resources, build healthy communities, and sustain a vibrant economy.
CLF Headquarters
62 Summer Street
Boston, MA 02110
(617) 350-0990
http://www.clf.org

Action in Connecticut is handled by CLF’s Vermont Division:
Zachary Knox Griefen
Environmental Enforcement Litigator
Conservation Law Foundation
15 East State Street, Suite 4
Montpelier, VT 05602-3010
(802) 223-5992 ext. 4011
zgriefen@clf.org

Community Partners: Workforce Development

CTWorks: A Resource for Employment and Career Opportunities

The CTWorks system is a partnership of organizations working as a team to promote a universal approach to providing effective workforce assistance to job seekers and businesses. This collaboration of state, regional and local organizations is designed to provide a seamless delivery system of programs and services. CTWorks One Stop Career Centers are located throughout the state, offering resources ranging from employment workshops and résumé assistance for job seekers to recruitment services and tax credit programs for employers. Centers also provide Labor Market Information, an electronic job bank and specialized veterans’ services.
Connecticut Department of Labor
200 Folly Brook Boulevard
Wethersfield, CT 06109
(860) 263-6000
Dol.webhelp@ct.gov
http://ctdol.state.ct.us/ctworks/ctworks.htm

Career Resources: Preparing Workers for Life

Career Resources is a well-established non-profit workforce development organization that has achieved national recognition for preparing youth and adults in Southwestern Connecticut to gain employment and progress in their careers. Career Resources provides them with skills, resources, and support necessary for personal development, economic self-sufficiency, and career advancement, and also provides planning and staffing resources to the business community in support of workforce development.
Career Resources
350 Fairfield Avenue 3rd Floor
Bridgeport, CT 06604
(203) 334-5627
information@careerresources.org
http://www.careerresources.org

The Connecticut Alliance for Business Opportunities (CABO)
CABO’s mission is to create, identify and enhance business opportunities for lesbian, gay, bisexual and transgender (LGBT) and LGBT-allied organizations, thereby fostering a more inclusive and vibrant Connecticut economy.

**CABO - CT Alliance for Business Opportunities**
24 Dixwell Avenue, #155
New Haven, CT 06511
(203) 903-8525
info@thecabo.org
http://www.thecabo.org

**The Workplace**
Administers workforce development funds and coordinating providers of job training and education programs. They believe in the power of ideas to affect great change – so they act as convener, catalyst, collaborator and advocate for workforce development throughout the region, state and nation. The Workplace regularly share ideas, best practices and lessons learned with lawmakers, foundations, think tanks and other workforce development organizations around the country. Partnerships and collaboration are vital to The WorkPlace’s efforts helping people prepare for careers and strengthening the workforce for employers. The WorkPlace works closely with government agencies (federal, state, and local), regional business organizations, employers, think tanks, approved training providers, both non-profit and for-profit, and staffing agencies.

The Workplace Inc.
350 Fairfield Avenue
Bridgeport, CT 06604
(203) 610-8500
http://www.workplace.org

**Community Partners: Community Revitalization**

**The Bluegreen Research Institute**
A project of The WorkPlace, builds upon the resources and experience of the WorkPlace, providing a variety of consulting services to nonprofit, for profit, start-up businesses and government agencies. Services include the following:

- grant writing
- program design and development
- research
- market analysis
- workforce/economic intelligence
- target identification
- project management
- program evaluation

The Bluegreen Research Institute has helped a variety of clients from many disciplines including education, housing, mental health, social services, manufacturing, construction, health care and technology. Their grant writing services have helped clients secure over $33 million in public financing. The Bluegreen Research Institute also provides training for non-profits in all areas of capacity building, including building Board of Directors, strategic planning, revenue development, financial management, legal consulting and more. Workshops are available upon request and delivered on-site or in our training facility in Bridgeport, Connecticut. All classes are two hours long and can be customized for content.

Bluegreen Research Institute
350 Fairfield Avenue
Bridgeport, CT 06604
(203) 610-8554
mmccarthy@workplace.org
http://www.bluegreenresearch.org
GEAR UP: Yale-Bridgeport (Gaining Early Awareness and Readiness for Undergraduate Programs)

The mission of this educational initiative is to significantly increase the number of low-income and minority students who are prepared to enter and succeed in post-secondary education. The program provides six-year grants to states and to school district-university partnerships to offer services at high-poverty middle and high schools. GEAR UP grantees serve and follow an entire cohort of students beginning in the middle grades, through high school and into college. GEAR UP funds are also used to provide college scholarships to low-income students. GEAR UP offers the following services in Bridgeport:

- Targeted interventions for teachers
- Professional development for guidance counselors
- Academic enrichment and support programs
- Tutoring and Mentoring services
- High-quality college preparatory tools available to assist families

Yale-Bridgeport GEAR UP Partnership
389 Whitney Avenue
New Haven, CT 06511
(203) 789-7645
http://yale-bridgeportgearup.org

GroundWork Bridgeport

Main goals have been to convert blighted areas of the city into gardens, parks, playgrounds and streetscapes. The organization also strives to develop environmental education, job training, self-sufficiency, and elderly assistance as a means of improving the quality of life for all people in Bridgeport. Groundwork has a history of bringing community groups together as an integral part of the revitalization process in Bridgeport. Groundwork Bridgeport has partnered with over 6400 individuals, 66 community groups, 48 businesses and 63 foundations to reclaim and recreate 65 recreational sites and green spaces. Programs of interest (which may be replicated elsewhere) include:

- Butterflies are Teachers (BAT)
- Neighborhood Environmental Demonstration Sites (NEDS)
- Park City Sweep

Groundwork Bridgeport
510 Barnum Avenue, Suite 304
Bridgeport CT, 06608
(202) 335-6126
Richard Tiani, Executive Director,
groundworkbpt@sbcglobal.net
http://www.groundworkbridgeport.org

Action for Bridgeport Community Development, Inc.

The agency aims to work with people toward the eradication of the "paradox of poverty in the midst of plenty in this nation." ABCD presently serves over 35,000 individuals annually through its broad range of services in a six-town area, covering Bridgeport, Easton, Fairfield, Monroe, Stratford, and Trumbull, Connecticut. ABCD is distinguished from other corporations in two important ways. First, ABCD's sole mandate is to assist the poor. Second, ABCD concentrates its efforts and resources on identifying and eliminating the causes of poverty rather than only dealing with its effects. ABCD's efforts are directed towards promoting appropriate institutional change and enabling the poor to become self-sufficient.

ABCD, Inc.
1070 Park Avenue
Bridgeport, CT 06604
(203) 366-8241
Carolyn Lloyd, Director (203) 384-6904
http://www.abcd.org
**Bridgeport Neighborhood Trust**

The mission of Bridgeport Neighborhood Trust is to strengthen communities by embracing a comprehensive revitalization approach through advocacy, education, investment, and technical support. The Bridgeport Neighborhood Trust has an impressive tally of results: including 97 new affordable housing units, 681 lead-safe apartments, and 386 families who achieved the American dream with BNT’s help.

Bridgeport Neighborhood Trust
240 Fairfield Avenue
3rd Floor
Bridgeport, CT 06604
(203) 332-7977
http://www.bntweb.org

**Burroughs Community Center**

Works to provide the residents of Bridgeport with program opportunities and facility resources for the purpose of promoting individual growth and community cohesiveness. They fulfill this through direct services and by collaborating with community and facility partners, and by connecting people requesting information, programs or forms of aid with agencies in the Greater Bridgeport community. The Burroughs Community Center offers a variety of programs including the arts, fitness, financial literacy as well as meeting space for clubs.

The Burroughs Community Center
2470 Fairfield Avenue
Bridgeport, CT 06605
(203) 334-0293
http://www.burroughscc.org

**Community Capital Fund: Investing in Greater Bridgeport**

Community Capital Fund loans provide growing and staying power to all types of industries, help revitalize neighborhoods and serve as catalysts for community success. Community Capital Fund facilitates the flow of capital and expertise into housing and economic developments that benefit low and moderate-income people in the Greater Bridgeport Area. With a shared goal to promote economic development and reinvestment in the Greater Bridgeport Area, CommCap was created in 2005 from a merger between the Bridgeport Neighborhood Fund, founded in 1986 to provide loans for affordable rental housing, and the Grow Bridgeport Fund, created in 1996 to provide loans to small businesses.

Together, these organizations have:

- Invested more than $35 million in Greater Bridgeport
- Provided loans for the development of over 1000 units of affordable housing
- Financed over 75 businesses, helping to retain/create hundreds of jobs & to increase tax base

Community Capital Fund
240 Fairfield Avenue 3rd Floor
Bridgeport, CT 06604
(203) 332-7977
http://www.commcap.org

**The Council of Churches of Greater Bridgeport**

The Council of Churches of Greater Bridgeport was founded in 1945 and for 67 years they have worked in partnership with area congregations, community groups, local foundations, and individuals who share their commitment and contribute financially to help them to care for those in need. They focus their mission of care in three areas: Kids, Poverty and Crisis, and Faith in Action.

Council of Churches of Greater Bridgeport
1100 Boston Avenue,
Bldg 5-A
Bridgeport, CT 06610
The agency was formed in 1972 as a community response to the devastation being wrought on families by the problems of abuse, neglect, addiction, and crime. Beginning with their flagship program, Connection House, a halfway house located in an attractive Middletown neighborhood, The Connection has been a leader in creating community-based treatment programs. They have found that services provided in the community are very effective, helping both the person in need and contributing to the well-being of the entire community. The agency has grown dramatically – now totaling over 38 programs across the state, providing services in the areas of supportive housing, women and children, behavioral health and community justice – each of the programs must pass this simple test: it must cost the taxpayer less than if the government provided the service, or cost society more if the service were not provided at all.

The Connection Inc.
10 Middle Street
7th Floor
Bridgeport, CT 06604
(203) 336-1148
info@theconnectioninc.org
http://www.theconnectioninc.org

Other Legacy Sites in Bridgeport

Remington Arms Co. Plant - The Barnum avenue property originally opened in 1867 by the Remington Arms facility saw its peak during World War One. Remington announced it was moving its headquarters from the Bridgeport location to Wilmington, Delaware in 1984 and sold the facility to RemGrit in 1986. Sal DiNardo is majority shareholder of RemGrit and estimates abatement and demolition costs to be approximately $20 million in addition to a $12 million tax bill on the property, which consists mostly of accrued interest. Jon Hancock, of Environmental Engineering Services explains that the site is contaminated with asbestos, mercury and PCBs which are intermingled with the brick, steel and other debris on the site.

Remington Woods – Is adjacent to the former Remington Arms factory complex and was heavily used for ammunition testing by Remington. The area is now owned by Sporting Goods Properties Inc. which is a DuPont subsidiary. Currently a brownfield site, DuPont has agreed to undertake pollution remediation to elevate the space to industry standards. An organization known as “Friends of Remington Woods” which is a project of the Eastern Fairfield County Sierra Group, has organized to lobby for the land to be turned into public open space.

31 Bridgeview Place
Stratford, CT 06614
(203) 375-1284
http://www.friendsofremingtonwoods.org

General Electric Industrial Complex – GE slowly decommissioned the Boston Avenue site, finally ceasing all operations in June 2007. There were initial hopes to refurbish the site for new uses but it was determined the site would not be economically viable for new developers. The land has been assessed at to have a value of approximately $7.2 million by

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21 Remington. Company History.
22 CTPost. RemGrit Buildings Set to Fall. 1 April, 2012.
the city, generating nearly $300,000 a year in taxes. In 2009 GE began extensive remediation of asbestos and hazardous waste on the site in preparation for a deconstruction project which will eventually see all buildings in the complex leveled.  

info@gebridgeportproject.com
(888) 596-3655

Concluding Remarks and Recommendations

There is no reason that the Sierra Club should be portrayed as an organization that costs the United States jobs. The core work of the organization is to fight for public health, sustainable communities, and protecting America’s future. By expanding the push for workforce development and community revitalization, as well as repurposing plants for the benefit of the community, the Sierra Club can further own that message. When plants close, the organization can point to efforts already underway to provide for the jobs of the future rather than clinging to the jobs of the past.

Additionally, while the data should be used for targeting plants for closure and grant applications, it should also supplement that message as well. In the case of Bridgeport, while the plant supports 115 jobs, it is directly responsible for 46 deaths and 94 heart attacks annually, not to mention additional health costs from asthma and other pollution-related illnesses. These are not only economic consequences, but tragic human consequences from clinging to the jobs and energy of the past. Indeed, few people would argue that it is just to weigh preserving jobs over protecting the lives of elderly and young children. Using this information is a powerful tool for providing a true analysis of the costs and the benefits from coal-powered energy.

A final recommendation is that these activities in communities should be strong and sustained efforts. While small short-lived programs may help with the messaging, they are insufficient to accomplishing the project’s goal outlined by the Sierra Club. Alleviating the negative consequences from job loss, advocating for repurposed power plants, and forming partnerships require long-term investments in human capital and financial resources to be successful.

Therefore, the Sierra Club should either invest substantial resources into communities stricken worst by coal plant-closures, or bolster resources to make the necessary investments in these areas. While resources are tight, these investments are not only essential to showing the Sierra Club’s commitment to sustainable economic growth and public health, but also to accomplishing that goal.

Appendix 1: Developing the Targeting Tool

- Data can be used to target future plants for shutdown, based on weights determined by the Sierra Club.\(^{24}\)
  - EPA does this with a number of sectors for targeting (inspections, enforcement actions, etc.)
  - Mining and mineral processing, drinking water systems, currently developing for oil and gas wells
- Applying the model to our full set of data is beyond the scope of this analysis, as the expertise to determine correct weights for categories is not contained in this group
- The example provided below can serve as a blueprint of a way to move forward

For this example, I will use the following weights based on the importance of each category. This model values health impacts of the plants and potential to convert to clean energy as the highest priorities; therefore these variables are given the highest weights. What this ultimately means is that plants with the largest impacts on human health, while also in a good condition to transition to clean energy will receive the highest scores, and thus, be targeted for closure.

- Production/Pollution = 0.10
- Health Impacts = 0.35
- Plant Characteristics = 0.15
- Demographics/Socioeconomics = 0.15
- State Policies = 0.25

Next, we need to assign scores to ranges of the variables; in essence this is creating nominal variables from the continuum of values (for example, the range of SO2 and NOX emissions is very broad with huge numbers. By assigning values, it is easier to manage).\(^{25}\)

- Production/Pollution (0.10) → Total Mercury Emissions (3-yr. avg.): 1 = > 55 lbs, 2 = 56-165 lbs, 3 = 166+ lbs
- Health Impacts (0.35) → Total Deaths Caused: 1 = > 25 deaths, 2 = 26-45 deaths, 3 = 45+ deaths
- Plant Characteristics (0.15) → Age of Oldest Unit: 1 = < 45 years, 2 = 46-59 years, 3 = 60+ years
- Demographics/Socioeconomics (0.15) → % Minority: 1 = > 6 %, 2 = 7-18%, 3 = 19+ %
- State Politics (0.25) → Green Power Purchasing: 0 = “No”, 2 = “Yes”

To show a ranking of plants that should be targeted; I will choose 5 plants and score them based on the weights/model outlined above. The result will be a ranking of plants, 1-5, with 1 being the highest priority (because it is dirty, old, is in a high minority community, transition to green energy is easiest, etc.), and 5 being the lowest.

+ Allegheny Energy Armstrong → 3(0.1) + 1(0.35) + 2(0.15) + 1(0.15) + 2(0.25) = 1.6

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\(^{24}\) Please remember all weights and scores are completely arbitrary; they are based on what I feel could be a potential categorization based on previous research and my experience

\(^{25}\) Again, the expertise necessary is beyond my abilities, so I will provide my best estimates. I will also only be using one variable for each set of characteristics for the purpose of this demonstration; a full analysis would include all of the roughly 40 variables in the data set (or whatever the Club felt should be included).
Edison Homer City $\rightarrow 3(0.1) + 1(0.35) + 1(0.15) + 1(0.15) + 2(0.25) = 1.45$
FirstEnergy Eastlake $\rightarrow 3(0.1) + 2(0.35) + 2(0.15) + 1(0.15) + 0(0.25) = 1.45$
GenOn Midwest/Elrama $\rightarrow 1(0.10) + 2(0.35) + 2(0.15) + 2(0.15) + 2(0.25) = 1.9$
**PSEG Bridgeport** $\rightarrow 1(0.10) + 3(0.35) + 2(0.15) + 3(0.15) + 2(0.25) = 2.4$

Based on this weighting, Bridgeport should be the number one targeted plant for shut-down. The rankings are as follows:\[26\]

1. Bridgeport
2. Elrama
3. Armstrong
4a. Homer City
4b. Eastlake

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26 These rankings do not mean that Homer City and Eastlake should be ignored. They simply show that based on what we consider important (health impacts and ability to transition away from coal), Bridgeport and Elrama should be the top targets.
Works Cited


D. Hufford, personal communication, April 4, 2012.


