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Department of Environmental Protection, Policy Office
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Comments on Pennsylvania Climate Change Action Plan Update

The Center for Coalfield Justice (CCJ) is a Pennsylvania-incorporated, not-for-profit organization with federal Internal Revenue Service §501(c)(3)-status recognition. Over more than 20 years, we have gradually expanded our mission from a focus on longwall coal mining to work on a wide range of issues related to extractive industries in Southwestern Pennsylvania. CCJ's mission is to “improve policy and regulations for the oversight of fossil fuel extraction and use; to educate, empower and organize coalfield citizens; and to protect public and environmental health.” CCJ consists of individual members and is governed by a volunteer Board of Directors. We have nearly two thousand members and supporters, most of whom live in Washington and Greene counties and live with the daily impacts of coal mining, natural gas drilling and hydraulic fracturing activities.

Our comments below address the Climate Change Action Plan Update, which was produced pursuant to the Pennsylvania Climate Change Act (71 P. S. §§ 1361.1—1361.8) that requires the Department of Environmental Protection (“Department or DEP”), in consultation with the Climate Change Advisory Committee, to submit to the Governor a Climate Change Action Plan (“Plan”) that is revised every three years.

I. Greenhouse Gas Inventory and Projections

We are concerned that the greenhouse gas (“GHG”) emissions data relied on in creating the Plan is from 2012. The total GHG emissions calculated for the “residential, commercial, industrial, transportation, electricity production, agriculture, waste management, forestry, and land use” sectors in the Plan were “primarily obtained from the U.S. Environmental Protection Agency (EPA) State Inventory Tool (SIT).” 2015 Draft Climate Change Action Plan (“Plan”) at 19. The Plan explains, “2012 is the latest year with complete data available from the SIT.” Id. Therefore, the Plan does not account for changes in GHG emissions over the last four years. In particular, we are concerned about the
electricity production sector because this sector “has historically been the largest contributor of GHG emissions.” Plan at 28. In Pennsylvania, coal, nuclear, and natural gas are the largest sources of electricity production. Id. The Plan states that in 2012, “coal produced over 79% of the GHG emissions while producing 39.0% of the electricity, natural gas produced 20.6% of the GHG emissions while producing 23.75% of the electricity, and nuclear fuel produced no GHG emissions while producing 33.65% of the electricity.” Plan at 30. However, data from the U.S. Energy Information Administration demonstrates that 2014 and 2015 figures are different.¹ In 2014, Pennsylvania obtained 35.5% of its net electricity generation from nuclear power and 36.1% from coal.² As of December 2015, nuclear power generated 7,266 GWh net electricity, natural gas generated 5,016 GWh, and coal generated 3,689 GWh.³ The Plan’s reliance on data which is four years old and differs from the current energy mix calls into question the accuracy of projections made in this update and the efficacy of the Plan itself as it is based on outdated information. We believe the Plan should build on the data obtained from the EPA SIT and incorporate data from the Energy Information Administration and other sources to create a realistic and up-to-date account of GHG emissions and emission sources in the Commonwealth.

II. Energy

A. Renewable Energy

We agree that “there are immense opportunities for renewable energy in Pennsylvania, such as wind and solar power,” and Pennsylvania should take full advantage of these opportunities. Plan at 38. Accordingly, we support increasing AEPS Tier 1 and Solar requirements, reinvesting in the PA Sunshine Program, creating a feed-in tariff for carbon-free renewables and Re-light PA. We further believe that it is imperative for Pennsylvania to invest in wind and solar storage technologies. Pennsylvania must increase the amount of energy supplied by renewables because the continued use of fossil fuels, such as coal and natural gas, is not sustainable long term and contributes significantly to climate change. Converting to renewable resources for our energy needs will both strengthen energy security and improve human and environmental health. As demand for power from wind and solar energy increases, storage technology feasibility and capacity are critical in order to provide consistent energy from renewable sources. Plan at 44. Additionally, Pennsylvania should provide funding for demonstration and deployment projects in order to more widely deploy energy storage. Id.

² Id.
³ Id.
Pennsylvania must reduce its dependence on fossil fuels in order to become “a leader at combating the causes of climate change.” Plan at 143. The Plan states that “[e]ven when it is assumed that current policy and government commitments around the globe to tackle climate change are all implemented, it is expected that fossil fuels will still account for 75 percent of the world’s energy demand by 2035.” Plan at 137. Assuming that expectation turns out to be true, it does not provide a convincing justification to continue to depend heavily on fossil fuels. An insistence upon continuing down the same path of reliance on fossil fuels with the same inertia that has exacerbated climate change reveals a persistent, willful ignorance of our role in global climate change. The United States, and Pennsylvania specifically, have historically been major producers of GHG emissions. Pennsylvania alone is responsible for 1% of the emissions of greenhouse gases worldwide.\(^4\) That number does not include methane emissions from natural gas drilling, processing, and transportation activities. As a state that has contributed so significantly to global climate degradation, we should reduce our GHG emissions into the future and lead the way in reducing contributions to climate change.

There is data demonstrating that it is unnecessary for us to continue to rely on fossil fuels for our energy needs. A study conducted by Stanford University determined that by 2030 New York State could produce the energy it needs from solar, wind, and water power to meet its power demand for all sectors.\(^5\) The study found that although converting to these sources for energy may increase energy costs at first, the elimination of fuel costs would make up for the initial rise in costs and more.\(^6\) Similarly, another study concluded that by 2030 “carbon dioxide emissions from the US electricity sector can be reduced by up to 80% relative to 1990 levels, without an increase in the levelized cost of electricity. The reductions are possible with current technologies and without electrical storage.”\(^7\) Additionally, researchers at the University of Delaware and Delaware Technical College found that “[r]enewable energy could fully power a large electric grid 99.9 percent of the time at costs comparable to today’s electricity expenses.”\(^8\) In 2014, renewable sources only

\(^6\) Id.
\(^8\) Teresa Messmore, Wind, solar power paired with storage could be cost-effective way to power grid, University of Delaware (Dec. 10, 2012, 8:51 AM), http://www.udel.edu/udaily/2013/dec/renewable-energy-121012.html.
“accounted for 4% of Pennsylvania’s net electricity generation” and only “about 10% of total U.S. energy consumption and 13% of electricity generation.” We have already contributed far more than our proportionate share of GHG emissions to the world’s atmosphere. Now we need to stop hiding behind claims that it is too difficult to switch over to renewables or that other countries may still be using fossil fuels into the future and instead take the initiative to switch over from fossil fuels as expeditiously as possible.

B. Methane Emissions from Natural Gas Operations and Infrastructure

We support reducing methane emissions from natural gas infrastructure. Accordingly, we agree with strengthening DEP’s “comprehensive methane emissions reduction program for the oil and gas industry, regulating air contaminants including VOCs and methane emissions from sources located at well pad and mid-stream operations.” Plan at 48.

The Plan acknowledges that “[l]eaks from natural gas infrastructure are a major source of methane emitted into the atmosphere.” Plan at 47. We are concerned that “Pennsylvania does not currently” require “methane monitoring, leak detection, or measures to control or prevent fugitive emissions from gathering, transmission or distribution pipelines.” Id. However, the task of establishing “best practices for methane monitoring, leak detection and repair aimed at controlling or preventing fugitive emissions from gathering, transmission, or distribution pipelines” was given to the Pennsylvania Pipeline Infrastructure Task Force (“PITF”), a taskforce that is dominated by the oil and natural gas industries. Id. The Public Accountability Initiative ("PAI") conducted a study of PITF in which it found that 23 out of 25, or 92%, of non-government representatives on PITF have ties to the oil and natural gas industries. “Additionally, several government representatives on [PITF], including two aides to Gov[ernor] Wolf, have strong revolving door ties to the industry.” This dominance of industry on the taskforce raises serious questions about its ability to objectively set the best practices for environmental protection. Rather, it is far more likely that the taskforce’s primary concern is saving the oil and gas industry money and will therefore choose the cheapest practices with minimal enforceability.

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12 Id.
13 Id.
Moreover, the “best practices” for curbing methane emissions established by PITF must be enforceable in order to ensure that measures will be taken to prevent methane leakage from natural gas infrastructure. It is not clear whether these best practices would be enforceable or merely voluntary. Furthermore, it seems uncertain whether the DEP would have the funding necessary to enforce these best practices. The Secretary of DEP John Quigley recently admitted to the Senate Appropriations Committee that the DEP “does not have enough staff to meet the needs of any of its programs because of persistent and continuous budget cuts over the last decade.”

We are also concerned about the enforceability of the timelines for repairing well pad leaks. The Plan states, “[o]n well pads, leak detection and repair must be conducted within 60 days after a well is put into production, and annually thereafter, and include the entire well pad, not just the natural gas liquids tanks and piping as required by the EPA for the oil and gas sector. Any detected leaks on well pads in Pennsylvania are currently required to be repaired within 15 days.” Plan at 49. However, it is uncertain whether DEP has enough staff to implement these ambitious timelines considering that DEP is currently having problems “perform[ing] basic functions like evaluating permit applications in a timely fashion.” We are also concerned about the lack of funding for plugging abandoned wells because these wells could be “a significant source of continuing methane emissions.” Plan at 50. However, “there is limited funding available to plug the[se] [abandoned] wells.”

In order to ensure that methane and other emissions are properly controlled beyond the well site, natural gas compressor stations that predate August 2013 must be brought into compliance with the best available technology for emissions control (“BACT”). “[N]atural gas compressor stations that predate August 2013 were permitted under a general permit that included best available technology at the time of permitting. Those compressor stations do not employ what is considered to be best available technology for emissions control today.” Plan at 48. Currently, in Greene and Washington counties there

16 Hess, supra note 13.
are approximately 75-79 active compressor stations.\textsuperscript{17} Almost half (34) of these compressor stations predate August 2013 and therefore do not employ the current BACT. CCJ is very concerned about the effects these compressor stations have on the health of people in our community. One example of negative health effects due to a compressor station is Brigich Compressor Station, which has been operating in Washington County since 2010. Over the years of its operation, residents near Brigich Compressor Station have repeatedly and consistently complained to the Agency for Toxic Substances and Disease Registry (“ATSDR”) about a variety of health effects including “nausea, headache, lethargy, burning and irritation of upper respiratory tract, nose bleeds, stinging eyes, and metallic tastes on the tongue.”\textsuperscript{18} In 2012, ATSDR investigated and analyzed air samples to determine the amount of exposure to various air pollutants that residents living near this compressor station were experiencing. ATSDR concluded that while “exposure to the detected levels of chemicals in the ambient air from residences surrounding Brigich compressor is not expected to harm the health of the general population...some sensitive subpopulations (e.g., asthmatics, elderly) may experience harmful effects from exposures to hydrogen sulfide and PM\textsubscript{2.5}. Some individuals may also be sensitive to aldehyde exposures, including glutaraldehyde.”\textsuperscript{19} One of ATSDR’s recommendations included “reducing exposures to PM\textsubscript{2.5}, carbonyls, and hydrogen sulfide in ambient air by taking steps to control releases from the emission sources of these chemicals to protect the health of sensitive populations living near the site.”\textsuperscript{20} In order to protect public health, all compressor stations must employ the current BACT. We should not be grandfathering in facilities that are only a few years old. It not unreasonable to require compliance with the best available technology for emissions control, especially when the health of sensitive populations is at risk.

CCJ is also concerned about the extensions of periods of temporary operation for compressor stations. During temporary operation, the emissions of new or modified compressor stations are tested. Applicable regulations and current DEP practice appear to allow for multiple six-month extensions of periods of temporary operation before the operating permit is issued.\textsuperscript{21} It further seems that there is no limit to the number of times these temporary operation periods can be extended, thereby allowing GHG and other emissions from compressor stations to go unchecked for years.

\textsuperscript{18} U.S. Dep’t of Health & Human Services, Exposure Investigation 2 (Jan. 29, 2016), www.attdr.cdc.gov/HAC/pha/Brigich_Compressor_Station/Brigich_Compressor_Station_EI_HC_01-29-2016_508.pdf.
\textsuperscript{19} Id. at 33.
\textsuperscript{20} Id. at 34.
\textsuperscript{21} 25 Pa. Code § 127.12b(d).
C. Coal Mine Methane Emissions and Capture

We support capturing methane from coal mines. The Climate Change Advisory Committee created a work plan that “encourages owners/operators of current longwall mines, and of any new gassy underground coal mines that are mined by any method to capture 10% of the estimated total coal mine methane that is released into the atmosphere before, during, and immediately after mining operations.” Plan at 51. However, we believe that owners and/or operators of longwall mines and underground coal mines should be required to capture coal mine methane, not simply encouraged to do so. Capturing only 10% of the methane is a fraction of the emissions these operations are responsible for, considering that there was a total of 9.10 MMTCO2e emissions from “underground and surface coal mining, coal processing, and abandoned underground mines” in 2012. Plan at 26. Mine operators should be required to capture at least half of the estimated methane released by their activities, particularly since coal itself also produces more GHG emissions than other sources while generating proportionally less electricity. For example, the Plan states that in 2012, “coal produced over 79% of the GHG emissions while producing 39.0% of the electricity and natural gas produced 20.6% of the GHG emissions while producing 23.75% of the electricity.” Plan at 30. DEP should launch a program creating methane regulations for coal mines like the regulations they are developing for oil and gas sites, which require a certain amount of methane capture to offset the incredible methane emissions from these operations.22

III. Climate Change Mitigation Strategies

We should not rely on Carbon Capture and Sequestration (“CCS”) and must focus on renewable sources. We are concerned about the reliability and environmental impacts of the methods the Plan supports for CCS. For example, the Plan states that “[o]ne established market for Carbon Dioxide is enhanced oil recovery (“EOR”), which involves flooding oil reservoirs with injected CO2 to displace oil contained within.” Plan at 139. There needs to be further studies of the environmental impacts of this method before it is seriously considered as a viable, feasible option for Pennsylvania. The amount of CO2 leakage caused by CO2 escaping during the injection process should also be considered more comprehensively. Additionally, there is no guarantee that the CO2 will remain sequestered permanently. A study conducted by researchers at the Massachusetts Institute of Technology and partly funded by the U.S. Department of Energy found that most of the CO2

22 Hess, supra note 14.
injected into the Earth escapes back into the atmosphere.\textsuperscript{23} EOR is also an expensive technique and EOR projects have been cancelled in the past because the “associated costs and low returns...are unable to offset the extra costs.”\textsuperscript{24}

Another CCS method the Plan discusses is enhanced coal bed methane recovery. Plan at 141. We are apprehensive about this approach considering its potential to affect mine land remediation projects and result in large accidental releases of methane. The future environmental impacts of this method are unknown; more studies must be conducted to determine the geologic, hydrologic, and ecological consequences of this method. The Plan only cites to one study that was conducted in New Mexico, which is vastly different in terms of geology, hydrology, and ecology from Pennsylvania. It is incorrect to assume that the results of this method in New Mexico will be the same as the results if the method is used in Pennsylvania. Furthermore, this method could result in methane leakage to the surface.

We cannot rely on CCS techniques as a permanent solution. The Plan even expresses doubt about the reliability of these techniques stating, “[c]arbon capture refers to the separation and capture of CO2 from emissions point sources or the atmosphere and the recovery of a concentrated stream of that CO2 that can be feasibly stored, sequestered or converted in such a way as to mitigate its impact as a greenhouse gas. This means stripping the carbon out of the fuel either before or after it is burnt, and burying it in the hope that it will stay where it's put...” Plan at 136 (emphasis added). There is no guarantee that these CSS techniques will be a permanent solution and we should not continue producing massive amounts of CO2 with the hope of relying on these techniques to sequester it. Instead, we should invest in renewable energy technology and storage so we produce far less CO2 emissions in the first place.

IV. Forests and Land Use

We support the preservation of Pennsylvania’s forests and land through forward-looking, protective land use policies. It is imperative to preserve our forests because of their capacity to absorb carbon, provide wildlife habitat, offer aesthetic and recreation value to people of the Commonwealth, and contribute a range of ecosystem services.


The Commonwealth must stop allowing companies to clear-cut forests for coal mining and related activities. The forest plays multiple important roles in Pennsylvania, including providing recreation opportunities to its residents and tourists and keeping the state’s ecosystem healthy and functional. Also, the forestry and land use sector “is very important in its ability to absorb GHG.” Plan at 34. “In 2012, over 34 MMTCO2e of GHG was absorbed in the forestry and land use sector, more than the GHG emissions from the residential, commercial and agricultural sectors combined.” *id*. The market for coal is declining and shows little signs of bouncing back, especially as reserves in Pennsylvania are dwindling; it does not make sense to prioritize coal extraction and related activities over Pennsylvania’s forests. The DEP must provide extra scrutiny for significant timbering and clear-cutting for coal mining activities like strip mines and Coal Refuse Disposal Areas, as well as other surface activities. In Southwestern Pennsylvania, Consol Energy has proposed two new Coal Refuse Disposal Areas that would span about 2,000 acres. Consol’s existing six Coal Refuse Disposal Areas currently occupy about 2,000 acres. If the two new facilities are permitted and constructed, Consol alone will have clear-cut approximately 4,000 acres of land for refuse disposal activities, destroying well over one hundred thousand linear feet of streams, trees, and wildlife habitat. Extensive surface mines in Greene, Washington, and Fayette counties also represent a massive loss of forested land and the ecosystem services that those trees once provided to this region.

We agree that we must restore and repurpose abandoned land mines and other damaged lands. “Pennsylvania’s Statewide Comprehensive Outdoor Recreation Plan 2014-2019 recommends that the commonwealth restore and repurpose brownfields, abandoned mine lands and other damaged lands for recreation and conservation purposes through at least five pilot projects.” Plan at 89. Recreation opportunities provide tremendous value to our communities by giving people a place to exercise or relieve stress. Parks offer places for people to gather and hold social activities, as well as give the community a sense of identity.

The 2005 destruction of Duke Lake at Ryerson Station State Park in Greene County Pennsylvania due to coal mining demonstrates the necessity of restoring and repurposing damaged lands for the health of our communities.25 Ryerson Station State Park is the only State Park in Greene County and one of only a small number of public parks in the area.

Until its destruction, Duke Lake was a pillar of the park and community. Residents and tourists gathered at Duke Lake to swim, fish, and boat. Greene County is one of the poorest counties in Pennsylvania and Ryerson provided a place free of cost with exceptional opportunities for the community to gather and enjoy the outdoors. The community has been deprived of Duke Lake for 11 years and now it will never be restored. Like Duke Lake, Pennsylvania’s forests and parks are major attractions for residents of the Commonwealth, as well as people from other places to visit the state. Indeed, Pennsylvania’s new tourism campaign prominently features and promotes parks and outdoor recreation activities. Restoring and repurposing lands damaged by coal mining and other industrial activities is necessary to encourage tourism and to improve the health of Pennsylvania’s own communities.

V. Waste Management

The Plan fails to take into account coal ash. Coal ash is a toxic coal combustion waste product created by coal-fired power plants. Coal ash “contains contaminants like mercury, cadmium and arsenic. Without proper management, these contaminants can pollute waterways, groundwater, drinking water, and the air.” Coal ash is the “second largest industrial waste stream in the U.S.” It is important to recognize that if we invest in and increase the use of renewable energy, this would decrease coal combustion waste from coal-fired power plants that spans acres, buries streams, destroys wildlife habitat, and pollutes our air and water in perpetuity. Pennsylvania already has the distinction of being home to Little Blue Run, the largest coal ash pond in the United States, spanning 1,700 acres and visible from space, located in Beaver County. The fact that it is unclear whether and how land can be reclaimed to a safe, productive use in the future once it has been used as a coal ash landfill should provide sufficient encouragement to the state to reduce the amount of these sites. Looking into the future, we should be focused on preserving the state’s natural resources, like land, soil and forests, for safe use and enjoyment.

27 Pennsylvania: Pursue your happiness, visitPA.com (March 8, 2016), https://youtu.be/rZUj0HgkBTE.
VI. Legislative Recommendations

We support all of the legislative recommendations in the Plan. In particular, we support the following legislative recommendations: (1) Explore Increasing the Alternative Energy Portfolio Standard; (2) Reinvest in Rooftop Solar; (3) Improve the Act 129 Program; (4) Create a Demand Side Management of Natural Gas Program; (5) Adopt the Latest Energy Codes; (6) Require Change of Ownership Energy Use Disclosure; (7) Continue to Invest in Programs such as “Keystone Help”; (8) Adopt the International Green Code Consortium; (9) Provide Additional Resources for Manufacturing Energy Technical Assistance; (10) Create a Pennsylvania PACE Program and; (11) Expand Funding for TreeVitalize.

Thank you for the opportunity to provide these comments.

Respectfully,

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Legal Director
Center for Coalfield Justice

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1 Thank you to Elana Schnall, Certified Legal Intern at the University of Pittsburgh School of Law, Environmental Law Clinic for her assistance in preparing these comments.