



COMMENTS ON DRAFT 2019 NEW JERSEY ENERGY MASTER PLAN

July 15, 2019

EmpowerNJ, a coalition of more than 80 environmental, community and faith groups, submits the following comments to the Draft 2019 New Jersey Energy Master Plan (the “EMP”).

EXECUTIVE SUMMARY

The Murphy Administration’s EMP commendably takes a more holistic and broader approach to combating climate change than its predecessors. It recognizes that we are far off track in meeting our clean energy goals and bold action is needed. It recommits the Administration to the specific targets and legal requirements of the Global Warming Response Act (80% reduction in GHG emissions by 2050) and for offshore wind, solar, energy efficiency, electric vehicles, and storage between 2020 and 2030, many of which were precedent-setting when announced. The EMP states that “New Jersey must reduce its greenhouse gas emissions immediately and aggressively.”

But the EMP does not offer adequate goals or strategies to accomplish this while other states are doing more. The latest overwhelming scientific consensus dictates that much more needs to be done much sooner than previously realized – we have until 2030, not 2050, to drastically cut greenhouse gas emissions by transforming our energy production and use. Unfortunately, the EMP clearly fails to address this urgent situation.

The Administration must strengthen the final master plan in the following respects and accompany these changed policies with aggressive implementation:

- **The EMP must include a moratorium on all new fossil fuel projects until GHGs are effectively regulated.** Even the State’s existing goals for reducing GHGs cannot possibly be met if New Jersey permits any of the dozen or so proposed fossil fuel projects to proceed. These new projects alone will increase GHG emissions by well over 30%. Fracked natural gas, although currently low in cost, is rapidly being overtaken by lower cost solar/storage solutions. Gas prices have nowhere to go but up while renewable technology costs are going down. New gas projects will stymie renewable energy projects while increasing the real costs to the public and government from rapid climate change. New fossil fuel projects make no economic sense, as they will need to be abandoned before the end of their useful life if we are to achieve 100% clean energy economy wide by 2050. When pressed on the need for a moratorium on these projects, Governor Murphy has responded that he is waiting for recommendations in the EMP. Yet the EMP does not even mention the word moratorium and is totally silent on whether new fossil fuel projects should proceed.

- **The goal of 100% carbon neutral energy by 2050 must be replaced with the goal of achieving 100% clean renewable energy by 2050.** Carbon neutral includes energy from fossil fuel power plants combined with ineffective market based schemes like carbon offsets, pollution credits and other pay to pollute policies. Carbon neutral also includes garbage incineration, the continuation of old and promotion of new expensive nuclear power plants, and more fossil fuel power plants with carbon capture and storage, an expensive technology pushed by the fossil fuel industry that has never shown any commercial or practical viability. These dirty and dangerous energy sources and pollution trading schemes disproportionately impact low income communities and communities of color, while continuing to block progress towards achieving the 100% renewable energy economy we urgently need.
- **The EMP's GHG reduction goals are inadequate to address the immediate emergency we are facing.** While the EMP recommits to the existing legal mandate established in the 2007 Global Warming Response Act to reduce greenhouse gas emissions 80% by 2050, it is now well established that we must move far more aggressively than this. The EMP provides no interim milestones, thus enabling reductions to be delayed. Meanwhile the consequences of climate change are occurring earlier and more rapidly than expected and our fate will be decided by what we do in the next 10 years. The latest Intergovernmental Panel on Climate Change ("IPCC") report and the latest US National Climate Assessment call for rapid and immediate reductions in GHGs: 45% reductions from 2010 levels by 2030 and net zero emissions around 2050. In order to achieve these critical reductions targets our clean energy goals must be strengthened to achieve 100% renewable energy for electricity by 2035 and 100% renewable energy economy wide by 2050. In order to accomplish these aggressive goals we must start with very near term targets, such as 2021, for significant GHG reductions along with subsequent annual targets and a transparent reporting mechanism that credibly leads to the desired final outcome. These are readily attainable goals whose obstacles are mainly political, not technological or financial, when all costs and benefits are considered.
- **GHGs must be regulated to achieve IPCC's 2030 target and GWRA's 2050 mandate.** These pollutants are literally destroying the planet, and the authority to regulate them in NJ currently exists. The EMP not only fails to recognize this, but it tepidly calls for a 6 month delay and then only a "study" of the issue. There is nothing to study in terms of the need or authority to regulate and reduce GHGs here, the only question is the details to be worked out in the rule-making process. NJDEP must immediately begin that process with rules adopted and implemented by the end of 2020 to regulate GHGs with measurable annual targets and a transparent reporting mechanism to achieve economy wide emissions reductions targets of 45% from 2010 levels by 2030 and achieve net zero emissions from all sectors by 2050.
- **The long-term costs of GHGs must be quantified and considered.** The EMP references taking into account short-term increased costs for using renewable energy. While these costs must, of course, be recognized and considered, they must be compared with the long-term total life cycle economic, social and health costs of using fossil fuels. These long-term costs must be evaluated, disclosed and utilized by the EMP in setting policy and subsequently in implementing regulations. The EMP is largely silent on these costs.

- **The State must regulate black carbon, pure carbon particulates, aka soot.** This by-product of burning fossil fuels is a major contributor to climate change and a far more potent climate pollutant than CO2 as well as an ongoing threat to our respiratory health. It particularly affects our most vulnerable communities.
- **The EMP drastically understates the global warming impact of methane released by the extraction, distribution and burning of natural gas.** Over a 20-year period, methane (the primary ingredient in natural gas) is 86 times more potent than CO2 as a GHG. Yet the EMP (a plan for policies over the next 30 years) only considers the impact of methane over a 100-year horizon during which its potency is substantially lower. This drastically obscures methane's near-term effect on climate change by a factor of at least two-thirds, understates the amount of methane emissions occurring today and lessens the emission reductions required by 2030 and 2050. In fact, methane's potency as a GHG and its rate of life cycle leakage (3% to 4%) from gas infrastructures, makes fracked natural gas worse for climate change than oil or coal.
- **Labor's buy-in is essential, practically and politically, to meet the EMP's goals.** The green new economy will create tens of thousands of quality jobs, including in construction and manufacturing. The EMP must include a realistic plan to ensure that these are high quality jobs with workers having the right to organize. The EMP is completely silent on this issue.
- **The EMP admittedly lacks detailed plans and adequate public input** to accomplish its goals. It largely lacks any interim goals and milestones when there should be annual milestones for every goal in the report. While more details will supposedly be in the final plan, this process prevents the public from having a meaningful opportunity to be heard and allows special interests to have undue influence. There must be a substantial opportunity for the public to have input on these details, especially the modeling results from the Integrated Energy Plan, in time to influence the final plan. Given the magnitude of this undertaking, there should be more public hearings and greater geographic diversity in hearing locations than the 3 days and 3 locations currently planned.

Many of the deficiencies in the EMP can be traced back to an apparent unwillingness to offend the natural gas industry and its allies. Relying on natural gas is a bargain with the devil – short term electric bill cost savings at the expense of much greater external costs and long-term survival. The coddling of natural gas must end for the future sake of our children and grandchildren. The EMP must speak truth to power, stand up for New Jersey families and provide for the quickest possible path to eliminating natural gas usage, which is not a bridge to clean energy, but a highway to climate catastrophe, which we must exit.

Governor Murphy has promised many times that guidance and rules for constructing new gas power plants and pipelines/compressor stations would be clearly laid out in the EMP and has used this to deflect criticism and defer action until such time. The draft document completely ignores this subject and is effectively allowing these projects to proceed. With each passing day, it becomes increasingly difficult to achieve the Administration's stated goals. The time to fulfill these promises is now.

I. THERE MUST BE AN IMMEDIATE MORATORIUM ON ALL NEW FOSSIL FUEL PROJECTS

The failure to impose an immediate moratorium on new fossil fuel projects means, quite simply, that the EMP's goals for reducing GHGs will not be met. These goals will be difficult enough to achieve as is; they will be impossible to achieve if we continue to make the problem worse.

EmpowerNJ's February 2019 report, *Fighting Climate Change In NJ: The Urgent Case for a Moratorium on all Fossil Fuels* (the "Empower NJ Report"), details how we will be unable to reach our goals of reducing GHGs and clean energy without a moratorium. The Empower NJ Report is available at empowernewjersey.com. The facts set forth below are detailed more fully with full supporting citations in that Report.

When the EmpowerNJ Report was issued, there were 12 new fossil fuel projects (eight pipeline/compressor station projects, four power plants), in various stages of planning and execution. The Report undisputedly showed that if those 12 projects (plus one power plant that started operation in mid-2018) became operational, they would increase GHG emissions by approximately 32 million metric tons per year. To put this in context, New Jersey's total GHG emissions from all sources in 2015 were about 101 million metric tons. These new projects would increase total GHG emissions by approximately 30 percent. Operation of these five power plants would increase emissions from electricity generation by approximately 76%.

Since the issuance of the EmpowerNJ Report, a few of these projects have stalled. The NJDEP air quality permit process is on hold while developers of the Meadowlands power plant make changes to their design; Governor Cuomo and then Governor Murphy have each denied **without prejudice** a permit for a NESE pipeline running through Raritan Bay; and the B.L. England power plant and the South Jersey Gas pipeline that was to service that plant are not, for the moment, going forward. But most outrageously, construction continues to commence for the Southern Reliability Link (SRL) in the Ocean County sections of the gas line, despite ongoing litigation. The SRL route, which goes straight through the Pinelands, is currently only being blocked by a lack of Burlington County road permits.

But none of these projects are dead. The Williams Transco NESE pipeline project has already re-submitted their permit application to the NJDEP. Since February, two new fossil fuel projects have been revealed: a 104-140 MW gas fired plant in the Kearny Meadowlands and the development of a deep-water port for the overseas export of liquified natural gas from Gibbstown, Gloucester County through the Delaware River, a proposal that was outrageously kept secret for the last two years.

NJ Transit's \$526 million transit grid powerplant in the Meadowlands would be located in a flood plain area and would instantly become one of the top 15 polluters in the state emitting up to 576,757 tons of CO2 each year. It will burn fracked gas for decades, spewing pollutants in an area of Hudson County that has a failing grade from the American Lung Association for ozone levels and already suffers from some of the worst air pollution in the nation. To our knowledge, NJ Transit, the proponent of this ill-conceived project, never considered whether its resiliency needs could be met through renewable energy sources and energy storage.

These are the new fossil fuel projects currently in planning, with more undoubtedly on their way:

Pipeline and compressor projects:

- PennEast Pipeline
- Northeast Supply Enhancement (aka NESE) (Somerset and Middlesex Counties and The Raritan Bay)
- Southern Reliability Link (Pinelands)
- Garden State Expansion Project (Bordentown, Chesterfield)
- Gateway Expansion Project (aka Roseland Compressor Station) (Roseland and Paterson)
- Rivervale South to Market (Bergen, Hudson Counties and Meadowlands)
- Lambertville East Expansion (Lambertville)

Gas-fired power plant projects:

- North Bergen Liberty Generating Station (aka Meadowlands Power Plant) (North Bergen)
- Phoenix Energy Center (aka Highlands Power Plant) (Holland Township)
- Keasbey Energy Center (Woodbridge)
- NJ Transit Meadowlands Power Plant (Kearney)

Liquified Natural Gas

- LNG Port (Gibbstown)

Without a moratorium, the State will be left to playing an indefinite game of whack a mole with the fossil fuel industry and its lobbyists.

The proposed projects would distribute and burn natural gas, which consists primarily of methane. As detailed below, methane is 86 times more efficient at trapping heat than CO₂ over a 20-year time frame. Methane leaks occur at all stages of the gas process extraction/production, gathering, processing, transmission, storage, local distribution and consumption). Methane is a far more potent GHG than CO₂, especially under the shorter timeframes the EMP should be considering. Contrary to popular perception, producing electricity from fracked gas is worse for climate change than coal or oil. Methane leakage along the gas supply chain more than doubles the lifecycle emissions of gas compared to counting emissions only from gas combustion. A 2011 Cornell University study, comparing GHG potency, showed that fracked gas is worse than coal and worse than oil. Fracking lends itself to more leakage because it takes more time to drill the well, requires more venting and produces more flow-back waste.

Each new interstate transmission pipeline from the Appalachian Basin will spur new gas production. An analysis by the Delaware Riverkeeper Network showed that the PennEast pipeline would likely result in the drilling of at least 3,000 new fracked gas wells in Pennsylvania. New gas infrastructure is likely the absolute worst form of energy production in terms of GHGs and climate change.

The new fossil fuel projects, with expected 30 to 40 year lifetimes, would also have other deleterious effects on the environment and the health of New Jersey residents for decades. The damage to the environment and residents' health, premature death rates and associated financial burdens would last long after these facilities are closed.

The U.S. National Climate Assessment also puts a renewed emphasis on the impacts of other atmospheric pollutants like ozone, smoke, and black carbon which cause respiratory problems and lead to premature death. The report notes with “high confidence” that climate change will increase ozone levels. Most of Northern and Central New Jersey already have an “F” grade from the American Lung Association for ground level ozone pollution, which would only increase by approving new gas infrastructures such as the proposed Transgrid power plant in the Meadowlands. Altogether, new fossil fuel projects, especially power plants and compressor stations, will significantly increase the volume of ozone and HAPs (Hazardous Air Pollutants) in New Jersey.

To achieve the State’s existing (and inadequate) GHG reduction goals, **the EMP must, at a minimum call for an immediate moratorium on all new fossil fuel infrastructure projects until rules, procedures and plans are implemented to regulate and reduce GHGs emissions to meet IPCC’s 2030 and 2050 targets.** Governor Murphy has an enormous and immediate opportunity to be a climate change leader and protect the health and welfare of the residents of the State by using his authority to stop new fracked-gas infrastructure projects. This opportunity cannot be wasted.

II. CLEAN ENERGY AS DEFINED IN THE EMP IS NOT CLEAN ENERGY

When is clean energy not really clean energy? The unfortunate answer is in the EMP. The EMP redefines clean energy as “carbon neutral” energy. This has serious negative consequences for our health, environment and economy and critically undermines our ability to transition rapidly off fossil fuels to avert the worst case scenarios of runaway climate catastrophe.

Clean energy is typically defined and should be defined as energy derived from 100% wind, solar, energy efficiency, small scale hydro and geo-thermal sources. Carbon neutral energy, by contrast, means that carbon will still be released via energy production. Under the EMP, New Jersey can continue to produce electric power from polluting sources like natural gas, fossil fuel plants with carbon sequestration, nuclear power plants, trash incinerators and dirty biomass for decades to come. It also leaves the door open to carbon credits and offsets, dangerous “pay to pollute” schemes that undermine our ability to regulate and reduce pollution at the source. Redefining clean energy as carbon neutral will mean existing dirty energy power plants will continue to operate indefinitely and new ones will be built.

Many of the State’s dirtiest power plants also operate in low income communities of color. Allowing these facilities to continue operating and polluting for decades to come contradicts Governor Murphy’s commitment to environmental justice in Executive Order 23, where he states that all residents, regardless of race, ethnicity, color, nation of origin or income, have the right to live and work in a healthy and clean environment.

Calling for 100% “carbon neutral” energy is a critical failure of the draft EMP, and represents a major step backwards from the Governor’s previous commitment in Executive Order 28 to achieve 100% clean energy.

III. THE EMP'S GOALS ARE NOT AMBITIOUS OR IMMEDIATE ENOUGH

Climate change is accelerating and occurring earlier and more rapidly than was ever expected, including since the preparation of the EMP began.

The latest overwhelming scientific consensus dictates that much more needs to be done much sooner than previously realized. The latest IPCC report and the latest US National Climate Assessment call for rapid and immediate reductions in GHGs: 45% reductions from 2010 levels by 2030 and net zero emissions around 2050. We have, in short, until 2030, not 2050, to drastically cut greenhouse gas emissions by transforming our energy production and use.

New Jersey is also one of the States most at risk from climate change, as is evident from the devastating and still ongoing impact from Superstorm Sandy. “Since 1900, global average sea level has risen about 8 inches. In New Jersey, sea level has risen even greater – about 1.4 feet over the same period,” (source: “How High Will the Sea Rise Along Our Precious Shore,” Robert Kopp, Karl Nordstrom, Johnny Quispe, Star Ledger, June 23, 2019, D4). A recent report from the Union of Concerned Scientists stated, “Of the roughly 14,000 commercial properties at risk on U.S. coasts within the next 30 years, more than one-third are in Florida and New Jersey.”

Governor Murphy also prides himself on being the most progressive governor in the country. Recently, NJDEP Commissioner McCabe indirectly made the case for GHG regulation when she announced the need for a statewide resiliency program, as part of a climate-change strategy plan for the entire State. The leaders of the Legislature assert that they too are climate change leaders.

Given that New Jersey has and will suffer disproportionately from the climate crisis and our governmental leaders recognize the urgency of the climate crisis, the EMP's goals should be the most ambitious in the nation. They aren't and are even hypocritical to some degree given the Murphy Administration's criticism of the Trump Administration. The EMP's goals are not nearly as ambitious as many other states with respect to either reducing GHGs or replacing fossil fuels with renewable energy at the earliest possible time. Time is everything in the battle against climate change.

Consistent with the 2007 GWRA, the EMP calls for a 50% Renewable Portfolio Standard (“RPS”) by 2030 (Goal 2.1.1) and that a “significant majority of electric distribution be produced from renewable sources by 2050” (Goal 2.1.2). The EMP also states that as a member of the U.S. Climate Alliance, New Jersey “aims,” not mandates, that emissions be reduced by a relatively paltry 5.6% by 2025 from its current levels. (P.14).

These goals clearly fail to address this urgent situation.

Other states have already surpassed our efforts. Here are some examples:

- Hawaii: 100% renewable energy by 2045.
- New York: 70% of statewide electric generation from renewable energy systems by 2030 and zero emissions (100% carbon free) by 2040. New York has also set higher targets for GHG reductions than New Jersey. It plans to reduce GHGs as a percent of 1990 levels by 40% by 2030 and 85% by 2050.

- New Mexico: 100% carbon-free electricity by 2045, with at least 80% from renewable energy by 2040.
- Washington: Utilities must be 100% carbon-neutral by 2030. 80% of their power must come from “nonemitting electric generation and electricity from renewable resources.” By 2045, all utilities must be self-generating 100% clean energy.
- California: 100% carbon-free electricity by 2045, with 50% from renewables by 2026; 60% from renewables by 2030, and 100% carbon-free energy by 2045. All new construction must have solar power.
- Nevada: 50% of electricity from renewable resources by 2030 and 100% carbon-free (zero carbon dioxide emissions) resources by 2050.
- Colorado: Large utilities to achieve an 80% reduction in CO2 emissions below 2005 levels by 2030 and be 100% carbon free by 2050. Colorado has also set aggressive targets for GHG reductions. It plans to reduce GHGs as a percent of 2005 levels by 26% by 2025, by 50% by 2030 and by 90% by 2050.

Other states and cities, recognizing the irrationality and absurdity of continuing to build new fossil fuel infrastructure while planning GHG reductions, have taken action (in one case a complete moratorium) without waiting for a new energy master plan to stop the construction of these projects. Two examples are:

- Arizona: State regulators extended a moratorium until August 2019 (originally put in place in March 2018) on new natural-gas power plants with capacities of 150 megawatts or greater. The purpose of the moratorium was to give the Arizona Corporation Commission time to study a plan that calls for 80% clean energy by mid-century.
- Los Angeles: The City through Mayor Eric Garcetti’s leadership directed the Los Angeles Department of Water and Power to not upgrade three coastal gas-burning power plants with new gas technology but to replace them with an array of renewable energy sources and storage.

The EMP further states, “the state must also model, assess, and implement ways to minimize reliance on natural gas as the state transitions,” without proposing much of anything to accomplish this. The EMP must recognize that natural gas is not a bridge to a clean energy future, but a highway to a climate catastrophe. It not only fails to recognize this, but repeatedly refers to fracked gas in neutral to favorable terms, calling it a “bridge” fuel, which will remain a predominant electricity fuel source. We need to end, not minimize, our reliance on natural gas in the quickest possible time and immediately stop all new fracked gas projects.

We must be more ambitious with respect to reducing GHGs. The EMP’s final goal should match the IPCC report mandate: zero carbon emissions by 2050. Hawaii has already mandated this. This is in line with A1823/S1045 which provides that by 2035 all electric power should be generated from renewable energy sources. Further, we must mandate annual GHG reductions to achieve the IPCC target of 45% reductions economy wide by 2030, and net zero emissions economy wide by 2050.

IV. GREENHOUSE GASES MUST BE REGULATED

The EMP is not shy, sometimes, in calling for needed legislation and/or regulation. For instance, it includes as one of its goals the exercise of “regulatory jurisdiction to review and approve the need for transmission projects” (Goal 5.2.1). It proposes doing so by “(e)xercising regulatory jurisdiction with new legislation.”

Inexplicably, the EMP does not do the same when it comes to meeting what should be a more important goal: reducing GHGs, “immediately and aggressively,” (the same terms it uses to describe other less important goals). Instead, the EMP’s goals are to “**explore** regulatory authority to achieve 100% clean energy by 2050.” (2.1.4). and “[b]egin stakeholder engagement to **explore** rules to limit CO2 emissions from electric generating plants... in the coming months (2.1.9)”

These tepid goals do not square with the urgency of the climate crisis. Elsewhere in the draft, the EMP appears to recognize that the authority already exists to regulate CO2 as an “air contaminant” under the Clean Air Act and the New Jersey Air Pollution Control Act. (see page 14). But to the extent there is any doubt about that authority, the EMP must call for “exploring regulatory jurisdiction with new legislation” so that the State can begin to regulate the pollutants that are destroying our future and apply a rigorous climate test for all new projects in the State.

The EMP should call for these specific steps to be taken:

- Establish rules pursuant to the Clean Air Act (Title V), the GWRA and the NJ Air Pollution Control Act that place limits on GHGs, require applicants for all new energy projects to conduct a comprehensive alternatives analysis of renewable energy technologies to meet the proposed project need, and enable the DEP to reject permits for projects that would cause New Jersey to exceed GHG and other pollution limits, and to select the least polluting project alternative to move forward.
- Reverse NJ and DEP policy that allows polluters to purchase ground level ozone credits, which today allows virtually unlimited production of ozone precursors even in areas of the State that exceed ozone attainment levels and are already rated as ‘F’ by the American Lung Association.
- Update the DEP rules regarding air deposition of pollutants in order to allow rejection of permits that would increase water pollution beyond specific limits.
- Remove the cost cap on renewable energy projects, which does not exist on other energy sources.
- Reverse Governor Christie’s rollbacks of regulations on flood hazard rules, water quality management planning rules, the Coastal Area Facility Review Act, Wetlands and Storm Water Management rules that make it easier to build pipelines and other developments in the Highlands and Pinelands, near water resources and other sensitive environmental areas.
- The State’s permit and regulatory processes must require both short and long term economic, social, health and total life cycle costs of burning fossil fuels be calculated, disclosed and utilized. It is, as the EMP recognizes, appropriate to be “sensitive” to increases in short term costs. But that is only part of the equation. Short term costs must be balanced against the far greater societal, environmental and economic costs of using fossil fuels.

- The EMP is largely silent about those costs and the final plan should include a robust means of calculating them.

V. THE STATE MUST REGULATE BLACK CARBON, PURE CARBON PARTICULATES, A.K.A. SOOT

This by-product of burning fossil fuels is a major contributor to climate change and a far more potent climate pollutant than CO₂ as well as an ongoing threat to our respiratory health. It particularly affects our most vulnerable communities.

In New Jersey, diesel powered vehicles and equipment, natural gas and coal plants are the largest sources of Black Carbon. Black Carbon (soot) is a highly potent warming agent and second largest contributor to climate change after CO₂. Unlike CO₂, soot only stays airborne for days or weeks, not decades; but the damage soot does is huge and permanent. When soot lands, it blankets the earth's surface and absorbs heat - making it the primary reason why glaciers and arctic ice are melting so fast.

Black carbon is also recognized by the World Health Organization as a human carcinogen. When it lands in our lungs, it causes premature death from cancer, respiratory disease, asthma, heart attacks, and strokes. This is especially true in communities of color and low income neighborhoods (environmental justice, EJ, communities) where industrial operations and NJ's ports, the largest on the East Coast, are concentrated.

Over 18,000 trucks go in and out of Port Newark/Elizabeth every day. Electrification of the goods movement is essential to mitigating climate change in the next ten years, as well as protecting the well-being of the local residents and drivers who breathe dirty diesel port and highway fumes every day. NJDEP already has the power to regulate short lived substances, like Black Carbon and Methane, as well as longer lived CO₂; but has yet to do so.

The Energy Master Plan and companion policies mention equity, but offer few specific remedies to this injustice. The State of NJ must establish immediate mandatory reductions of climate changing substances and their co-pollutants within EJ communities, as well as designate a significant portion of future climate mitigation benefits, funds, and programs to these same communities who have long suffered the harms of polluting facilities.

VI. THE EMP DRASTICALLY UNDERSTATES THE IMPACT OF METHANE

The EMP drastically understates the global warming impact of methane released by the extraction, distribution and burning of natural gas.

The EMP recognizes that methane is a cause of the climate crisis, but its brief discussion hardly begins to address the problem. In Goal 5.4 regarding the replacement of leaking pipelines, the EMP states:

Methane is the primary component of natural gas and a greenhouse gas with 25 times the potency of CO₂ over a 100-year period. Eliminating methane leaks from the state's gas distribution system is crucial to meeting the 80x50 greenhouse gas emission reductions. Further, methane leaks present additional safety concerns.

Pipeline leaks are only part of methane's lethal contribution to our climate change emergency; methane is produced from the extraction and burning of natural gas. By only considering the impact of methane over a 100-year horizon, especially when its planning horizon is much less than 100 years, the EMP drastically obscures methane's real effect on climate change in the near term by a factor of at least two-thirds, understates the amount of methane emissions occurring today and lessens the volume of reductions required by 2030 and 2050.

Methane remains in the atmosphere for 8-12 years before it is broken down into CO₂. During this period, methane is **104 times** as effective in causing global warming than CO₂. After methane converts to CO₂, it continues to power global warming. If the global warming power ("GWP") of methane in its ten years of life is averaged over twenty years and compared to the power of CO₂ over those same twenty years, (GWP₂₀), methane is **86 times** more potent than CO₂. It is only over the largely irrelevant 100-year horizon, that methane drops to having a potency of 25 times that of CO₂. A 100 year time frame fails to account for over 70% of the impacts of methane emissions over the next crucial ten years.

The IPCC Report implicitly criticizes the use of a 100 year time horizon stating: "*There is no scientific argument for selecting 100 years compared with other choices. The choice of time horizon is a value judgment because it depends on the relative weight assigned to effects at different times.*" Effectively, the IPCC is saying that the timeframe of an analysis should dictate the use of the GWP value. Using a GWP₂₀ factor, methane can be seen to be responsible for 30% of GHG emissions in the U.S. in 2017. Assumptions and data in any plan must correspond to the time period of the plan or else the results are distorted. Because the purpose of the EMP is to "guide New Jersey through the next 30 years" (p.12), this also must be the outside time frame for measuring methane's impact. This is also the time we have to avoid climate catastrophe.

All credible climate authorities say that the future of our living earth will be decided by what happens in the next thirty years with reductions in the first decade being the most important. Writing numbers on a piece of paper to minimize the problem or imply objectives are being met when this is not the case, does not change the physics of the atmosphere.

VII. THE EMP MUST INCLUDE A STRATEGY FOR REQUIRING HIGH QUALITY JOBS

The EMP must include, as a goal, that the tens of thousands of new green energy jobs be high quality jobs with workers having the right to organize.

Many unions now recognize we are in a climate emergency, the solution to which, will also create hundreds of thousands of new, high quality jobs. The Service Employees International Union ("SEIU") is one of the largest and fastest growing unions in the country. One of its recent and successful campaigns was organizing airport workers and obtaining a living wage for them. SEIU is an enthusiastic proponent of the Green New Deal. So are many local AFL-CIO chapters.

Other unions, particularly the construction unions, are fearful of losing higher paying construction jobs to lower paying non-union jobs in the renewable energy industry. This need not happen. First, there are far more jobs in building a 100% renewable, efficient, and resilient 21st century energy economy than those in the fossil fuel industry and many of them are already middle class jobs. Second, the State can develop a combination of policies that keeps workers in the middle class. This can be accomplished through a multi-prong approach of job training and placement for all impacted workers, expanded unemployment benefits including healthcare coverage for impacted workers and a state (and eventually federal) insurance fund to cover the pay gap for any workers who see their pay decrease through their job transition. Unfortunately, the EMP ignores this issue and the concerns of the construction trades which leads to their strong support for fossil fuel projects.

The EMP does recognize that combating the climate crisis will “generate considerable job-creation and economic benefits.” It correctly calls for training and apprenticeship programs (Goal 7.2). However, the final EMP must include strategies ensuring that the new green economy jobs are high quality jobs with the right of all workers to organize and unionize. This is both the right thing to do and is needed to obtain political and public support for the EMP’s goals.

VII. THE PUBLIC MUST BE GIVEN AN OPPORTUNITY TO HAVE INPUT ON THE FINAL PLAN

The EMP lacks detailed plans and adequate public input to accomplish its goals. It largely lacks any interim goals and milestones when there should be annual milestones for every goal in the report. While more details will supposedly be in the final plan, this process prevents the public from having a meaningful opportunity to be heard and allows special interests to have undue influence. There must be a substantial opportunity for the public to have input on these details, especially the modeling results from the Integrated Energy Plan, in time to influence the final plan.

Given the magnitude of this undertaking, there should also be more public hearings and greater geographic diversity in hearing locations than the 3 days and 3 locations currently planned.

Respectfully submitted,

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