SOME KEY TAKEAWAYS

From a New Report Issued by the Energy Task Force of the Allegheny Conference on Community Development

OUR REGION'S ENERGY FUTURE: a strategy for accelerating decarbonization, investment and inclusive growth in the Pittsburgh region

Establishing a Baseline/Where We Are Today

- Energy and Energy-Intensive Sectors are significant contributors to the diverse economy of the Pittsburgh region. In 2019, the Energy Sector[1] and Energy-Intensive Sectors[2] represented 24% of gross regional product (GRP) and 14% of regional employment.[3]
- These industries are more concentrated here than in competing regions. For much of our history, the region has been a net exporter of energy. Pennsylvania exported more megawatt hours of electricity in 2021 than any other state, exporting 35% of the electricity it generated.[4]
- All of this contributes significantly to GHG emissions. On a per capita basis, emissions are approximately 50-55% higher in southwestern Pennsylvania than in the state or the nation as a whole.[5] The largest drivers of the per capita difference are power emissions (coal and natural gas) and industrial emissions (coal mining, iron and steel production and oil and gas extraction).
- The industrial and power sectors make up 76% of emissions. The top five sources of total emissions were: coal power (25%); natural gas power (14%); passenger vehicles (11%); coal mining (9%); and iron and steel manufacturing (9%).
- The energy, industrial and transportation activity that produces much of our region's GHG emissions also provides employment and economic opportunity, especially outside Allegheny County. Beaver, Greene and Indiana counties rely the most on the energy sector for jobs and GRP.

As we think about the Energy Transition, we must address the impacts of the economic and workforce transition at the same time. ***It is critical that no one and no community be left behind. Success will require public policy interventions, significant investment in upskilling and improved connectivity to make sure workers and communities can access new opportunities being created.***

[1] The Energy Sector includes coal extraction and distribution; oil and gas extraction and distribution; and power generation and transmission.
[2] Energy-Intensive Sectors include mining (except coal); manufacturing; transportation; construction materials such as concrete and asphalt; data storage; and crop and animal production.
[3] Source: Moody's Analytics, Bureau of Labor Statistics 2019; PA Department of Labor and Industry Center For Workforce Information and Analysis 2019.
[4] Pennsylvania Electricity Update, Independent Fiscal Office, March 2022.
[5] Source: Decarbonization Scenario Explorer Tool, Pennsylvania Department of Environmental Protection, US Environmental Protection Agency, IPCC.

Establishing a Baseline/Where We Are Today (continued)

Progress is possible and is happening every day. In 2007, the recent peak of power sector carbon dioxide emissions, Pennsylvania generation increased by 7%, but carbon emissions declined by 37%, due to the significant shift from coal to natural gas in the state's electricity generation mix.[6] From 2005 to 2016, Pennsylvania ranked second out of all fifty states in reduction of greenhouse gases. In 2018, CO_2 emissions from fossil-fuel fired power sources were 33% below 2005 levels, and CO_2 emissions reductions from Pennsylvania power and industrial sources already have exceeded the Governor's goal of a 26% reduction from the 2005 baseline by 2025.[7]

Where We Are Headed

Decarbonization is one action we can take to maintain the economic competitiveness of the Pittsburgh region, improve our attractiveness to industries seeking solutions and meet the climate challenges posed by GHG emissions. If we do nothing, the region is likely to match the current U.S. trajectory, which will fall short of what has been estimated to be required in the U.S. to avoid potentially dangerous global climate changes. This would make our region less and less attractive for global investment. **If we act now, we become more competitive for capital investment and job creation.**

Decarbonization was modeled to identify three pathways forward:[8]

1. Current U.S. trajectory that points to a 2.5-3.5°C global warming by 2050;
2. **A mid-point GHG** emissions pathway that points to a 2°C warming; and
3. An intensive pathway as laid out in COP26 and other venues that points to a 1.5°C warming.

A Strategic Vision/Six Interdependent Levers

The pursuit of the "mid-point pathway" makes the most sense for the Pittsburgh region within the projected timeframe, balancing carbon reductions and economic growth. The **goal of the strategy should be decarbonization, but the deployment of the strategy should bring strong economic benefits to the region**, making it more attractive for business investment and job creation across a variety of industries. Three primary criteria informed development of this strategy's vision: **equity, GHG emissions reductions** and **viability**.

To achieve decarbonization, the region will need to engage six strategic "levers" which will each contribute to reducing CO_2 emissions.

- **Lever 1** – develop low-carbon energy and grid improvements
- **Lever 2** – deploying carbon capture and storage
- **Lever 3** – preventing methane emissions
- **Lever 4** – electrifying transportation
- **Lever 5** – developing hydrogen
- **Lever 6** – increase building efficiency and electrification

[6] Pennsylvania Electricity Update, Independent Fiscal Office, March 2022.
[7] EPA Clean Air Markets Division data for 2018 and 2025.
[8] Source: Decarbonization Scenario Explorer Tool, Pennsylvania Department of Environmental Protection, US Environmental Protection Agency, IPCC.

A Strategic Vision/Six Interdependent Levers (continued)

We have long-standing and, in some cases, globally leading expertise in each of these six strategic areas. Two may provide unique comparative advantages for the Pittsburgh region that can propel our economy as well as improve our environment.

- The region's geology and natural resources provide opportunities to create carbon capture, utilization and storage (CCUS) and hydrogen hubs essential to low-carbon manufacturing and transportation.
- Almost 150 years of innovation in electrical distribution and commercial nuclear energy position southwestern Pennsylvania to provide solutions to improve the resilience of the electric grid and deploy low-carbon power generation sources.

> *"Moving a low-carbon energy transition strategy forward for the region will require a groundswell of support, and the Allegheny Conference – a long-standing convener of regional public and private partners – is at the ready to catalyze this movement. The buy-in of stakeholders across diverse interests will be key, as will a common understanding of the vision and what it will take to achieve it. Together, we must also create the right policy and regulatory environment to support the safe, equitable and expedited deployment of decarbonization, as well as secure government funding to advance solutions driven by new technologies, a ready workforce and a network of critical infrastructure."*
>
> – Stefani Pashman, CEO, Allegheny Conference on Community Development

Positive Economic Impact

Decarbonization can make the Pittsburgh region more attractive to investment by industry. The Gross Regional Product, value chain and workforce impacts along the mid-point path to decarbonization will have a stronger job and economic effect than the current trajectory.

- Industrial sector employment will grow as global demand rises for materials and machinery needed to transition to a net zero economy. **Installation and maintenance and sales occupations** will be in demand. After 2030, employment for the regional decarbonization pathway is higher than the current trajectory.[9]

[9] Regional Energy Strategy.

Moving Forward – Next Steps

Six primary enablers have been identified as necessary to accelerating the region's energy transition:

1. **First movers are the regional leaders who will drive implementation of decarbonization levers at scale** (e.g., CCUS, hydrogen and nuclear power). They will influence regional stakeholders to take critical enabling actions.
2. **Stakeholder education and support will be needed to gain support for decarbonization levers and the associated infrastructure footprint.** Messaging and communications must be developed with stakeholders across diverse interests.
3. **Competitive statutes, policies and regulations at local, state and federal levels must be implemented** to aid safe, equitable and expedited deployment of decarbonization solutions, particularly regarding hydrogen generation and transport and CCUS.
4. **Government funding will be essential** to finance build-out of critical decarbonization infrastructure (e.g., CCUS hub).
5. **New workforce development initiatives are required** to develop talent and transfer regional skills from legacy industries to emerging opportunities.
6. **An interdependent network of infrastructure across multiple technologies** (e.g., CO_2 pipeline, CCS, EV charging and solar installations) must be built.

The Allegheny Conference has a role to play in many of these enablers. But for greatest positive effect, the organization's leadership and involvement along with that of many partners will be needed.

The energy transition is critical to the future competitiveness of the Pittsburgh region, and it will require collaboration among government, industry and academia to fully realize our potential. Much as our region became known worldwide for environmental transformation in the middle of the 20th century and economic transformation soon after the turn of the century, we can establish leadership in energy transformation in the 21st century, and position ourselves to compete in the cleaner, lower-carbon world to come.

> *"As a manufacturing and technology hub with an abundance of natural gas, our region is uniquely positioned to help advance the energy transition. We have an opportunity to better leverage our legacy economy by recognizing natural gas, hydrogen and other assets as part of the solution. More broadly, we have an opportunity to take what some may view as weaknesses and turn them into strengths that can help advance the energy transition not only for our region, but for the country."*
>
> – Bill Demchak, Chairman, President and CEO, The PNC Financial Services Group, Inc.

"Pittsburgh once again finds itself primed for a new era of innovation, resilience and collaboration. As the region's electric utility, Duquesne Light Company plays an essential role in building a clean energy future for all through the advancement of electrification; modernizing and strengthening the electrical grid; and energy diversification. By partnering across all sectors, we can be successful in this transition and secure a more equitable, healthier future while positioning our region for long-term economic growth and workforce development."

– Kevin Walker, President and CEO, Duquesne Light Company

"The Pittsburgh region is ripe with potential to become a leader in decarbonization as it relates to cleaner energy, jobs and economic growth. Carbon Capture and Storage (CCS) will play an essential role in reducing carbon emissions and even removing carbon already in the atmosphere. These are investments that will transform southwestern Pennsylvania's economy. There is no better time than now for immediate action and extensive collaboration between all segments of society – including elected officials, NGOs, academia, investors, industry, labor and the energy sector – to accelerate the creation of our collective low-carbon future."

– Hilary Mercer, Senior Vice President, Shell Polymers/Pennsylvania Chemicals Project

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