

45V & CMM – Executive Summary

Pathway to Hydrogen Economy in the Southwestern Pennsylvania Region

With updated 45V guidance, opportunities abound for our region's economy, communities and workforce

Why Hydrogen Matters:

- Hydrogen is widely recognized as the most effective way to reduce emissions from hard-to-abate sectors, especially from heavy industries like steel, transportation and cement manufacturing.
- Blue hydrogen production, which uses natural gas as a feedstock complemented by carbon capture and sequestration, creates a strong economic value proposition for capturing Coal Mine Methane (CMM), turning an once problematic byproduct into a valuable commodity.
 - This opportunity is critical for Southwestern Pennsylvania (SWPA); it addresses the region's desire and need for economic growth and environmentally responsible energy sources, and it leverages competitive strengths: unique feedstock, unparalleled technology that captures fugitive CMM, a skilled workforce, robust public-private partnerships, and all the logistical ingredients to **make the region the leader of the new hydrogen economy**.
- Southwestern Pennsylvania, and the commonwealth as a whole, cannot develop a viable hydrogen economy without the full 45V hydrogen production credits, which are key to making hydrogen efforts economically feasible.
- Currently, the U.S. Department of Treasury's proposed guidance on the 45V tax credits is overly restrictive, presenting a real risk to our environmental and economic future. Attempts to adjust negative carbon intensity scores for feedstocks like CMM in the GREET (Greenhouse gases, Regulated Emissions, and Energy use in Technologies) model go directly against the robust scientific assessment of what is best for the climate.
 - The intent of the Inflation Reduction Act was not to box out fossil fuels/fugitive methane from participating in these opportunities.
 - Doing so **excludes SWPA**, which suffers from high industrial emissions, from the most viable solution to address its climate challenges.
- The time to make the updates to the 45V guidance is now – our region's energy future depends on it.

Guidance Updates Required to Move Our Region Forward:

1. **Include the feedstocks and technologies – like CMM – in the guidance for our region to be able to realize the opportunities of 45V.**
 - Ensure GREET R&D model analysis for CMM translates to GREET H2 model and final guidance for fugitive methane.
2. **Eliminate the first productive use and incrementality requirements for the production of clean hydrogen from CMM.**
 - As currently written, both natural gas and CMM (abundant feedstocks for blue hydrogen in our region) are not eligible to receive the tax credit, reducing our ability to foster a hydrogen economy in SWPA.

Economic Opportunities for Pennsylvania:*

- Blue hydrogen is the only opportunity that can deliver job growth at scale in the near-term future. The region has identified **30+ projects that can be deployed within the next 15 years if full 45V tax credits are available to CMM utilization in blue hydrogen production.**
 - These projects would create over 200,000 direct construction jobs and support an additional 492,607 jobs on an indirect and induced basis for a total multiplier of 3.41X.
 - It would generate more than \$213 billion in economic output, while contributing more than \$116.2 billion into Pennsylvania's Gross Regional Product over the development period.
 - Each project would generate close to \$145 million in state taxes and close to \$550 million in federal taxes. Deploying the full project portfolio would result in almost \$5 billion in state and \$18.5 billion in federal tax revenue.
 - For each CMM hydrogen unit constructed, nearly 6,000 construction trades and other skilled worker jobs will be supported over the construction period, generating more than \$750 million in employee compensation.

Enhancing Our Region's Environment:

- Currently, there is no mandate and/or incentive to capture CMM. We can solve a significant climate problem by capturing CMM instead of letting it vent to the atmosphere while creating ultra-low carbon intensity hydrogen for hard-to-abate industries, which would lead to a deeper decarbonization of the region.
- The region, due to its coal mining heritage, produces methane emissions at significantly higher levels than the national average. Fugitive methane is a particularly concerning greenhouse gas emission and a major contributor to global warming.
 - CMM hydrogen production in SWPA checks all the boxes – helps the climate, creates good-paying union/family-sustaining jobs, and will help decarbonize some of the most challenging sectors of the economy.

*Source: IMPLAN, Allegheny Conference on Community Development; March 2024

