dvrpc Alert

The **Alert** newsletter provides monthly updates on transportation and air quality planning activities within the Delaware Valley.

January 2024

Climate Change

United Nations Releases Bleak Climate Change Report

The United Nations Environmental Programme (UNEP) released its 14th annual report regarding the world's progress toward controlling greenhouse gas emissions and limiting temperature rise. The report, titled *Broken Record – Temperatures hit new highs, yet world fails to cut emissions (again)*, sounds the alarm that, even if met, current emissions targets will not be enough to meet the goals of limiting global temperature rise to 1.5°C (2.7°F) or 2°C (3.6°F) above pre-industrial levels.

As the report's title suggests, 2023 was a year of record-breaking climate change. September was the warmest month on record with global average temperatures 1.8°C (3.2°F) above pre-industrial levels, and greenhouse gas (GHG) emissions also continued to rise. The equivalent of 57.4 billion metric tons of CO_2 ($GtCO_2e$) were released into the atmosphere in 2022, showing emissions have more than rebounded from the pandemic and are now exceeding 2019 levels.

The report emphasizes that nations must go beyond meeting their existing targets and adopt more ambitious goals for emissions reduction if the 2°C goal is to be met. The UNEP estimates that even if all countries meet their stated 2030 emissions targets, the world is still headed for a 2.9°C (5.2°F) temperature increase within this century, and the emissions gap, which is the amount annual GHG emissions would need to be further reduced, stands at 14 $GtCO_2e$ for the 2°C goal and at 22 $GtCO_2e$ for the 1.5°C goal.

On a slightly positive note, the report found some progress has been made in implementing the existing round of emissions targets, called Nationally Determined Contributions (NDCs), that took effect in 2020. The current NDCs are the result of the landmark 2015 Paris Agreement where countries agreed to implement policies to limit the global temperature increase to a maximum of 2° above pre-industrial levels. This involves setting 10-year NDCs that align with the temperature goal and updating them every five years. According to this year's report, the difference between emissions targets agreed to by national governments and projected 2030 emissions based on current policy has been reduced to 1.5 $GtCO_2e$, which is down from a 3 $GtCO_2e$ gap in last year's assessment. Now GHG emissions are expected to rise 3 percent by 2030 instead of the 16 percent increase that had been expected before the adoption of the Paris Agreement. In the United States, the Inflation Reduction Act is expected to reduce national emissions by approximately 1 $GtCO_2e$ and bring the country about two-thirds of the way to meeting its target.

Nations will adopt new NDCs in 2025, and the UNEP says new plans should consider not just the dire situation for the planet, but also issues of global inequity, noting that high-income nations and individuals contribute disproportionately to climate change. To address this, the UN recommends high-income countries spearhead fossil fuel-free development strategies and provide financial and technical assistance to low- and middle-income countries to help them meet their development needs using low-carbon strategies. Many high-income nations, including the United States, Japan, and the European Union, have already set net-zero goals for 2050. The report acknowledges this is a step in the right direction, but it also says the implementation of these goals is lagging and international confidence in them is low.

Save the Date

Thursday

February 8, 2024

DVRPC E-Micromobility Summit

Register Here:
dvrpc.ticketleap.com/e-micromobility/

Wednesday

March 27, 2024

DVRPC Transportation and Community Development Initiative

Applications Due

Information is available at:
www.dvrpc.org/tcdi/

EPA Finalizes Rule to Cut Methane Emissions

Last month, while the 28th annual UN Climate Change Conference (COP28) was underway in Dubai, the U.S. Environmental Protection Agency (EPA) finalized a rule to limit methane emissions from the oil and gas industry. According to EPA, methane emissions occur at all stages of the natural gas process from production to distribution due to both unintentional leaks and deliberate venting. Methane, in addition to being the primary component of natural gas, is also a greenhouse gas 28 times more potent than carbon dioxide. EPA says the new rule will yield significant climate and health benefits by preventing approximately 58 million tons of methane emissions and reducing releases of toxic air pollutants and volatile organic compounds that contribute to the formation of smog. By limiting methane releases from oil and gas operations, EPA also expects economic benefits from the recovery of nearly $1 billion worth of natural gas per year.

According to the most recent *Inventory of U.S. Greenhouse Gas Emissions and Sinks*, in 2021, methane emissions accounted for 11.5 percent of all GHG emissions in the United States, resulting in a climate impact equivalent to 793 million metric tons of CO_2. The inventory found the single largest source of methane in the U.S. is enteric fermentation, which is part of the digestive process of certain animals, most notably cattle. Raising livestock is also associated with the fourth largest source of US methane emissions—manure management. Natural gas and petroleum systems represent the second and sixth largest emitters respectively, with landfills coming in third.

EPA stated that the newly finalized rule, which incorporates nearly one million public comments on two previous proposals, provides industry ample time and flexibility to meet the requirements, which apply to new and modified facilities. The rule gives states that wish to reduce emissions from existing sources two years to submit a regulatory plan to federal authorities for approval. EPA also announced they will use remote sensing technology to better detect large methane releases.

US and Global Leaders Agree to Promote Nuclear Energy

Several multilateral announcements regarding nuclear energy came out of Dubai while COP28 was in session this past December. A group of 25 countries, including the United States, launched the *Declaration to Triple Nuclear Energy* which sets the goal of tripling global nuclear energy capacity by 2050. The declaration encourages participants and international financial institutions to invest in nuclear power generation and work toward developing and constructing modular and other advanced reactors to support decarbonization in a range of industries. The announcement references multiple studies that show the importance of nuclear energy in achieving net-zero goals and limiting global temperature rise.

A separate agreement made on the sidelines of the main conference between the U.S., Canada, U.K., France, and Japan, focused on improving the security of the uranium supply chain. The five signatories agreed to leverage $4.2 billion in government-led investments to increase their collective uranium processing capacity with the aim of creating a global uranium market free from Russian influence. In order to produce nuclear fuel for use in reactors, uranium must be mined and converted to a gaseous state before being enriched to a specified concentration. According to U.S.-funded Radio Free Europe, Russia has the largest uranium processing capacity in the world, possessing 38 and 46 percent of global uranium conversion and enrichment capacity, respectively. Additionally, a Russian state-owned enterprise, Rosatom, controls the only company in the world capable of supplying the high-assay low-enriched uranium (HALEU) required by next-generation reactors at a commercial scale. By expanding their conversion and enrichment capabilities, the five nations will enable themselves to better utilize the substantial uranium deposits in friendly nations such as Canada and Australia.

According to EPA's Power Profiler, nuclear accounted for 18.9 percent of electricity generated in the United States in 2022, making it the nation's third largest source of electricity behind natural gas and coal. However, the Mid-Atlantic region is more reliant on nuclear, getting 36 percent of its electricity from nuclear power, second only to natural gas. This has a positive impact on the environment since electricity generated in the region releases 21 percent less CO_2 per megawatt-hour compared to the national average.

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