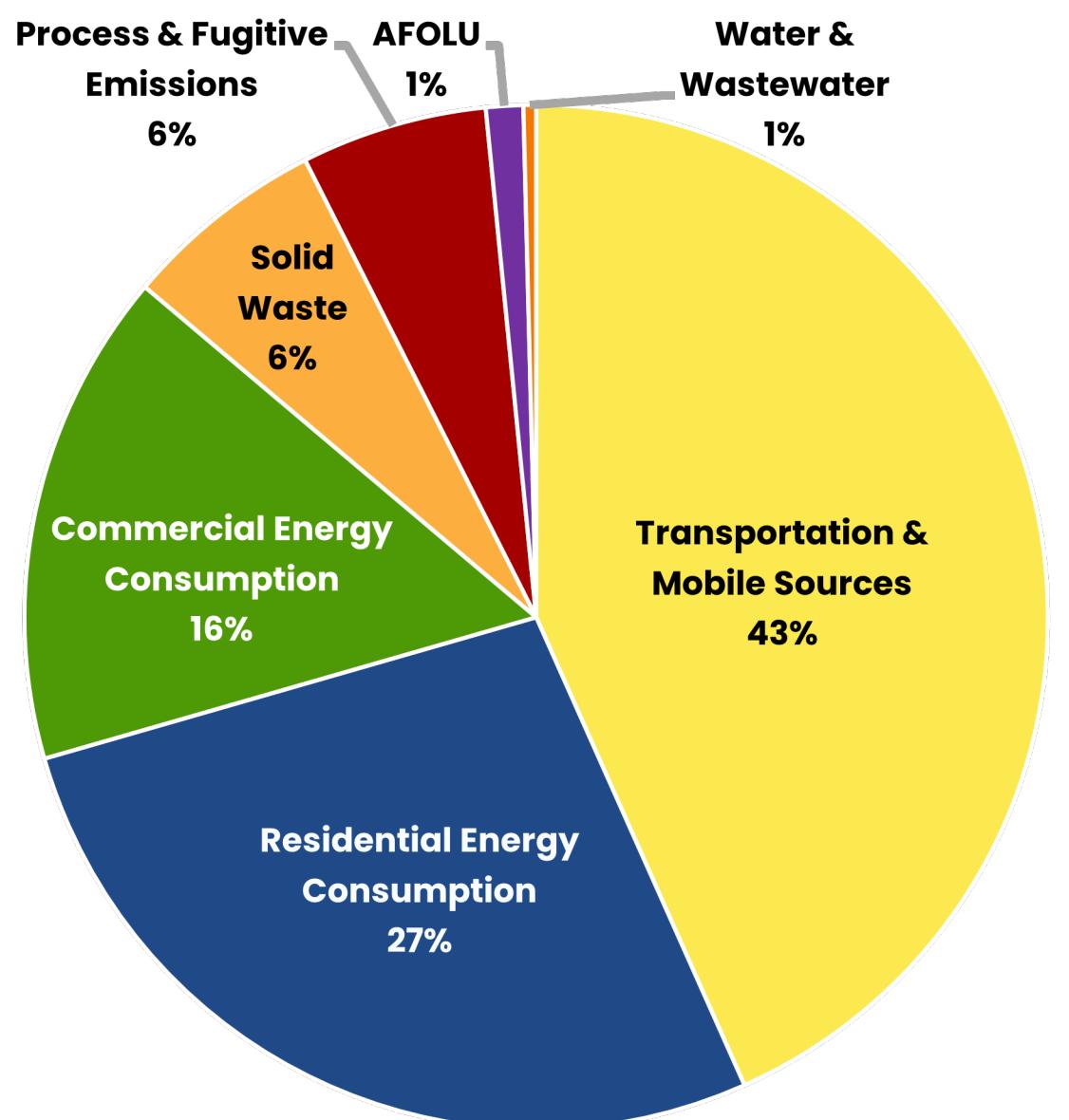


Reducing GHG Emissions in Charles County: A Community Effort

The Earth's climate is affected by gases in the atmosphere that trap heat from the sun, a process called the Greenhouse Effect. Human activities, like burning fossil fuels to power cars and generate electricity, are adding more of these greenhouse gases (GHGs) into the air. This makes the Greenhouse Effect stronger, causing the planet to warm up and creating risks for our safety, health, and economy.

You might notice the effects of climate change in your daily life, such as more frequent and intense heatwaves, unusual weather patterns, and rising sea levels. These changes can lead to health problems, damage to homes and infrastructure, and disruptions to local economies.

Where do GHG Emissions Come From?



Charles County Community-Wide GHG Emissions Inventory

Based on 2018 Data Available from MWCOG

- AFOLU = Agriculture, Forestry, and Other Land Use
- Process & Fugitive Emissions = Industrial process and manufacturing emissions as well as leaks from equipment or pipelines

- GHG emissions are measured using various methods and data sources.
- Emissions are often converted to carbon dioxide equivalents (CO_2e) to account for different global warming potentials (GWP) of each gas, allowing for a unified metric.
- Summarizing GHG emissions into sectors helps policymakers and researchers identify key areas for intervention and develop strategies to reduce emissions effectively.



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INTERNATIONAL



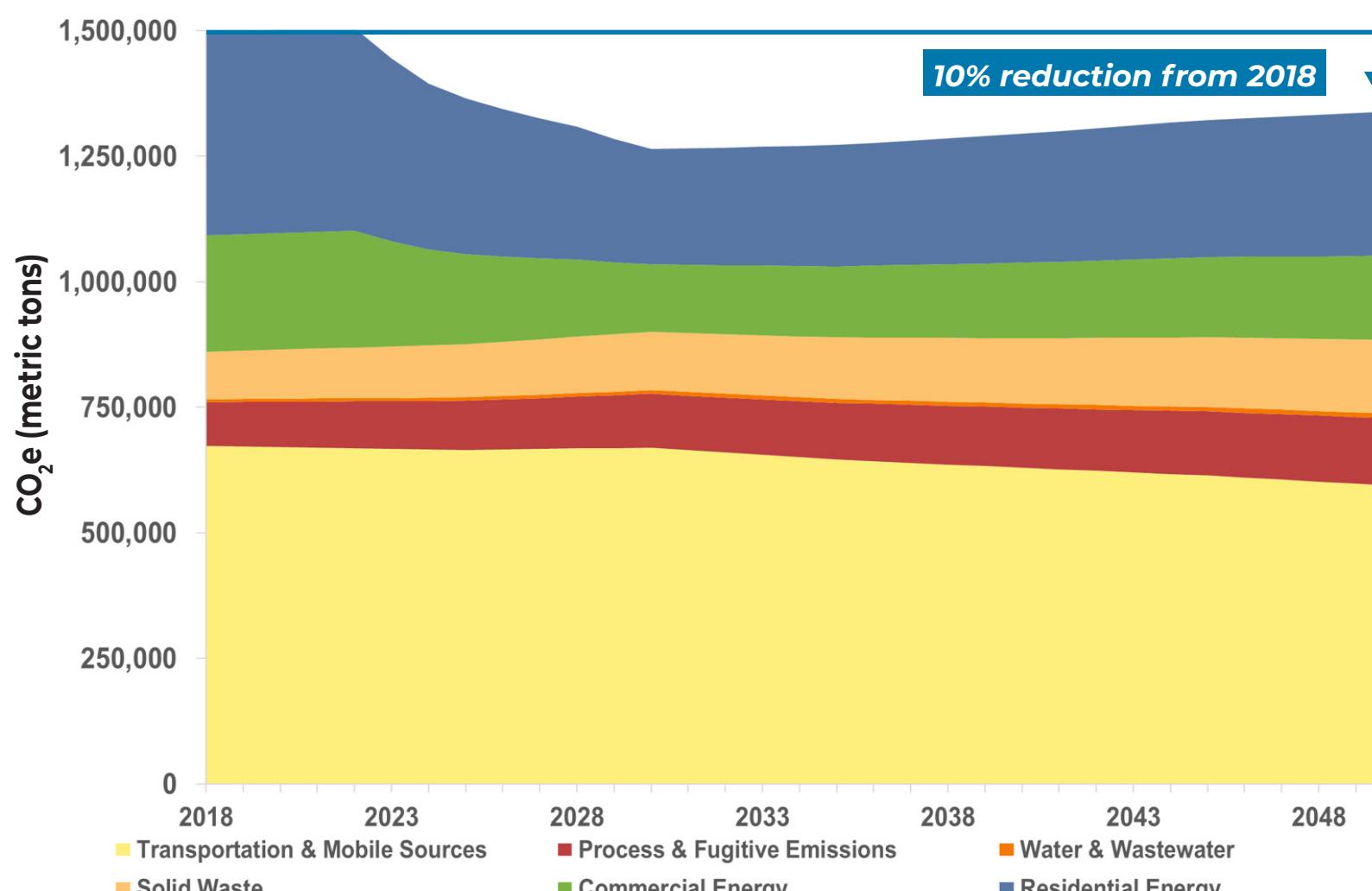
Community-Wide Business-as-Usual (BAU) Emissions

A BAU forecast estimates future emissions based on current trends and policies. It provides a baseline and helps us understand how implementing climate action strategies will impact emissions.

The BAU Forecast Graph, below, is informed by the following data:

- Metropolitan Washington Council of Governments, Cooperative Forecast for Charles County.
- National Renewable Energy Laboratory Cambium projections for electricity emissions factors through 2030. Electricity emissions factor is constant from 2030 onwards.
- Federal Cooperative Average Fuel Economy (CAFE) standards applied to vehicle efficiency through 2050.

2018-2050 BAU Forecast



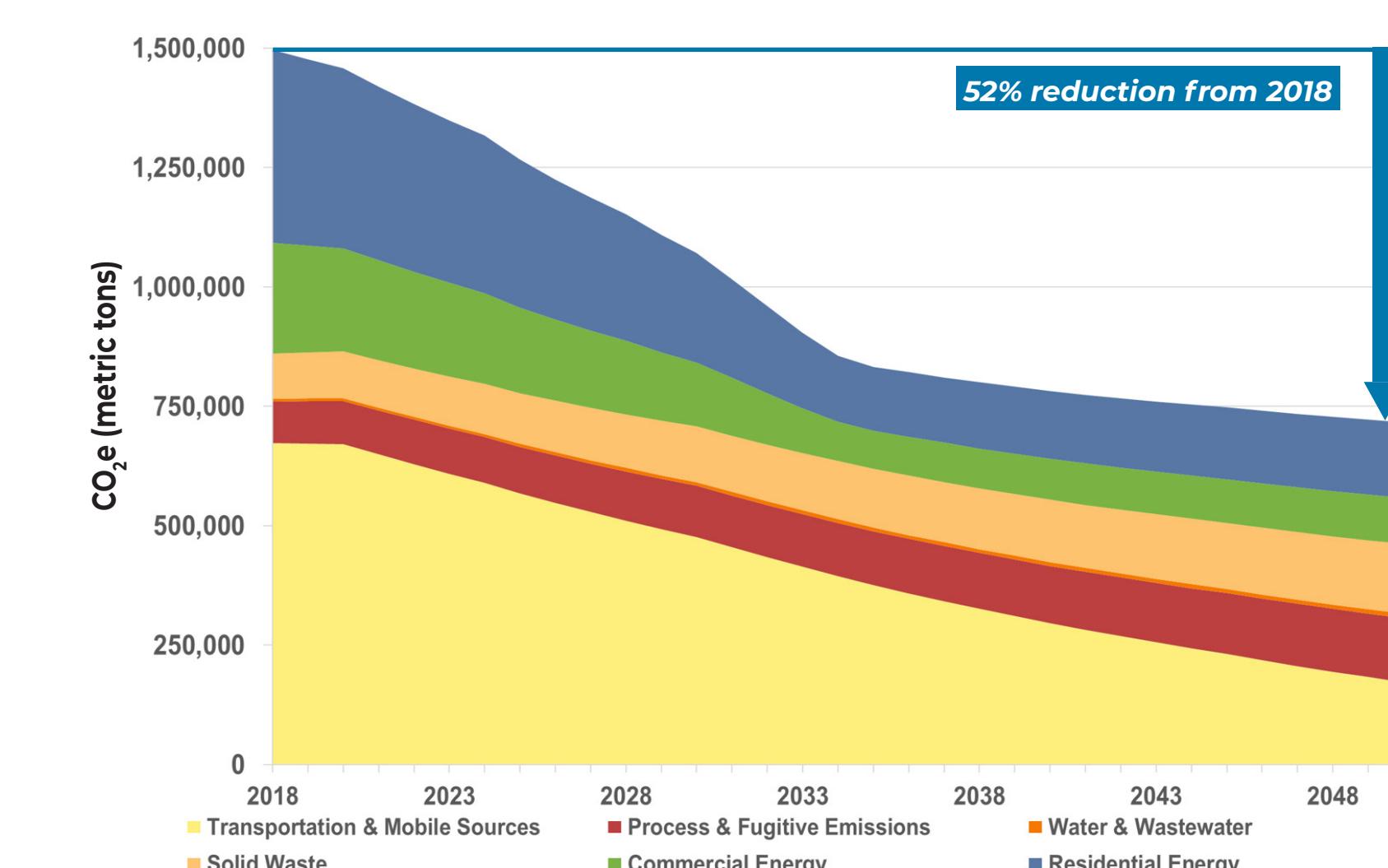
Can Climate Planning and Policies Make a Difference?

The graph below illustrates the emissions reduction impact that the implementation of state policies can have in the future. These policies were developed through Climate Action Planning and documented in the Maryland Climate Pollution Reduction Plan.

The forecast below incorporates the following goals:

- Clean Power Plan goal of 100% clean electricity by 2035.
- Advanced Clean Cars II goal to ensure all new light-duty vehicle sales are electric by 2035.
- Advanced Clean Trucks to ensure 40% of all new heavy-duty vehicle sales are electric by 2035.

2018-2050 Impacts of State of Maryland Policies



How Can We Reduce Community GHG Emissions?

Local governments can help reduce GHG emissions through policies and planning. Communities can take steps to lower GHG emissions through individual actions.

Transportation and Mobile Sources



- Enhance public transit
- Increase electric vehicle adoption
- Encourage biking and walking
- Reduce vehicle idling
- Promote car and ridesharing
- Implement intelligent transportation systems for congestion reduction

Residential & Commercial Energy Consumption



- Increase use of heat pumps
- Increase the use of renewable energy sources like solar and wind
- Upgrade to energy-efficient appliances and lighting
- Improve building insulation
- Enforce sustainable construction standards

Solid Waste



- Implement comprehensive composting programs
- Enhance recycling efforts
- Control landfill gas emissions
- Promote mindful consumption to reduce waste

Agriculture, Forestry, and Land Use



- Preserve and expand tree canopies
- Practice sustainable agriculture
- Promote compact and mixed-use development
- Implement sustainable zoning policies
- Promote the use of native plants
- Reduce the use of pesticides and herbicides

Water and Wastewater



- Harvest rainwater
- Support water conservation programs
- Implement efficient aeration systems
- Increase the use of water-efficient technologies
- Increase the use of renewable energy sources for water treatment processes