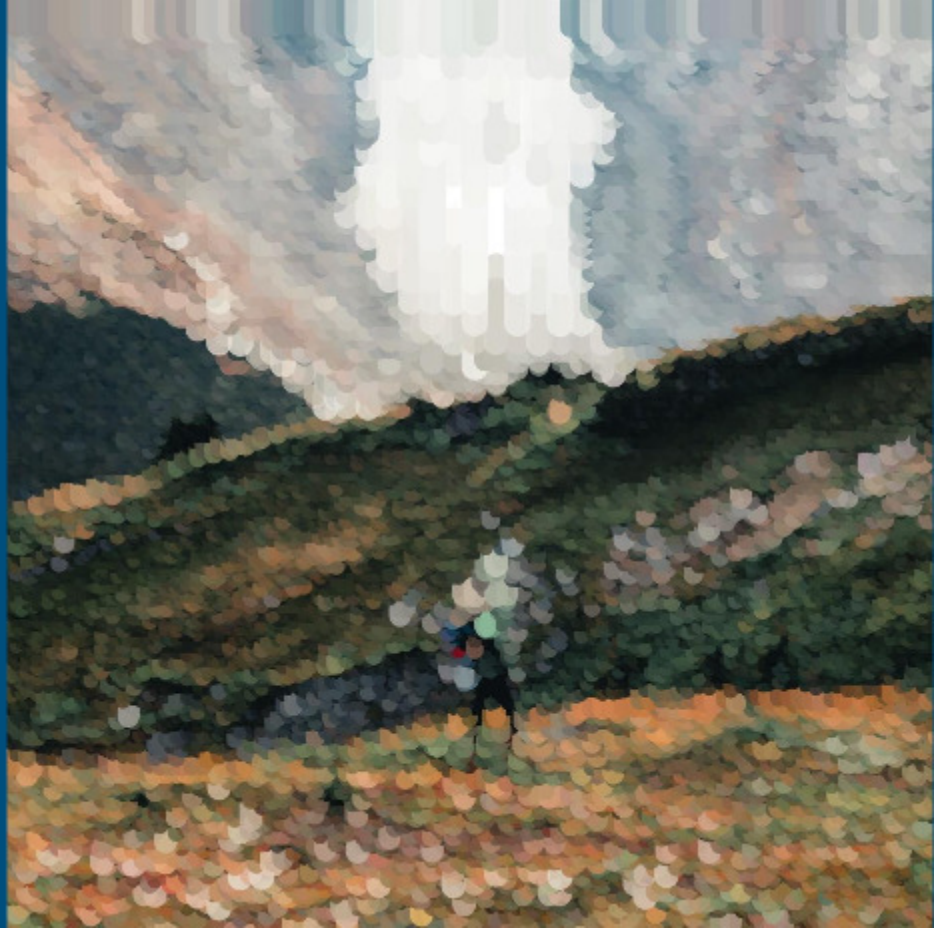


Comprehensive Climate Action Plan for the Miami Valley Region

Miami Valley Regional
Planning Commission



Setting a target

Why setting a target?

Commitment to climate goals

Keeping the global average temperature rise below 1.5/2°C aligned with the Paris Climate Agreement.

Provides consistent guidance across sectors

Clarity to investors, businesses, and residents to drive sustainable development.

Costs and returns on climate action investment

Spending can be allocated to climate action projects and greater savings can be incurred sooner.

What's a good target?

Measurable

Actionable

Time-bound

Science-based Target (general) means 45% minimum reduction in greenhouse emissions from 2010 levels by 2030, and net-zero emissions by 2050.

This target is the global reduction IPCC calls for, in order to keep global warming within the threshold of 1.5°C above pre-industrial levels.



Science-based Target -Carbon budget

if every jurisdiction across the world were to adopt a carbon budget and implement it, the world would have the best chance of staying within the 1.5 °C threshold while realizing equity and co-benefits to climate action.



**Federal Target means 61-66%
reduction in greenhouse
emissions from 2005 levels
by 2030, and net-zero
emissions by 2050**



**What these targets mean
for Miami Valley?**

**Current GHG
emissions: 11.5
MtCO₂e**

Science-based general

**Interim 2030 GHG
emissions: 7 MtCO₂e**

Net-zero by 2050

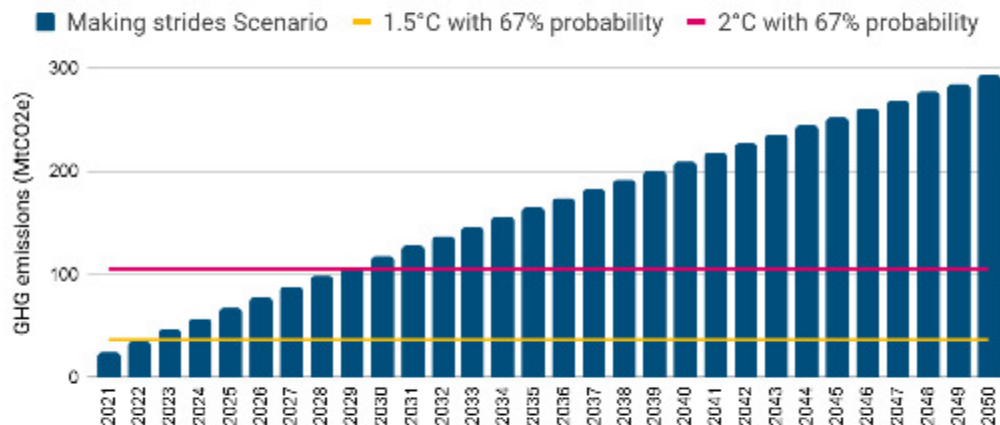
What these targets mean for Miami Valley?

Current GHG emissions: 11.5 MtCO₂e

Large-scale anaerobic digestion of waste and wastewater

Science-based carbon budget

Carbon budget Miami Valley



Net-zero by 2050

**What these targets mean
for Miami Valley?**

**Current GHG
emissions: 11.5
MtCO₂e**

**Aligned with the Federal
Target**

**Interim 2030 GHG
emissions: 5.3 MtCO₂e**

Net-zero by 2050

Big Moves and scenario assumptions

Moderate economic and population growth
Urban intensification with local community hubs
(hub and spoke model of development)
Equity-focused investments in decentralised
renewables
Emphasis on household affordability over the
long-run

Community First Scenario

High economic and population growth
New industries including server farms, microchips,
vehicle manufacturing
Rapid adoption of EVs, renewable energy, storage

Energy Transition Scenario



Big Move 1: Affordable and Sustainable Buildings

Retrofitting existing buildings

Net-zero new buildings

Fuel switching heating

Community First Scenario

Retrofits achieve reductions of 50% of building energy use intensity (EUI) per unit of floor area by 2035 and 60% by 2050. Applies to 100% of the buildings by 2045, beginning with social housing units .

Achieve a 30% reduction in building energy use intensity (EUI) by 2030, and a 40% reduction by 2040

100% of new buildings use heat pumps by 2035.
50% of existing buildings have heat pumps by 2045, beginning with a low-income retrofit program

Energy Transition Scenario

Retrofits achieve average reductions of 24% of building energy use intensity (EUI) per unit of floor area by 2035 and 41% by 2050. Starts with archetype neighbourhoods and retrofits increase linearly to reach 100% of buildings by 2050.

Achieve a 20% reduction in building energy use intensity by 2030, relative to reference year (2021), and 30% reduction by 2040.

100% of new buildings will use heat pumps by 2045, according to a natural replacement rate
50% of existing buildings use heat pumps for heating and cooling by 2035.



Big Move 2: Clean Transportation for All

Increase transit and active modes

Vehicle electrification

Community First Scenario

Achieve at least 20% of trips to be taken by modes other than driving by car (drive alone) by 2040.

Procurement of light-duty vehicles:

- 50% vehicle sales are electric by 2030,
- 67% by 2032, and
- 100% by 2035

Heavy-duty:

- 30% vehicles sales are electric by 2030, and
- 100% by 2045.

Transit fleet (buses and trolleys):

- 100% electric fleet by 2035.

Off-road:

- 100% are electric by 2040

Municipal fleet:

- 100% is electric by 2035.

Aviation:

- 100% carbon-free by 2040

Charging infrastructure to be subsidized in low-income areas to provide with fast public charging for EVs.

Energy Transition Scenario

NA

Light-duty vehicles:

- 50% vehicle sales are electric by 2030,
- 67% by 2032, and
- 100% by 2040

Heavy-duty (including transit buses and trolleys):

- 30% vehicles sales are electric by 2030, and
- 100% by 2040.

Off-road:

- 100% are zero-emission: 50% battery electric and 50% hydrogen fuel cell electric.

Municipal fleet:

- 100% is electric by 2035.

Aviation:

- 100% carbon-free by 2040



Big Move 3: Green Energy

Increased renewable energy in buildings

Increased renewable energy for industrial processes

Community First Scenario

100% renewable energy for municipal buildings by 2035.

100% carbon-free electricity generation by 2035 community-wide. This is translated into 100% of buildings with solar potential have solar rooftops (both commercial and residential). Additional electricity requirement is contracted from renewable sources, including solar and others, in and out of the region.

Renewable energy generation is tripled by 2030, relative to 2021 levels (9% of installed capacity in the US), reaching up to 27% of wind and solar.

Energy Transition Scenario

Rapid deployment of large scale renewable energy projects.

100% of electricity comes from renewable sources by 2030.



Big Move 4: Re-energized Clean industrial and agricultural sectors

Increase energy efficiency in
industrial processes and agriculture

Electrification

Deployment of hydrogen for
industrial processes

Carbon sequestration in agriculture

Community First Scenario

Industrial sites to reduce their energy intensity by 30% within 5 years, by 2030, relative to 2021 levels.

50% energy consumption is electricity

NA

Agriculture sector is carbon neutral

Energy Transition Scenario

Industrial sites to reduce their energy intensity by 30% within 5 years, by 2030, relative to 2021 levels.

50% energy consumption is electricity

100% replacement of coal with hydrogen in industrial processes.

Agriculture sector is carbon neutral, including offsetting with carbon offsets and carbon capture and storage systems.



Big Move 5: Circular economy

Reduce waste generation per capita

Expanding composting

Large-scale anaerobic digestion of waste and wastewater

Community First Scenario

30% emission reduction of methane by 2030 (relative to 2020-levels)

90% diversion of waste from landfills by 2050, for all types of waste (organics, metal, paper, and others). Organic waste is sent to community composting facilities. To apply to residential and commercial waste.
Interim target by 2030, to double the percentage of waste (tonnes) sent to composting (i.e. biotreatment) in all counties (from 15 to 30%).

NA

Energy Transition Scenario

30% emission reduction of methane by 2030 (relative to 2020-levels)

NA

90% diversion of waste from landfills by 2050, for all types of waste (organics, metal, paper, and others).
Organic waste is sent to industrial anaerobic facilities, where solid organic waste is treated along with wastewater. To include residential and commercial waste.

Retrofitting existing buil

Connect that to DOE/UC
BFS grant that is in
process... M&PUC convene
all jurisdictions to
participate/assist with he
be part local
environmental leadership

Sticky notes



Net-zero new buildings



Fuel switching heating

Grants/funding to
landowners will
need to be
explored to
increase success.

Sticky notes



Provide guidance and standards for communities to use in considering these actions

Retrofitting existing buildings

Net-zero new buildings

Fuel switching heating

assist with
modeling
and
forecasting

identify
funding
sources

Increase transit and active modes

Sticky notes



Vehicle electrification

Increase transit and active modes

Vehicle electrification

Sticky notes



Increase awareness of available options or resources

Increased renewable energy in buildings

Increased renewable energy for industrial processes

Sticky notes



Outload comment: target for 100% of municipal seems a bit too ambitious

Matt suggest starting with renewable contracts for municipal buildings

As a municipality you can usually pick who your electricity supplier is




There is limited choice in types of energy that is available in the area. Ised more availability of wind, solar, ether? We need to encourage these generation sources in the area.

Sticky notes



Increased renewable energy in buildings

Increased renewable energy for industrial processes



Increase energy efficiency in industrial processes and agriculture

Electrification

Deployment of hydrogen for industrial processes

Carbon sequestration in agriculture

Agriculture needs to consider more factors than fertilizer application

More factors such as equipment, transportation, food systems. Using only fertilizer applications is limited

Including soil management in addition to carbon sequestration

Sticky notes



Increase energy efficiency in industrial processes and agriculture

Electrification

Deployment of hydrogen for industrial processes

Carbon sequestration in agriculture

Carbon sequestration should consider conservation areas and practices, not just agriculture

Reduce waste generation per capita



Expanding composting

The "expand composting" action mentions other types of solid waste. This should be separated to other actions such as expand recycling availability of materials not currently accepted.

Lifecycle carbon emissions associated with solid waste

inputs to composting must not contain hazardous, non-biodegradable materials, such as PFOS, PAH, heavy metals, etc.

Sticky notes

Reduce waste generation per capita

Expanding composting

Large-scale anaerobic digestion of
waste and wastewater

Some people are already in government, but actions needs politics and it'd be helpful to have a training for local governments on how to advance

Behind all of these options, there is a need for a major mind shift in the citizenship, owners, and industry to realize the benefits to self and community. I understand this is a big move, climate, which is great, and need to look at options. A well-structure communication plan needs to be a significant part of any big move success.

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