



June 22, 2021

# COUNCIL ON CLIMATE SOLUTIONS

Natural Working Lands and Forest Products

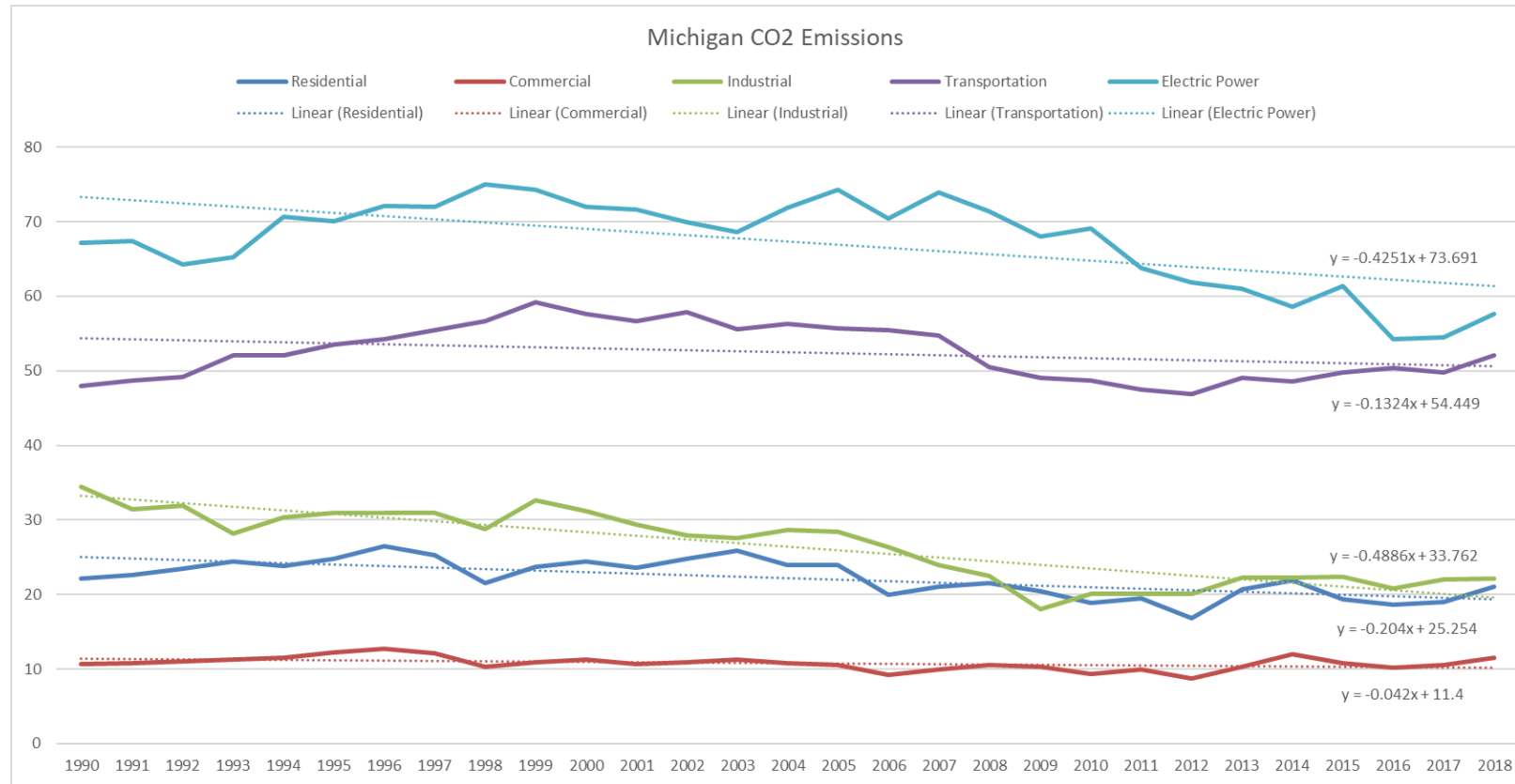
A teal-tinted photograph of a city skyline. In the foreground, a river flows from the bottom left towards the right. A steel truss bridge spans across the river. In the background, several modern buildings are visible, including a prominent cylindrical skyscraper. The sky is overcast with soft clouds.

# WORKGROUP FOCUS

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Natural Working Lands and Forest Products

# GHG Emissions by Sector



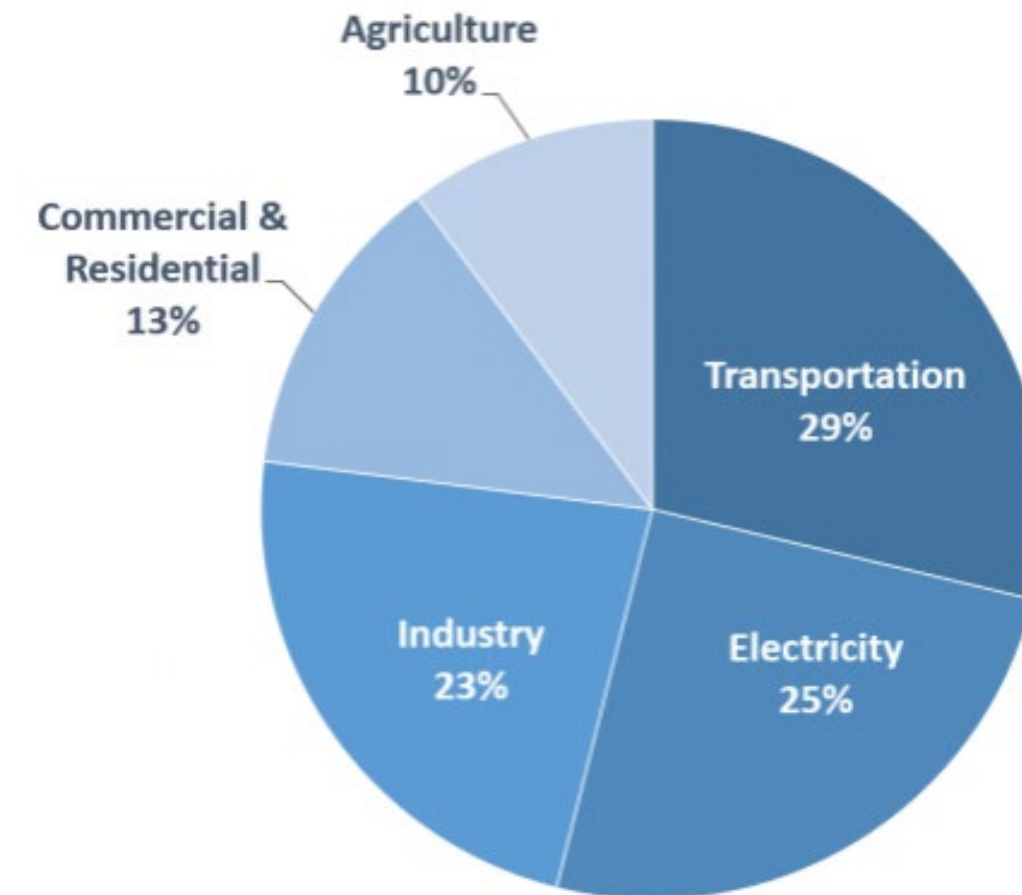
Source: 5 Lakes Energy

Michigan Carbon Emissions 2005 (million metric tons)	Residential Sector	Commercial Sector	Industrial Sector	Transportation Sector	Electric Power Sector	All Sectors
Coal	0.0	0.3	7.3	0.0	67.8	75.4
Petroleum Products	4.6	0.9	5.8	53.8	0.8	65.9
Natural Gas	19.3	9.4	12.0	1.5	7.0	49.2
Total	23.9	10.6	25.1	55.3	75.6	190.5

Michigan Carbon Emissions 2017 (million metric tons)	Residential Sector	Commercial Sector	Industrial Sector	Transportation Sector	Electric Power Sector	All Sectors
Coal	0.0	0.0	5.0	0.0	42.6	47.6
Petroleum Products	2.3	1.6	3.3	48.4	1.3	56.9
Natural Gas	16.6	9.0	9.7	1.1	11.7	48.1
Total	18.9	10.6	18.0	49.5	55.6	152.7

Michigan Carbon Emissions 2017-2005 (% change)	Residential Sector	Commercial Sector	Industrial Sector	Transportation Sector	Electric Power Sector	All Sectors
Coal		-89%	-32%		-37%	-37%
Petroleum Products	-49%	78%	-43%	-10%	63%	-14%
Natural Gas	-14%	-4%	-19%	-27%	67%	-2%
Total	-21%	0%	-28%	-10%	-26%	-20%

## Total U.S. Greenhouse Gas Emissions by Economic Sector in 2019



Total Emissions in 2019 = 6,558 [Million Metric Tons of CO2 equivalent](#). Percentages may not add up to 100% due to independent rounding.

Source: US EPA

Atmosphere  
(829 ± 10)

Net atmospheric increase: 4

Net land flux  
2.6 ± 1.2

Net ocean flux  
2.3 ± 0.7

Gross photosynthesis  
123

Total respiration and wildfire  
119

Ocean-atmosphere gas exchange

78

80

Vegetation  
(450-650)

Net land-use change  
1.1 ± 0.8

Fossil fuels  
(coal, oil, gas) and  
cement production  
7.8 ± 0.6

Total belowground carbon flux  
30-80

Riparian flux  
1.7

Land-use change

Fossil fuels  
(5,000)

Soils  
(1,500-2,400)

Permafrost  
(1,700)

Surface ocean  
(900)

Dissolved organic carbon  
(700)

Intermediate and deep sea  
(37,100)

Ocean floor surface sediments  
(1,750)

Bedrock

# Natural Working Lands and Forest Products Workgroup Co-Chairs

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Lauren Cooper  
Scott Whitcomb

# Workgroup Meeting Attendance

Buildings and Housing	
Date	# Attended
4/16	106
4/30	103
5/14	75
5/28	70
6/11	63
<i>Average</i>	<i>83</i>

Energy Intensive Industries	
Date	# Attended
4/26	65
5/10	51
6/7	48
<i>Average</i>	<i>55</i>

Energy Production, Transmission, Distribution and Storage	
Date	# Attended
4/6	121
4/20	113
5/4	112
5/18	84
6/1	77
6/14	67
<i>Average</i>	<i>96</i>

NWL & Forest Products	
Date	# Attended
4/20	68
5/4	56
6/1	48
6/15	44
<i>Average</i>	<i>54</i>

Transportation and Mobility	
Date	# Attended
4/14	90
5/12	70
6/16	53
<i>Average</i>	<i>71</i>

What needs to happen in the next 9 years – by 2030 – to get us to the 2050 goal?

In seeking to answer this key question, the workgroups are being asked to consider the following sub-questions:

1. In what timeframe is each recommendation achievable?
2. What is the relative magnitude of each recommendation, in terms of GHG emissions reductions?
3. Who is bearing the benefits and burdens of the recommendation?
4. What are the relative costs of each recommendation?
5. To whom is the recommendation targeted?
6. Is there consensus among the subgroup for the recommendation, or are there differing perspectives? If differing perspectives, what are they?
7. What are the most important considerations for achievability and feasibility?

# General Workgroup Process

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## Phase 1

### Level-setting/Exploratory Meetings

- Develop a baseline understanding for their topical area of current carbon emissions levels, opportunities, barriers and strategies for reducing emissions, and equity and workforce considerations

## Phase 2

### Deliberation and decision-making meetings

- Grounded in the phase 1 presentations, discuss decarbonization strategies in consideration of the seven sub-questions from previous slide
- Begin drafting recommendations

## Phase 3

### Review and refine recommendations

- Refine draft recommendations, identify gaps, identify where consensus exists
- Package list of recommendations to present to the Council





# NEXT STEPS

NEXT MEETING – JULY 27, 2021, 3 to 5 p.m.

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# Reach Us Online

## WEBSITE

[Michigan.gov/Climate](https://Michigan.gov/Climate)

## EMAIL ADDRESS

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