



Maryland
Department of
the Environment

Commission for the Innovation and Advancement of Carbon Markets and Sustainable Tree Plantings

May 6, 2022
Regular Meeting



Meeting Agenda

- **2:00-2:10pm** - Welcome and updates
- **2:10-2:25pm** - Broader framework for market engagement
- **2:25-2:45pm** - Carbon markets and MD state netzero goal
- **2:45-3:20pm** - Open discussion and questions
- **3:20-3:30pm** - Public comment period



Draft Work Plan and Timeline

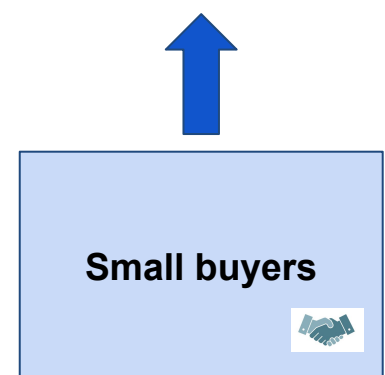
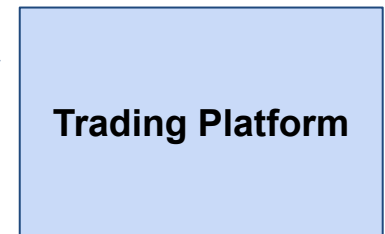
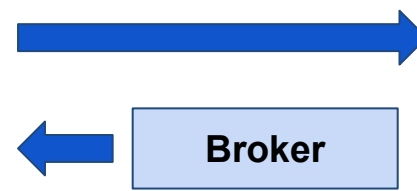
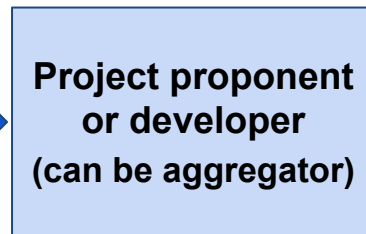
(Meetings on Fridays – 2-3:30pm)

- **May 6**
 - MDE: Intro to Carbon Markets and the role of the State
- **May 27**
 - MDE and Invited Speakers:
 - Conservation Finance Act
 - Clean Water Commerce Act
 - Water Quality Revolving Loan Fund
 - Environmental Impact Bonds
- **June 17**
 - MDOT:
 - Tree mitigation for transportation projects
- **July 8**
 - Progress reports from all agencies
 - Key challenges/opportunities: long-term tree maintenance
- **July 29**
 - Progress reports from all agencies
 - Key challenges/opportunities: nursery stock or other logistics
- **August 19**
 - Progress reports from all agencies
 - Key challenges/opportunities: federal policies and leverage

September 1 - Finish Draft Report



Carbon Offset Marketplace





Carbon Offset Marketplace

Afforestation/Reforestation

Offsets generated through carbon storage of **newly planted trees on non-treed sites** (afforestation) or to reestablish forest on land with recent tree cover (reforestation).

Avoided Conversion

Offsets generated by **preventing the conversion of forested land** to non-forested land.

Improved Forest Management

Offsets generated through **forest management activities** that increase or at a minimum maintain current level of carbon stocking.

RGGI Inc.



**CITY FOREST
CREDITS**



 **Second Nature**


Offset Network



Carbon Offset Marketplace

Table 4. Voluntary Carbon Market Size by Project Category, 2019 - 31 August 2021

| | 2019 | | | 2020 | | | | 2021 (through August) | | | |
|---|-----------------|---------------------|-------------|-----------------|---------------------------------|---------------------|-------------|-----------------------|---------------------------------|---------------------|-------------|
| | Volume (MtCO2e) | Price per ton (USD) | Value (USD) | Volume (MtCO2e) | Volume % Change from Prior Year | Price per ton (USD) | Value (USD) | Volume (MtCO2e) | Volume % Change from Prior Year | Price per ton (USD) | Value (USD) |
| FORESTRY AND LAND USE | 36.7 | \$4.33 | \$159.1M | 48.1 | 30.9% | \$5.60 | \$269.4M | 115.0 | 139.4% | \$4.73 | \$544.0M |
| RENEWABLE ENERGY | 42.4 | \$1.42 | \$60.1M | 80.3 | 89.4% | \$0.87 | \$70.1M | 80.0 | -0.3% | \$1.10 | \$88.4M |
| ENERGY EFFICIENCY/ FUEL SWITCHING | 3.1 | \$3.87 | \$11.9M | 31.4 | 921.0% | \$1.03 | \$32.3M | 16.1 | -48.9% | \$1.57 | \$24.2M |
| AGRICULTURE | - | - | - | 0.3 | - | \$9.23 | \$2.8M | 3.4 | 876.8% | \$1.36 | \$4.6M |
| WASTE DISPOSAL | 7.3 | \$2.45 | \$18.0M | 8.3 | 13.0% | \$2.76 | \$22.9M | 2.7 | -67.5% | \$3.93 | \$10.6M |
| TRANSPORTATION | 0.4 | \$1.70 | \$0.7M | 1.1 | 165.2% | \$0.64 | \$0.7M | 2.1 | 99.3% | \$1.00 | \$2.1M |
| HOUSEHOLD DEVICES | 6.4 | \$3.84 | \$24.8M | 3.5 | -45.4% | \$4.95 | \$17.3M | 1.8 | -49.8% | \$5.75 | \$10.4M |
| CHEMICAL PROCESSES/ INDUSTRIAL MANUFACTURING | 4.1 | \$1.90 | \$7.7M | 1.3 | -68.7% | \$1.90 | \$2.5M | 1.1 | -11.2% | \$3.22 | \$3.5M |

Source: Ecosystem Marketplace, a Forest Trends Initiative.

Note: Volumes are calculated from EM Respondents that reported trade data as of 31 August 2021. Respondents did not always respond to all survey questions; differences in the totals (for example, between the total annual volume and the sum of project category volumes) can be attributed to this. Throughout the remainder of 2021 and beyond as more organizations report to EM for the first time, and as existing EM Respondents report new transactions, these figures for 2020 and 2021 will likely continue to be updated. This will be reflected in future installments of EM's SOVCM report and on the EM Data Intelligence & Analytics Dashboard (<https://data.ecosystemmarketplace.com>).



Carbon Offset Marketplace

- April 6, 2022 - Regan Network purchased all available city forest carbon credits in the U.S.
- ~31,000 metric tons of carbon for ~ \$1m, 13 projects
- Among highest ever paid for forest credits (**\$34-45/ton**), focus on social equity value
- Issued by City Forest Credits



Photo credit: Maryland Department of Planning



Carbon Markets for Project Finance

- **Complement** to, not replacement of current funding
- Offset payments may support ongoing maintenance if projects prove **additionality**:
 - regulatory surplus test
 - carbon removals depend on offset funding
- **Potential registration** of projects co-funded with state dollars:
 - vehicle to ensure high-quality standards/projects
 - supports development of high-value premium credits
 - potential for sale alongside other quantified/saleable co-benefits
 - can open landowner access to broader marketplace



Clarifying what counts

- Range of potential concerns with offsets:
 - Double counting
 - Reductions are real
 - Carbon ownership
- Working to address:
 - Net-zero statewide vs. Entity-scale net zero goals
 - Accounting vs. Crediting
 - Indirect vs. Direct drivers of carbon change

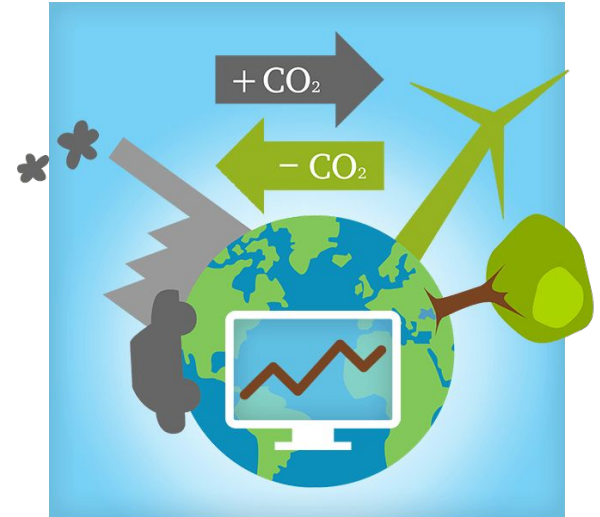
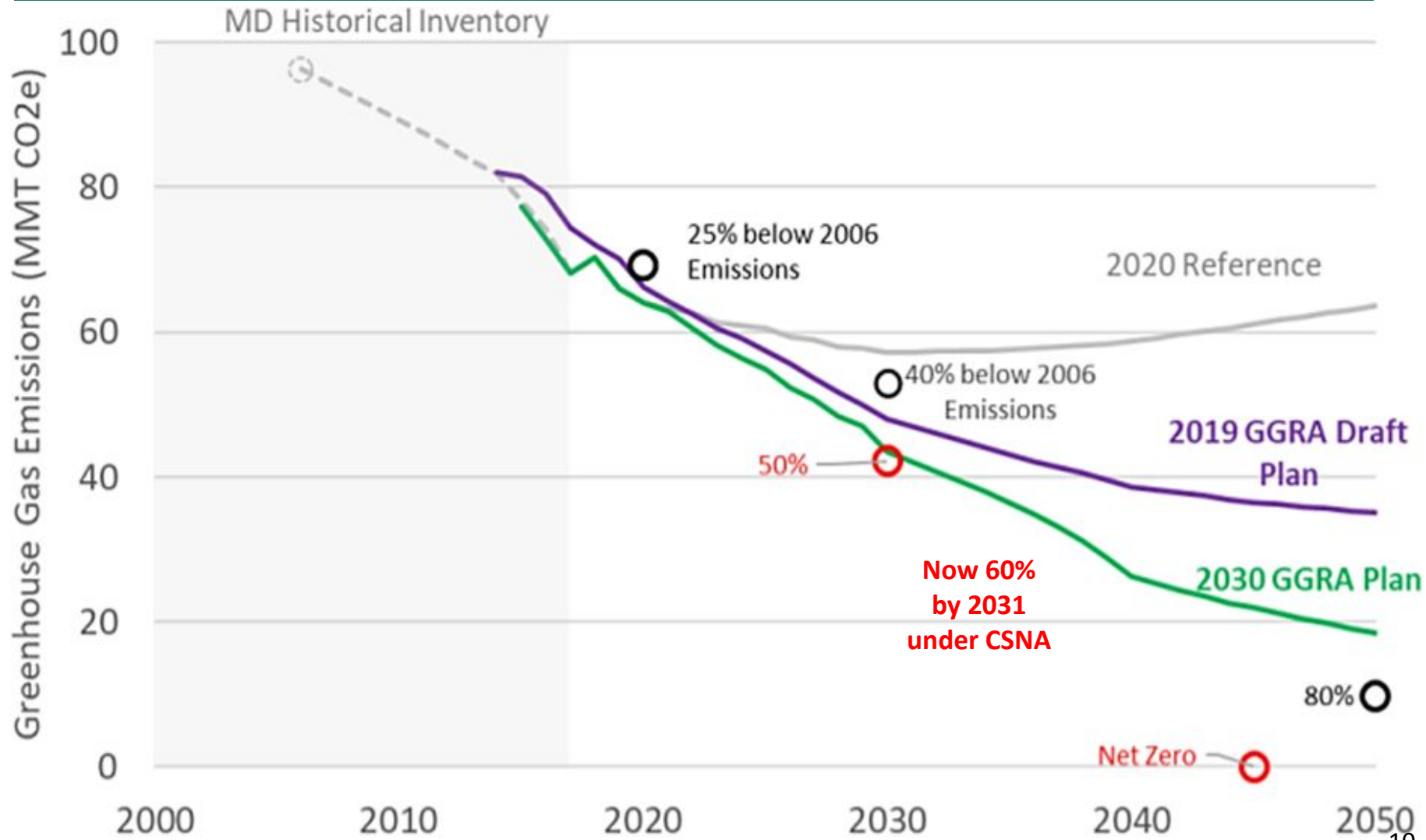


Image Credit: CircuitMeter



Greenhouse Gas Reduction Act (GGRA)





GGRA Tools



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The Greenhouse Gas Emissions Reduction Act

2030 GGRA Plan

Prepared for:

Governor Larry J. Hogan
State of Maryland

and the Maryland General Assembly

February 19, 2021

Planning Tool



Maryland
Department of
the Environment

Larry Hogan
Governor
Boyd Rutherford
Lieutenant Governor
Ben Crumblles
Secretary

State of Maryland 2017 Greenhouse Gas Emission Inventory Documentation

July 26, 2019

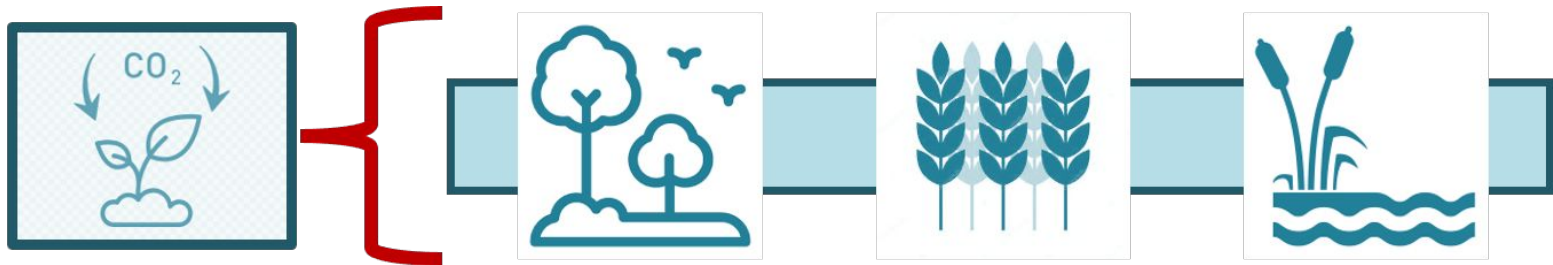
**Prepared by:
Maryland Department of the Environment**

Assessment Tool



GGRA - NWL Scope

- Statewide **accounting**, entire geographic boundary
- *Plan*: # of acres or # of trees, current programs/resources
- *Inventory*: carbon fluxes, all lands, any reason
 - IPCC managed lands proxy
 - Direct and indirect human drivers of change
- Iterative process to evaluate progress against GHG targets

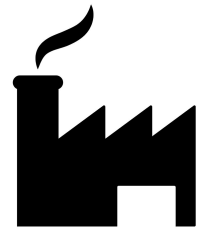




GGRA Connections to Offsets

Compliance Market:

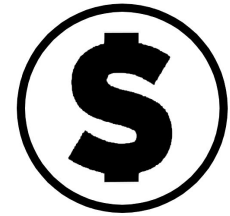
- Regional Greenhouse Gas Initiative - limited to 3.3%
 - No forest offset projects in MD to-date
- Other regulated sectors:
 - Building Energy Performance Standard
 - Alternative compliance fee, role of in-state offsets (?)





GGRA Connections to Offsets

Voluntary Market:

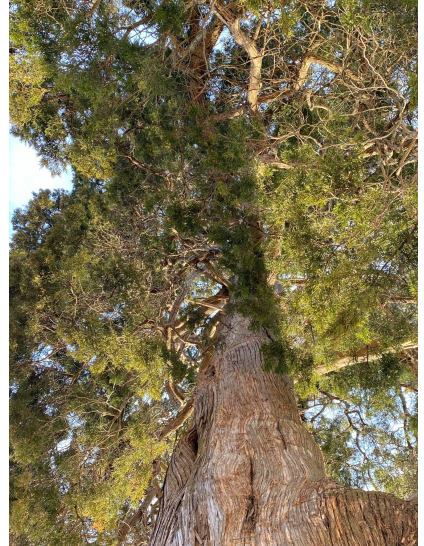


- Multiple players (programs and protocols)
- Conservation Finance Act of 2022 mandates that the State:
 - may not prohibit or limit participation if benefits are *additional*
 - *minimize costs* and *maximize benefits* of voluntary enrollment
 - assist private landowners with *aggregation*
 - allow *use of public forest land* to satisfy buffer provisions
 - *develop offset projects* on state land
- Opportunity for State to establish quantification/verification standards for offsets and other financing tools



Potential Statewide Standards

- Establish expectation of **high-quality** projects:
 - Additional / verifiable
 - Not overestimated / conservative
 - Permanent / life-cycle benefits
 - Not claimed by another entity
 - No significant social or environmental harms
- Accept major quantification protocols from RGGI or established voluntary programs (e.g., CAR, VCS)
- *OR* Accept protocols that can demonstrate high quality





Clarifying what counts

- **Net zero statewide vs. Entity scale net-zero**
 - Everything counts in inventory/towards GGRA goals
 - Entity scale net-zero goal, need to apply “scopes” framework
- **Carbon accounting vs. Crediting for marketplace**
 - Inventory is an accounting tool, protocols are crediting tools
 - Driving up quantification requirements for both
- **Indirect drivers vs direct drivers of carbon change**
 - Attribution of fluxes to iterate policies and programs
 - Informs sense of progress, metrics; can provide insight into impact of offsets with spatial registration of projects



Essential Elements

- State role in making opportunity clear
- Not stifling market, protecting it with standards
- Situate Maryland as trusted partner
- Offsets are one of multiple financing streams

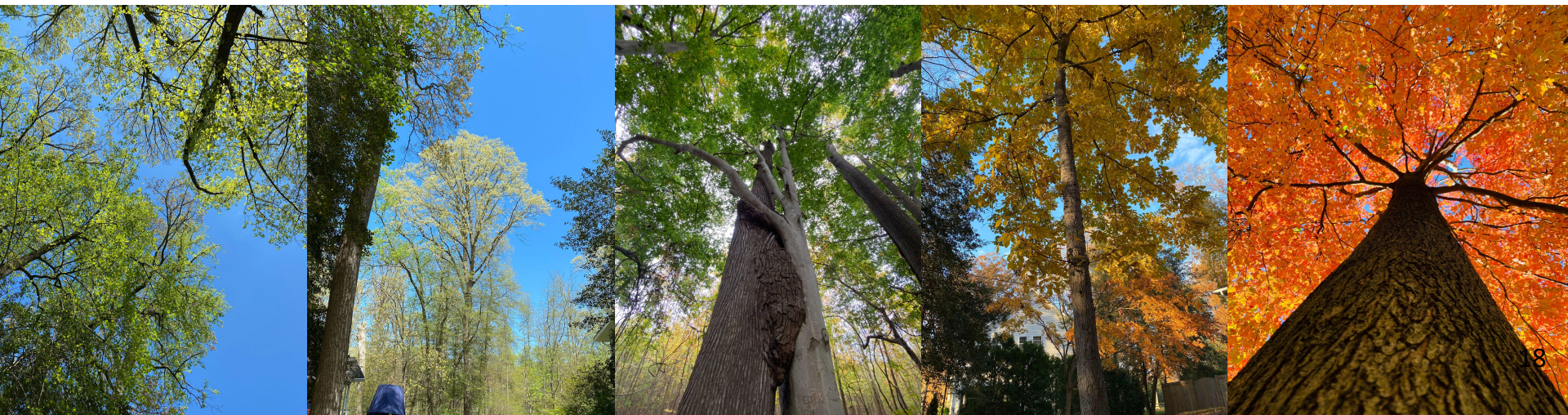




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Questions and Discussion

Commission Members and Implementation Leads





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Public Comment Period

Please add name and affiliation in the chat box and we will take comments in the order received.



Staff Contact

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Maryland Department of the Environment

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