Biomass for Long-Term Carbon Removal and Storage

- Biomass carbon removal and storage (BiCRS) involves capturing carbon dioxide (CO₂) from the air in plants via photosynthesis, and then capturing and storing the carbon in plant biomass rather than allowing it to be re-released to the atmosphere during natural decomposition.
- There are many approaches to BiCRS, because biomass and waste sources, conversion processes and CO₂ storage mechanisms vary.

Generalized BiCRS Pathway:

Key Findings:

- BiCRS can remove over 800 million metric tonnes of CO₂ annually in the United States without affecting cropland or commodity prices, at a relatively low cost.
- High-capacity CO₂ removal will require building hundreds of mid- to large-scale facilities across the United States that link reliable biomass supply, biorefineries, geologic storage, and bioproduct distribution.
- BiCRS must be deployed responsibly to avoid displacing natural ecosystems or food production. If deployed conscientiously, BiCRS can be a useful tool for mitigating other harmful air pollutants and promoting restorative environmental justice.