

A General Methodology for Evaluation of Carbon Dioxide Sequestration Activities*

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Our objective was to develop a general methodology for evaluation of carbon sequestration technologies. We wanted to provide a method that was quantitative, but would be structured to give qualitative comparisons despite changes in detailed method parameters – i.e., it does not matter what “grade” a sequestration technology gets but a “better” technology should get a better grade.

To do this we have developed an elaborate on the following concepts:

- All resources used in a sequestration activity should be reviewed by estimating the amount of greenhouse gas emissions for which they historically are responsible. We have done this by introducing a quantifier we term Latent Emissions Content, which is tied to the resource.
- The future fate of sequestered carbon should be included in technology evaluations. We have addressed this by introducing a variable called Time-Adjusted Value of Carbon Sequestration to weigh potential future releases of carbon, escaping the sequestered form.
- The Figure of Merit of a sequestration technology should address the entire life-cycle of an activity. The figures of merit we have developed relate the investment made (carbon release during the construction phase) to the life-time sequestration capacity of the activity. To account for carbon flows that occur during different times of an activity we incorporate the Time Value of Carbon Flows.

The methodology we have developed does not rely on global atmospheric modeling efforts and can be expanded to include financial, social, and long-term environmental aspects of a sequestration technology implementation.