



## Monitoring and Verification of Environmental Credits

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**Environmental Resources Trust**

Environmental Credits Generated Through Land Use Changes  
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## ERT

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- Mission to develop markets that benefit the environment
- Programs: Green power, greenhouse gas emission mitigation, registry for environmental benefits
- Project-focused service provider
- 501(c)(3) not-for-profit



## Environmental Credits

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- Beyond baseline
  - Assigned (regulatory)
  - Relative to without-project (voluntary)
- Achieved (not anticipated)
- Quantified and verified
- Clear ownership



## Baselines

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- Offset is benefit beyond net baseline
- Capped systems: Baseline assigned
- Outside cap: Baseline is what would have happened without the project
  - Most objective: Look at what others do
- Over time, baselines can be constant, rise, or fall



## Credits $\neq$ Allowances

Credits	Allowances
Created by project	Created by regulator
Goods or offset "bads"	Allow "bads"
Supply not capped	Supply typically capped
Require verification	Claims are audited



## Projects or Commodity Units?

- Projects:
  - Undivided interest in outputs
  - Owner claims all benefits
  - Benefits not necessarily quantified
- Commodity units
  - Require standard definition
  - Quantified and verified
  - Must be tracked



## Tracking Commodity Units

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- Register
- Assign serial numbers
- Mechanism for executing transactions between accounts
- Mechanism for canceling or retiring units
- Comprehensive historic record

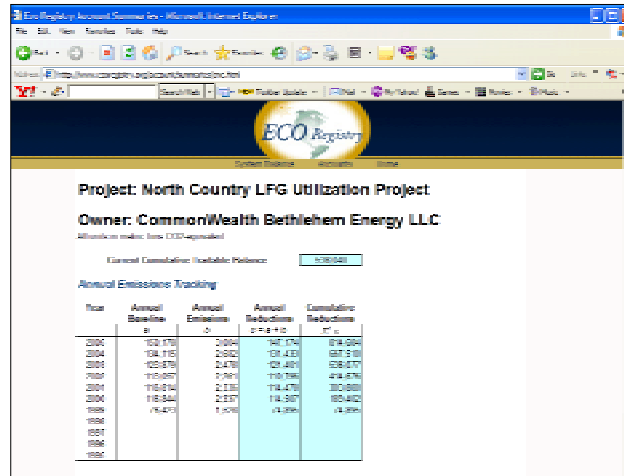


## Aspects of Verification

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- Qualifying activity or benefit
- Qualifying timing and location
- Clear ownership
- Sufficiently reliable quantification
  - Net of additionality and leakage
- Status of credit (e.g. available for trade, held to cover obligation, retired)

## The ERT Registry



The screenshot shows the ERT Registry website for the North Country LFG Utilization Project. The page displays the project name, owner (CommonWealth Bethlehem Energy LLC), and a table of Annual Emissions Tracking. The table includes columns for Year, Annual Baseline (B), Annual Emissions (E), Annual Reductions (R), and Cumulative Reductions (C). The data shows a steady decrease in emissions from 2000 to 2004, with a corresponding increase in cumulative reductions.

Year	Annual Baseline (B)	Annual Emissions (E)	Annual Reductions (R)	Cumulative Reductions (C)
2000	102,170	2,004	100,166	0
2001	104,115	2,252	101,863	100,166
2002	102,870	2,470	100,400	201,566
2003	115,007	2,761	112,246	313,812
2004	116,874	2,135	114,739	428,551

www.ecoregistry.org

## Verifying Environmental Credits

- Verifier is independent of project developer
- Generally registry does not verify but promulgates standards that credits must meet
- Should have confidence that benefits actually exist



## Verifier Roles

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- Auditor
- Appraiser or quantifier



## Verifier as Auditor

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- Verifier reviews records of project
- Methods should be generally agreed to (e.g. generally accepted accounting principles)
- Used in Kyoto system



## Verifier as Appraiser/Quantifier

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- Verifier quantifies benefit
- Verifier uses own quantification tools
- Procedures and factors must be public, even if software is proprietary
  - Particularly important because offsets are not physically in possession of buyer or used as physical inputs to subsequent processes



## Efficient Verification

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- Diverse technical skills and equipment are required
  - Resource modeling
  - Resource measurement
  - Econometrics (leakage)
  - Data management
- Few projects can afford technical capacity



## Examples: Verifier as Quantifier

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- Timber valuation
- Real estate appraisal



## Reversible Credits

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- Most environmental credits are reversible (including carbon sequestration, wetland creation)
- Greenhouse gas emission reductions can be irreversible (such as nitrous oxide emission reductions from fertilizer)
- Must monitor reversible offsets
  - Ongoing monitoring is an ongoing cost



## Indirect Project Benefits

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- Occur outside project boundary or in facilities not owned or controlled by project developer
  - e.g. backing down a fossil-fired energy plant in response to independent generation of electricity by a windmill
- Generally difficult to quantify reliably
- Entity directly causing benefit may have stronger claim to ownership



Thank you

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[www.ert.net](http://www.ert.net)