MRV in GHG Markets at the Sub-National Level

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Executive Director & Dean
“To build and support a global community of experts with the highest standards of professional practice in measuring, accounting, auditing, and managing greenhouse gas emissions.”
Vision... professionalization

“The society of greenhouse gas professionals.”

20 year strategy for Professionalization

Powerful force for social change
Build community and set norms
Create career pathway
Define competency requirements
Education ➔ professional governance
What we do...

1. Community building
   - Networking
   - Ethical norms/codes
2. Education & training
   - Global online curriculum
3. Research
   - Peer-reviewed journal
   - Textbooks
4. Professional certification
   - Institutions & infrastructure
My talk...

1. A little on how I think about GHG MRV and
2. Some specifics on CA programs
Data quality characteristics?

- Not a linear scale...
  - Point estimates: combination of accounting and science
  - Uncertainty in trend or change relative to baseline (not absolute total)
  - Robustness of metrics to manipulation and gaming
  - Ease of verification for compliance
  - Clarity of attribution
  - Fairness (or perceived fairness)
  - Designed conservativeness (bias)
Data applications

• What are we using data for?
  – Scientific inquiry
  – Marketing & PR
  – Voluntary programs & consumer education
  – Regulatory compliance & trading
Assigning accountability for a global public good

GHG accounting frameworks

1. Global
2. National
3. Sub-national (province, state, municipality)
4. Sectoral/program/policy (NAMAs, REDD)
5. Entity (organization, company, or individual)
6. Product/Supply chain/Technology (life-cycle)
7. Facility/Installation
8. Project/Activity

- Attributional or Consequential
More complex relationships

Who is involved?

Intended User
(Management, investors, government, etc.)

(2nd party)

accountability

assurance

Company/Facility Manager
(1st party)

GHG Assertion

Verifier/Validator
(3rd party)

independence

1st (Reporter/Seller)
2nd (Buyer/User)
3rd (Auditor)

GHG program
Accrediting body
Public (watchdog)
Professional community
AB32 “Global Warming Solutions Act” (2006)

• Commits the state to an absolute 2020 GHG target
AB32 “Global Warming Solutions Act” (2006)

• Commits the state to an absolute 2020 GHG target
• Enables the state to start a suite of programs to reduce emissions (including emissions trading)
• Creates GHG reporting, including:
  – Statewide GHG inventory
  – Mandatory GHG facility reporting
  – A state-administered third-party GHG verification program
2020 Statewide Greenhouse Gas Emissions and the 2020 Target

Forecasted Statewide GHG Emissions (MMTCO2e)

2020 Baseline (2008 Scoping Plan)
Pre-economic downturn, Business-As-Usual

596

Recalculated 2020 Baseline from the Scoping Plan
After economic downturn, Business-As-Usual

545

Measures newly incorporated into inventory (baseline)
Pavley (vehicles model-years 2009-2016) 26 MMTCO2e
Renewables Portfolio Standard (12%-20%) 12 MMTCO2e
38 MMTCO2e

2020 AB 32 Baseline (adjusted in 2010)

507

Reductions Necessary to Achieve the 2020 Emissions Target 80 MMTCO2e

427

2020 Emissions Target
State inventory program

• Statewide anthropogenic GHG emissions and sinks,
  – CO$_2$, CH$_4$, N$_2$O, SF$_6$, HFCs, and PFCs
  – nitrogen trifluoride (NF$_3$)
• Data sources: CA and federal agencies, international organizations, and industry associations.
• Methodologies: consistent with 2006 IPCC guidelines and USEPA's national inventory
• Published two statewide inventories:
  – 2000-2009 (Dec 2011)
Mandatory GHG reporting for facilities

• Comparing Federal and California
  – 2007 California mandatory reporting under AB 32
  – 2009 US EPA Mandatory Reporting Rule

• Thresholds
  – Both employ 25k MtCO₂e/yr
  – But CA has broader reach (e.g., lower thresholds for some sectors)

• Verification
  – CA uses third-party verification
  – EPA in-house verification
Facility reporting GHG verification for facilities

- Verification required in 2010 (for 2009 reports)
- ARB serves as accrediting body
- Accreditation requirements are consistent with ISO 14065 principles
- But ARB accreditation program also includes:
  - Training requirements for sectors (ARB administered coursework)
  - Specific education and experiential requirements
Offsets

• Leverages existing “voluntary” offset infrastructure
  – State adopted offset protocols (adapted from CAR protocols)
    • Ozone depleting substances
    • Livestock methane
    • Forestry and Urban forestry
  – Considering further protocols (developed by ACR)
    • Conversion of Pneumatic Controllers
    • N₂O Reductions from Changes in Fertilizer Management
    • Emission Reductions in Rice Management Systems
Offsets

• Early action offset credits
  – ARB has a process for certain offsets issued by the predecessors to its approved protocols (i.e., accepted CAR protocols) to transition to ARB compliance instruments

• Offset Project Registries
  – ARB has partially outsourced components of the offset process
  – Both ACR and CAR have publicly announced their intent to become ARB Offset Project Registries
  – ARB, not the Offset Project Registry issues compliance credits
Offsets

- Uniquely, the CA program allows credits to be retroactively revoked based on evidence disputing verification
  - Invalidation risk falls on entity possessing project instruments
  - Invalidation timeframe can be reduced with additional verifications
Contact

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