



**greenhouse gas management institute**

[www.ghginstitute.org](http://www.ghginstitute.org)

# **MRV in GHG Markets at the Sub-National Level**

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Executive Director & Dean

# Our Mission...

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*“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

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*“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

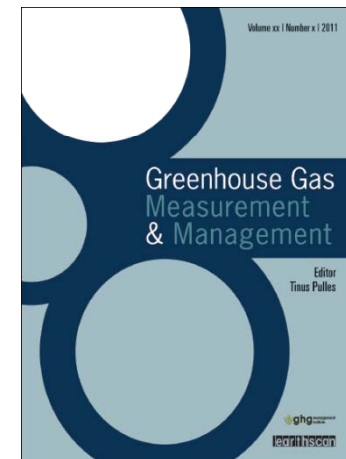
# What we do...

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



Greenhouse Gas  
Experts Network

**GHGMI Member Code of Conduct**  
(Version 1, March 2009)



# My talk...

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

# Data quality characteristics?

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- 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

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- What are we using data for?
  - Scientific inquiry
  - Marketing & PR
  - Voluntary programs & consumer education
  - Regulatory compliance & trading

# Assigning accountability for a global public good

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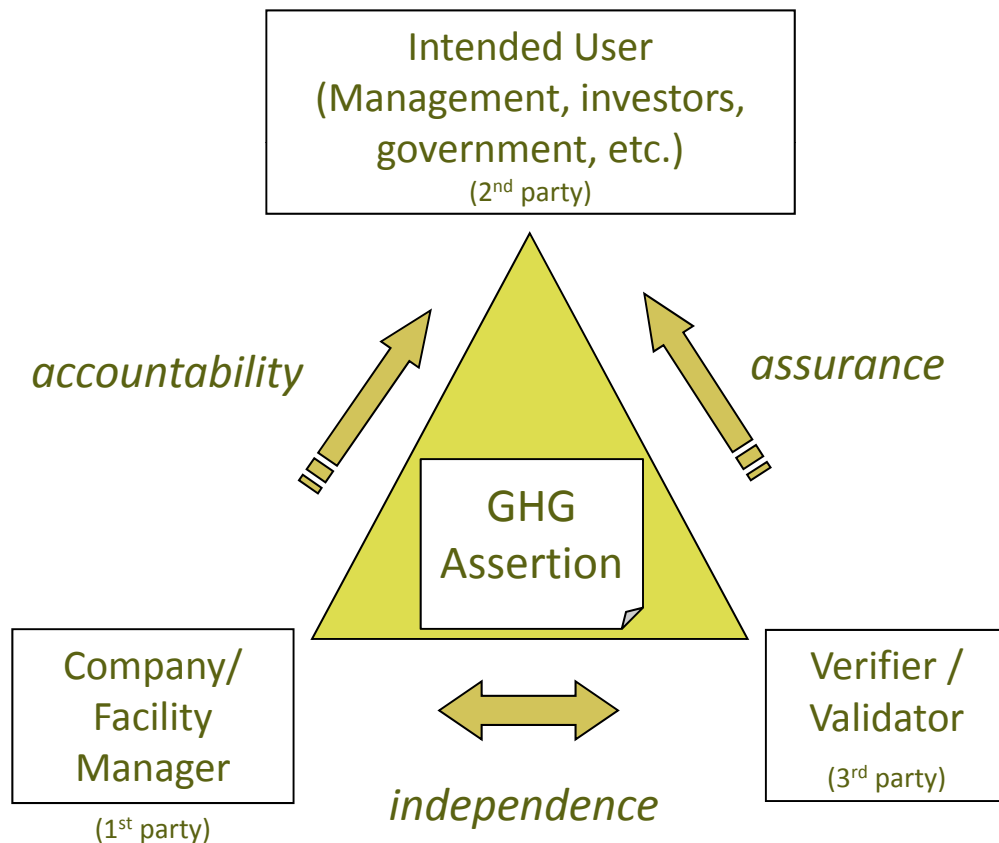


## GHG accounting frameworks

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



1<sup>st</sup> (Reporter/Seller)

2<sup>nd</sup> (Buyer/User)

3<sup>rd</sup> (Auditor)

GHG program

Accrediting body

Public (watchdog)

Professional community

# AB32 “Global Warming Solutions Act” (2006)



- Commits the state to an absolute 2020 GHG target



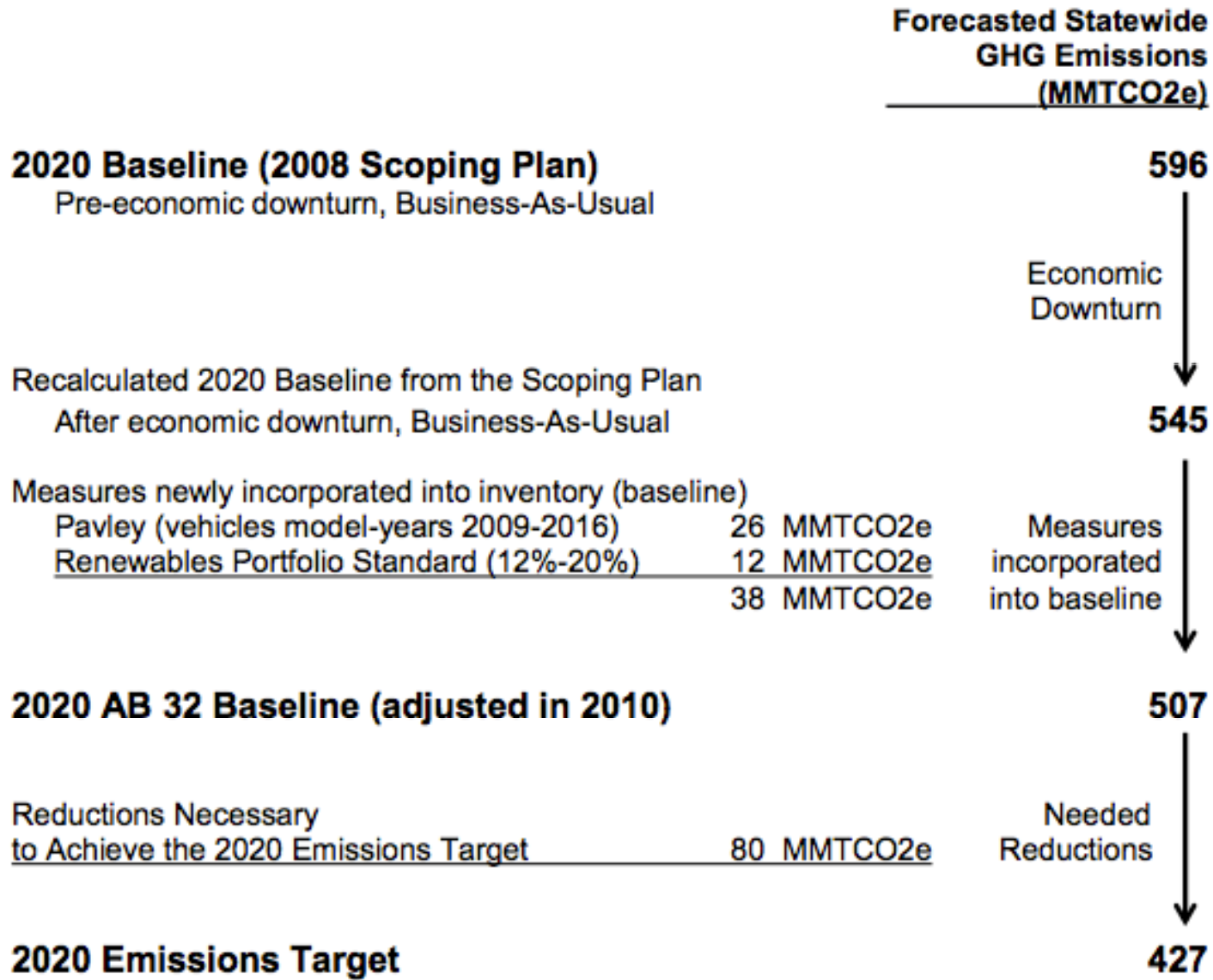
# AB32 “Global Warming Solutions Act” (2006)

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- 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



# State inventory program

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- Statewide anthropogenic GHG emissions and sinks,
  - CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, SF<sub>6</sub>, HFCs, and PFCs
  - nitrogen trifluoride (NF<sub>3</sub>)
- 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:
  - 1990-2004 (2007)
  - 2000-2009 (Dec 2011)



# Mandatory GHG reporting for facilities

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- Comparing Federal and California
  - 2007 California mandatory reporting under AB 32
  - 2009 US EPA Mandatory Reporting Rule
- Thresholds
  - Both employ 25k MtCO<sub>2</sub>e/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

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- Verification required in 2010 (for 2009 reports)
- ARB serves as accrediting body  
[California Environmental Protection Agency](#)  
The logo for the Air Resources Board, featuring a stylized blue and white circular icon to the left of the text "Air Resources Board" in a bold, blue, sans-serif font.
- 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
    - N<sub>2</sub>O Reductions from Changes in Fertilizer Management
    - Emission Reductions in Rice Management Systems

# Offsets

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- 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

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- 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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