



The Climate Registry

The Registry's MRV Process and Water-Energy GHG Protocol Development

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Overview

- Introduction of The Climate Registry (TCR)
- Review TCR's definition of a greenhouse gas (GHG) inventory
- Describe TCR's process for measuring, reporting, and verifying (MRV) a GHG inventory
- Applying MRV to developing a water-energy GHG protocol
- What is good data and our data needs?
- Q & A



The Climate Registry

We empower the world's leading organizations with the highest quality carbon data, in order to operate more efficiently, sustainably and competitively.

- **Provide tools and member support; including help desk**
- **Foster community of members and policy makers**
- **Recognize leadership**
- **Author general and sector specific guidance and protocols**
- **Governed by U.S. states and Canadian provinces and territories**

“You can only manage what you measure.”



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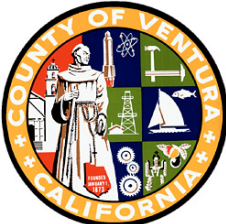
Community of Members



DIGITAL REALTY



THE WESTIN
MISSION HILLS
RESORT & SPA
PALM SPRINGS





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A Carbon Footprint/GHG Inventory

- ✓ The total greenhouse gas emissions caused by an organization
- ✓ Greenhouse gases include:
 - Carbon dioxide (CO₂)
 - Methane (CH₄)
 - Nitrous oxide (N₂O)
 - Hydrofluorocarbons (HFCs)
 - Perfluorocarbons (PFCs)
 - Sulfur hexafluoride (SF₆)
 - Nitrogen trifluoride (NF₃)

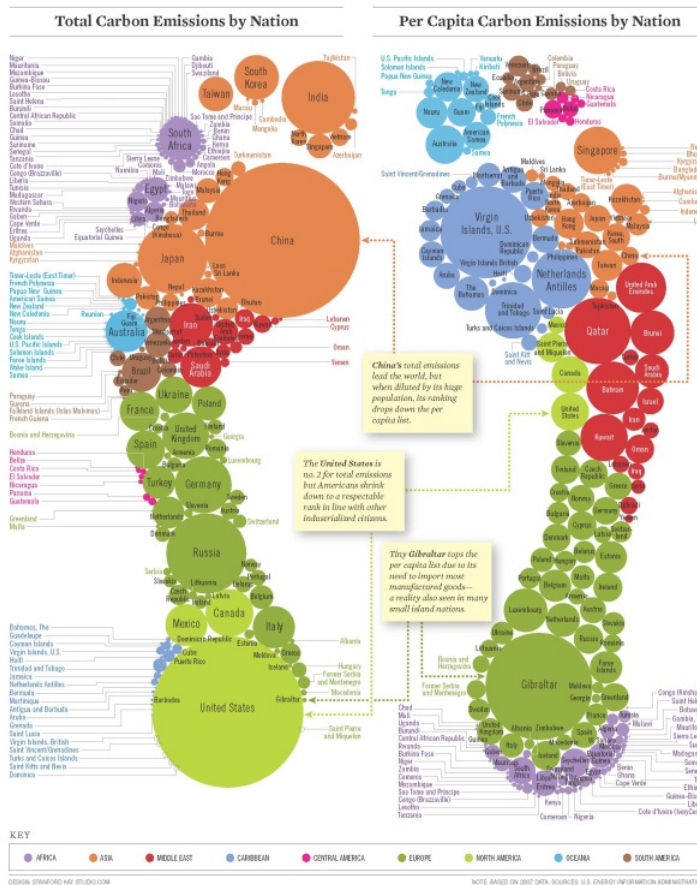


Image used with permission of Stanford Kay



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Benefits of Measuring GHGs

Be more competitive



Be prepared for future climate policy



Be a sustainability leader



Track your success



Xcel Energy: Leading the Way in Reducing Emissions

Milestone in measurement validates Xcel Energy's ongoing commitment

Xcel Energy has achieved a significant milestone as the first U.S. utility to verify and register all of its greenhouse gas emissions data for seven consecutive years with The Climate Registry (TCR), a nonprofit organization that designs and operates voluntary and compliance-related greenhouse gas reporting programs throughout the world.

Source: Boulder Daily Camera, October 18, 2015



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The Climate Registry's MRV Process



1

Identify your reporting boundaries

2

Select your facilities based on your boundaries

3

Organize and collect data on emission sources

4

Quantify and report emissions

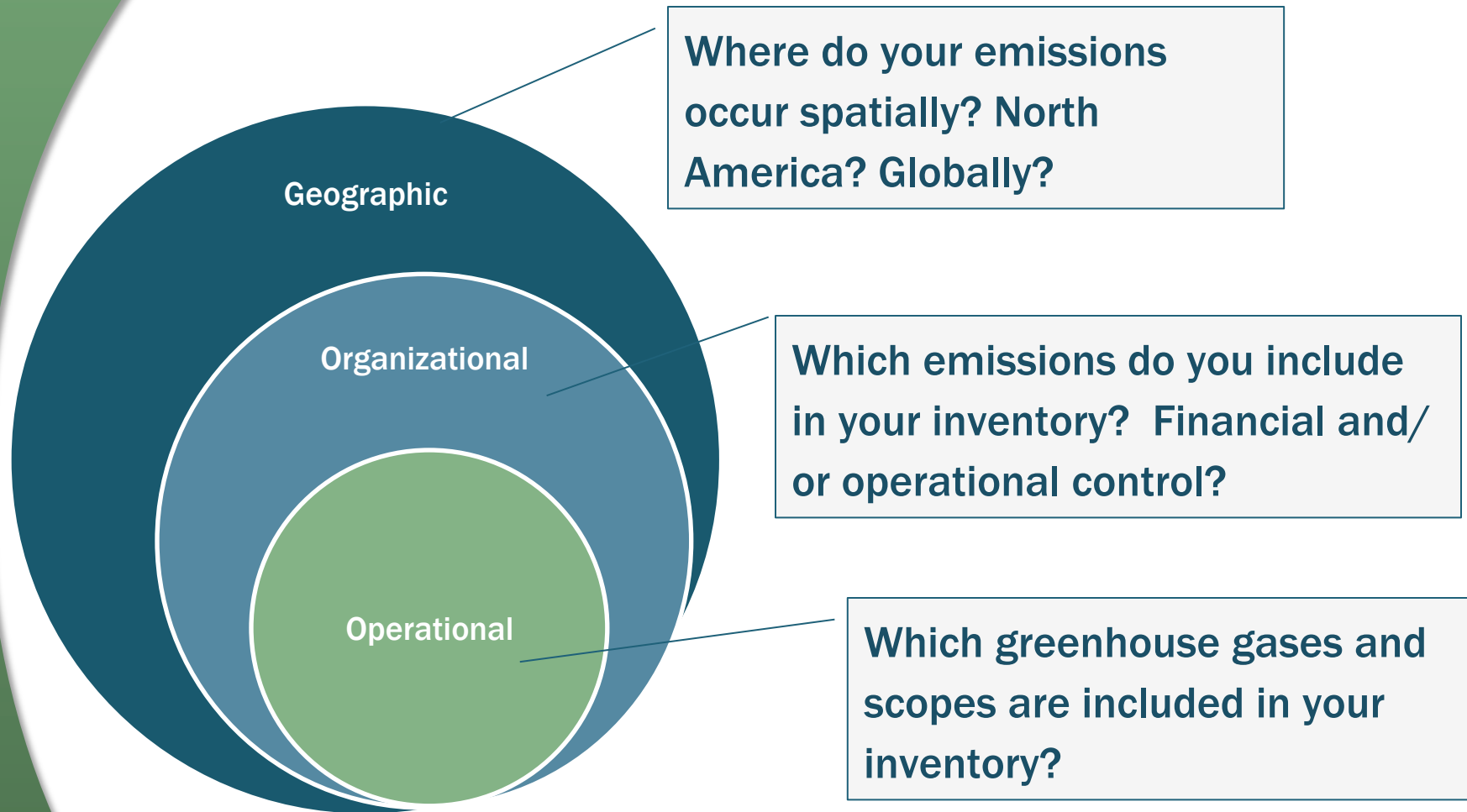
5

Verify by independent third-party

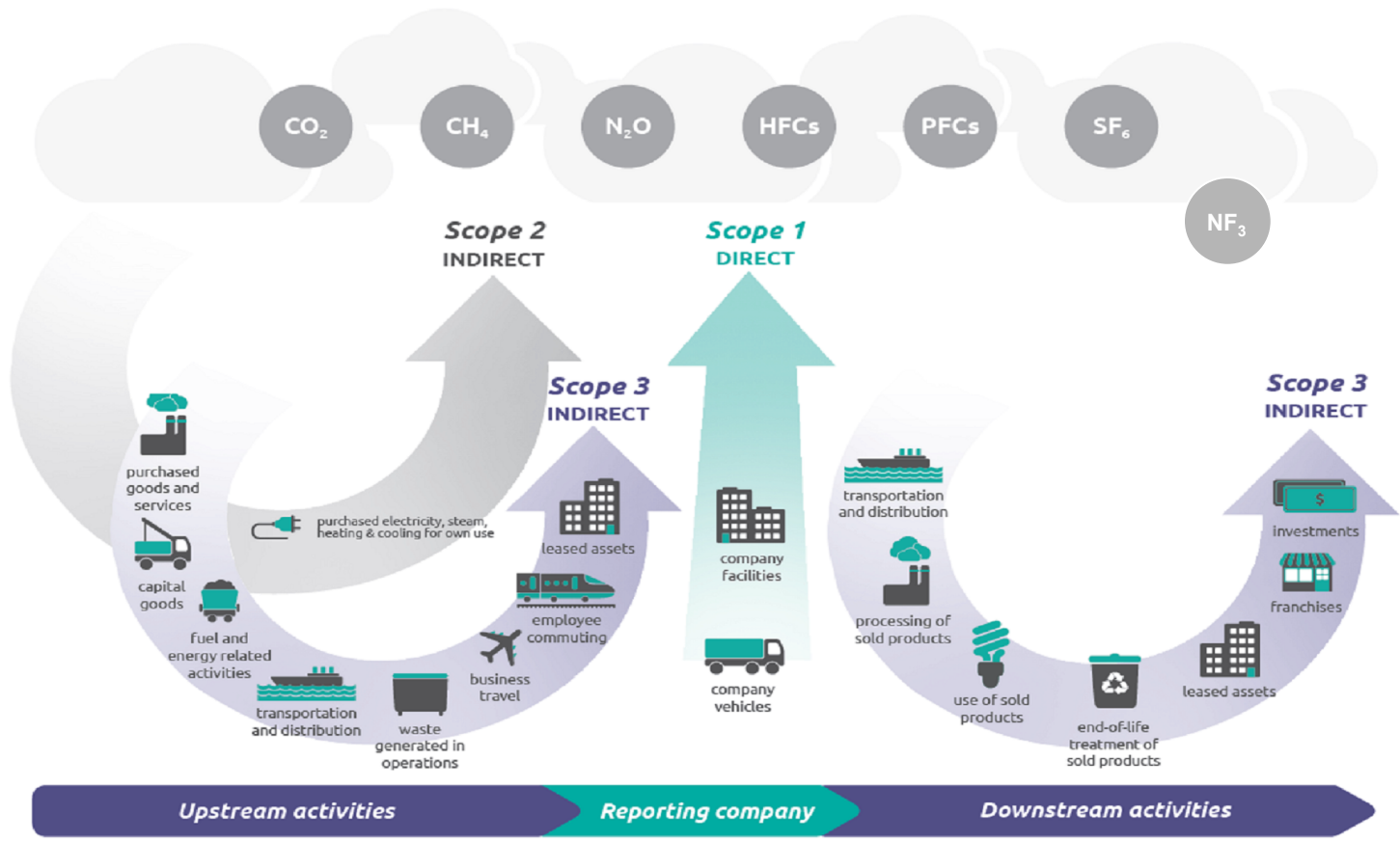


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Step 1: Identify your reporting boundaries



Greenhouse Gas Scopes



Source: WRI / WBCSD GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard



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Step 2: Determine specific facilities based on your boundaries

Stationary – warehouse, retail store, manufacturing plant, office building

Mobile – passenger cars, train fleet, tractors, marine vessels, aircraft, special facilities including oil and gas wells, pipelines, electricity transmission and distribution systems, and water conveyance systems



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Step 3: Organize and collect data on emission sources

- **Scope 1 emissions**

- ✓ mobile combustion from vehicles
- ✓ fuel usage logs or annual mileage records

- **Scope 2 emissions**

- ✓ purchased electricity and/or steam; heating or cooling
- ✓ accounting records or obtain data from utility provider

- **Scope 3 emissions**

- ✓ employee commuting or business travel
- ✓ employee reimbursement forms and/or receipts



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Step 4: Quantify and report emissions

Activity Data: the amount of fuel or material that, when used, causes GHGs



Emission Factor (EF): converts activity data into GHGs



x EF =

GHGs

Global Warming Potential (GWP): converts non-CO₂ emissions into CO₂e



x EF x GWP =

CO₂e



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Step 4: Quantify and report emissions

Enter Source-Level Data

Instructions		Additional Help	+Show
Entity	Third Sal Inc.	Emissions Year	2013
Inventory Status	Checked in	Reporting Progress	Draft
View			

Source	New Source
Source ID*	0
Facility Name	Building 1
Source Name*	Sample Source
Description	
Country*	United States
State/Province*	All
Activity Type*	Stationary Combustion - Scope 1
Fuel Type*	Coal
Fuel*	Anthracite
End Use Sector*	Anthracite
Technology*	Bituminous Lignite Sub-Bituminous Unspecified
Save & close Calculate Cancel Delete	



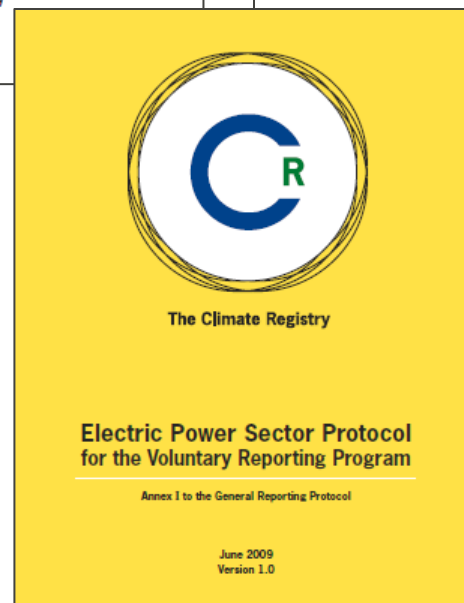
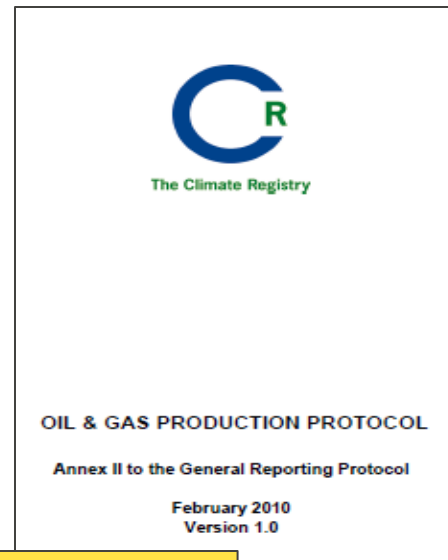
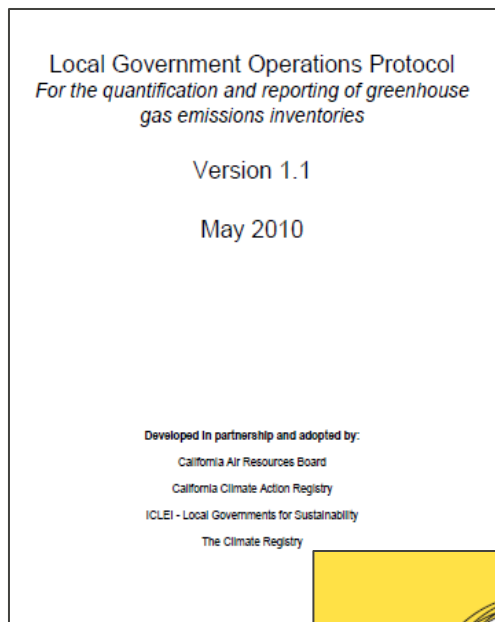
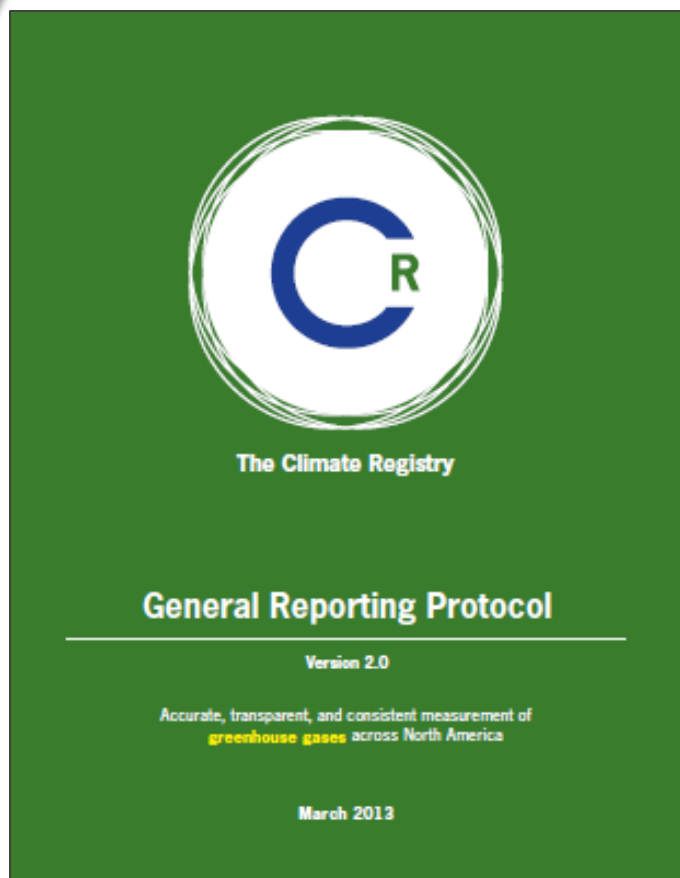
Step 5: Verify by independent third party

- Independent, third-party review
- Optional, but highly encouraged
- Ensures conformance with:
 - Reporting requirements
 - Principles (completeness, transparency, and accuracy)
 - Minimum quality standard
- Places credible data in the public domain
- TCR's verification program is unique, robust, and requires verifiers to be accredited by ANSI (American National Standards Institute).



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General and Sector Specific Protocols



Water-Energy GHG Protocol



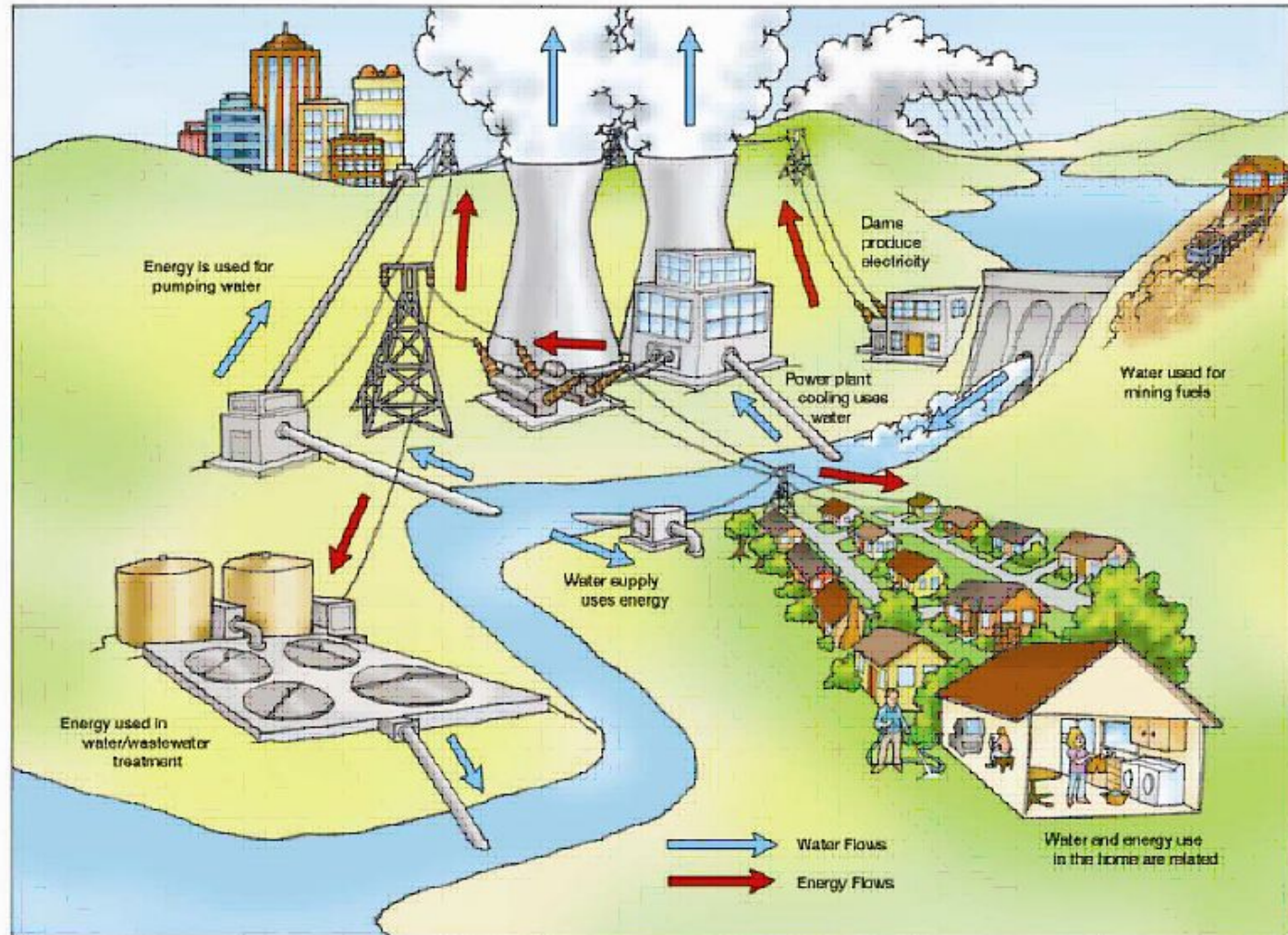
Source: <http://words.usask.ca/sustainability/>



Protocol Development Process

1. Research topic area & existing data
2. Relate to existing MRV best practices in GHG accounting
3. Propose MRV process for protocol
4. Open, consensus driven stakeholder process
5. Operationalize protocol in CRIS

Step 1: Research topic area & existing data



Step 1: Research topic area & existing data (continued)



Source: <http://www.iwawaterwiki.org/xwiki/bin/view/Articles/WaterSupplyNetwork>

What unit of measurement?

What data is available?

Who should report?

How to account for water loss?



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Step 2. Relate data to existing MRV best practices in GHG accounting

Organizational boundary?

Emission Factors?

Verification?



Source: Pacific Institute



Step 3. Propose MRV process for protocol

- ✓ Follow TCR's GRP to develop a GHG Inventory
- ✓ Collect additional data
- ✓ Calculate water-energy inventory (Scope 3 emissions relevant to water)
- ✓ Calculate intensity metrics
- ✓ Enter data into CRIS
- ✓ Verify GHG data

Benefits of calculating intensity metrics

- Help determine an organization's full impact on GHG emissions over time
- Comparable data
- Use by other Registry Members when calculating their own indirect (Scope 3) emissions
- Policy planning & financial incentives for energy/GHG reductions in water



Source: www.banking-sense.com

**Step 4: Open,
consensus driven
stakeholder
process**



**Step 5:
Operationalize
protocol in CRIS**





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Benefits to users of a Water-Energy GHG Protocol

- A standardized accounting methodology
- Allow for comparison of data using consistent accounting
- Accurate tool to better analyze the cost/benefits of water projects
- Claim credit for reducing embedded GHGs associated with water
- Communicate the benefits of water-energy & GHG reduction efforts to stakeholders

Importance of good data

- ✓ **Relevant**
- ✓ **Complete**
- ✓ **Consistent**
- ✓ **Transparent**
- ✓ **Accurate**



Source: <https://en.wikipedia.org>



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Questions?

Thank you!

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