



**Key Insights from EPRI  
Report on  
*Benefits, Existing  
Methods and  
Key Challenges of  
Aggregating GHG  
Emissions Offsets***

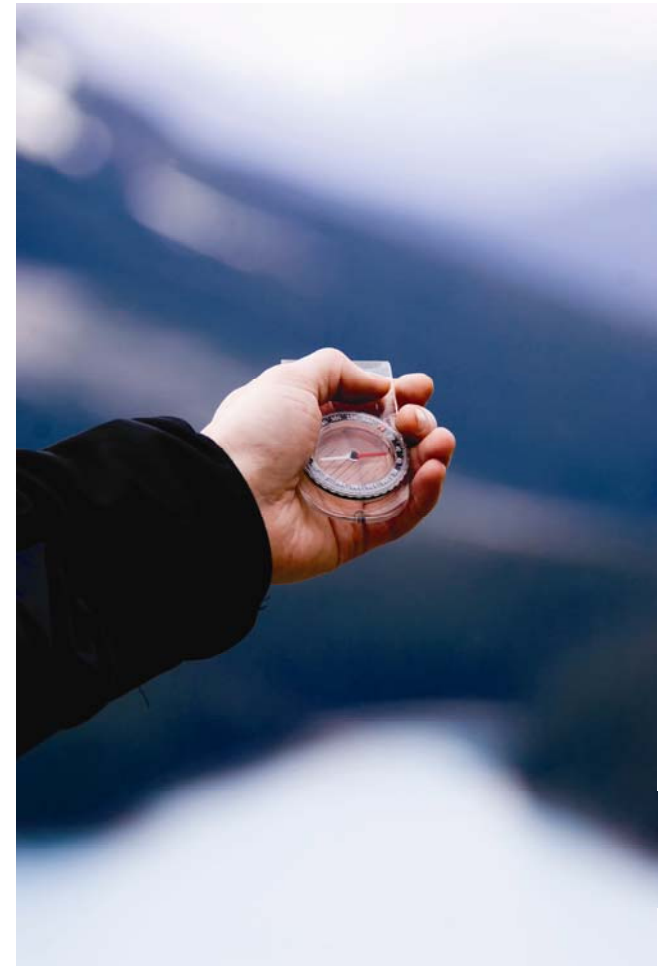
Sheldon Zakreski +  
Peter Weisberg

EPRI Offset Workshop  
March 15, 2012

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Financing Innovation and Inspiring Action

# The Climate Trust

- **Mission:** To provide expertise, financing, and inspiration to accelerate innovative climate solutions that endure
- Managed financing of over \$18M
- Ten diverse project sectors
- Projects in nine states and two countries
- Compliance program examples
  - OR, WA, MT, MA, CA
- Voluntary program examples
  - NW Natural Smart Energy
  - Colorado Carbon Fund

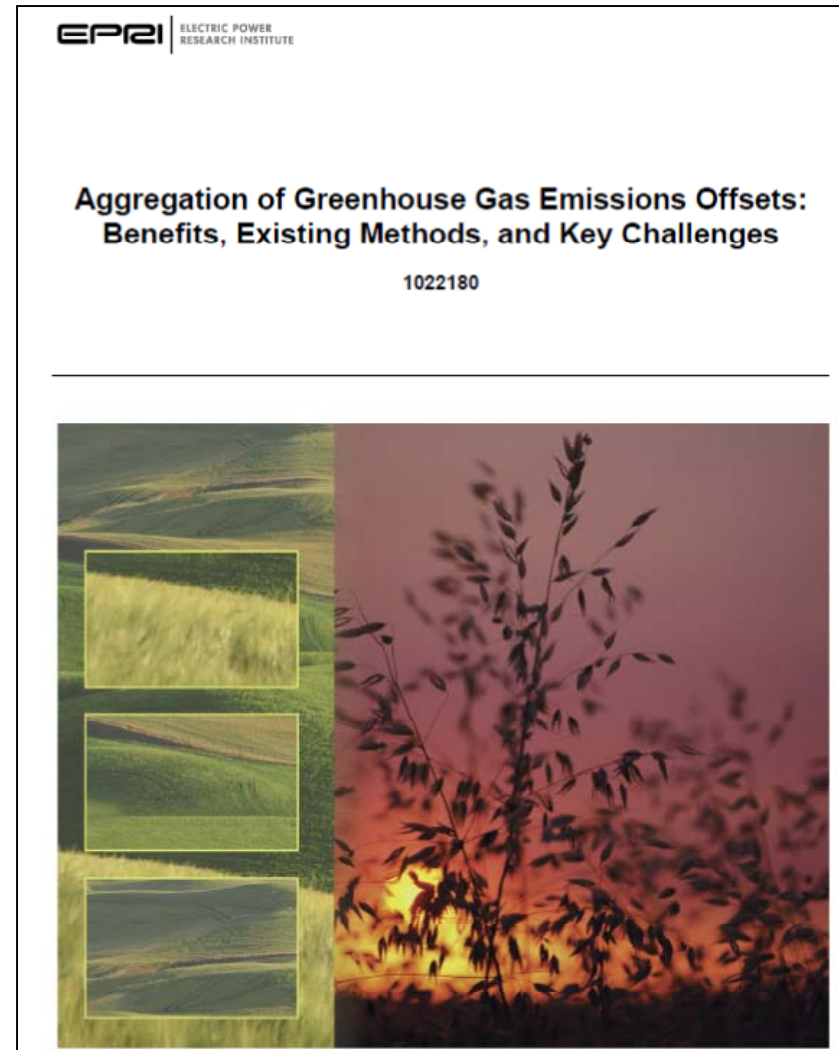


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# Outline

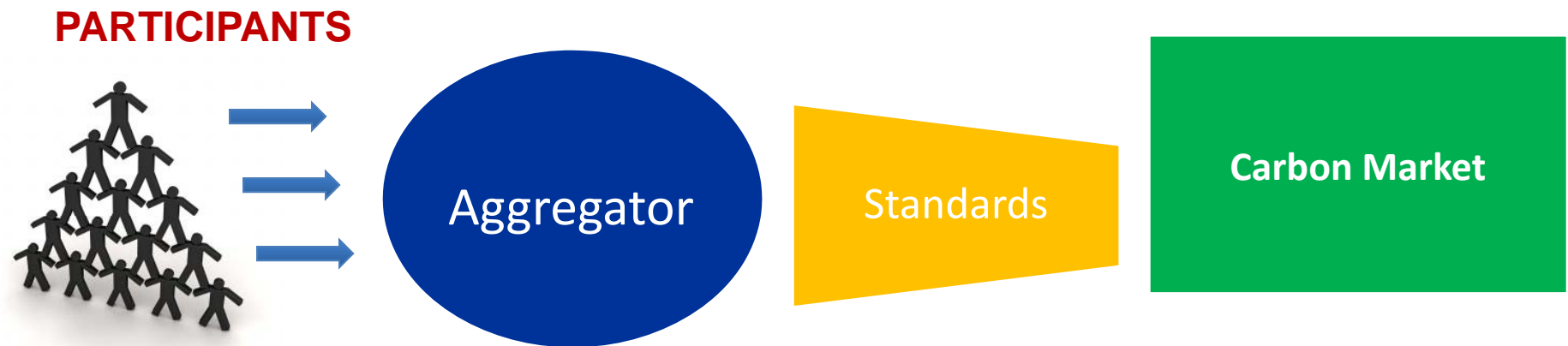
- Aggregation 101
- Why Aggregation?
- Case Studies
- Lessons Learned
- Conclusions

Research supported by EPRI but does not reflect the views of EPRI or its members.



# What is Aggregation?

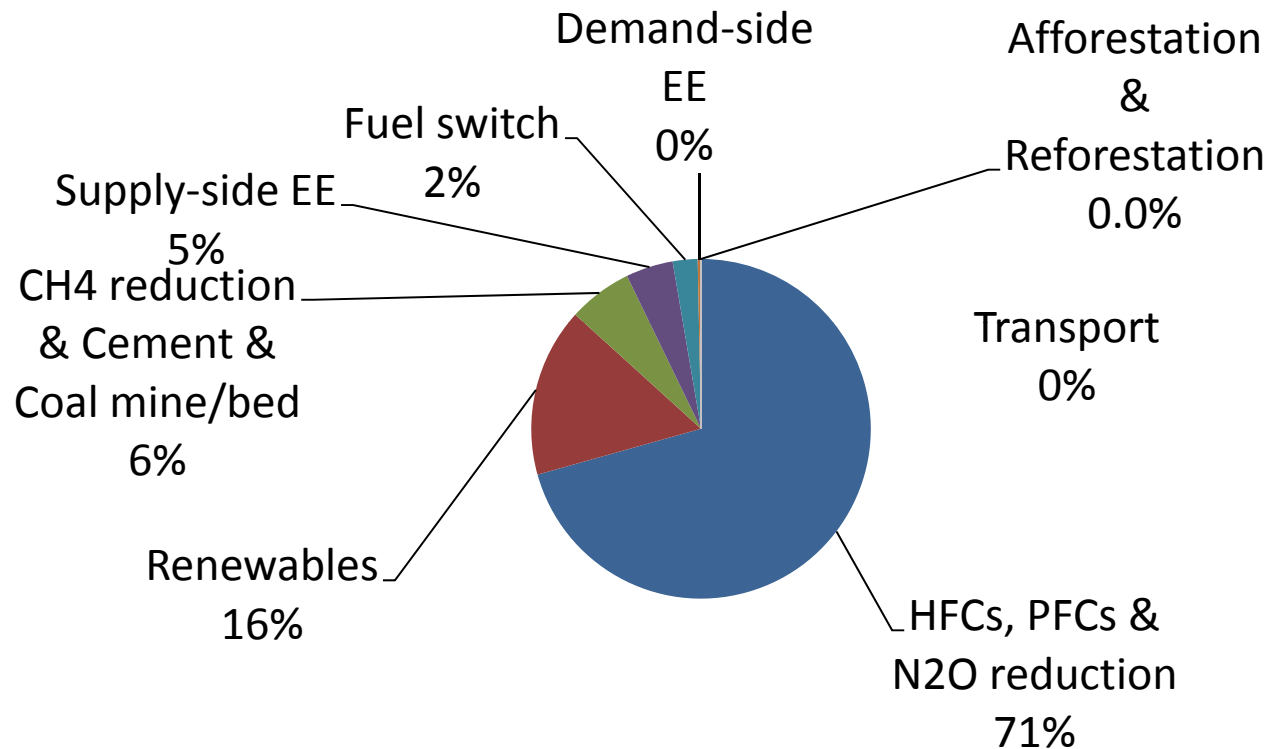
- Aggregation groups
  - geographically and/or temporally dispersed project activities
  - that reduce emissions in a similar way
  - to streamline the process of qualifying and quantifying those activities as offsets



# Why is aggregation needed?

1. Increase offset supply
  - Offsets in agriculture and forestry are fragmented and distributed geographically
2. Reduce transaction costs
  - Design, Legal, Verification
3. Mitigate project risks
  - Multiple project = “portfolio” effect which reduces the risk of any single project failing

# Markets Have Successfully Captured Large Offset Projects



Aggregation is the **ONLY** way for smaller offset projects to achieve large-scale emissions reductions

CERs=Certified Emission Reductions  
Source: Fenhann, Jorgen. CDM Pipeline. July 2011.

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# Aggregation Can Help Unlock the Offsets in Agriculture & Forestry

Activity	Average Net Impact (t/ha/yr)	Per 170 ha farm (t/yr)	Maximum Area (M ha)	Annual Potential (t CO <sub>2</sub> e)
Conventional to No-Till	1.01	171.7	72	72,720,000
Reduced Fertilizer N Application Rates	0.45	76.5	106	47,700,000
Improved Grazing Management, Rangeland	1.22	207.4	166	202,520,000

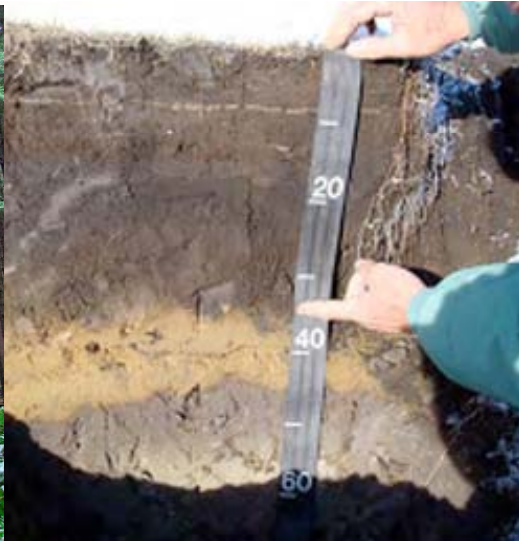
Potential to reduce > 300 million mt CO<sub>2</sub>e per year!

Source of Average Net Impact and Maximum Area: Eagle et al. "Greenhouse Gas Mitigation Potential of Agricultural Land Management in the United States." T-Agg Report. March 2011.



# Aggregation Reduces Costs and Mitigates Projects Risk

- Reduce Transaction Costs
  - Enables scale over time
  - Simplify monitoring and verification
  - Facilitate financing at scale
- Reduce risks
  - Portfolio effect across project sites
  - Buyer risks reduced by streamlined contracts





# Project Case Studies

1. Ducks Unlimited (DU) avoided grasslands conversion program in North Dakota
2. North Dakota Farmers Union's (NDFU) farmer aggregation under the CCX soil carbon protocol
3. Cool nrg CFL light bulb replacement program in Mexico under the CDM's Programme of Activities (PoA) guidelines
4. Sadia animal waste digesters aggregation program in Brazil under the CDM PoA process
5. AgCert's "bundling" of animal digester projects in Mexico and Brazil (2004-2008) under the CDM
6. Existing USDA Conservation Reserve Program (CRP)

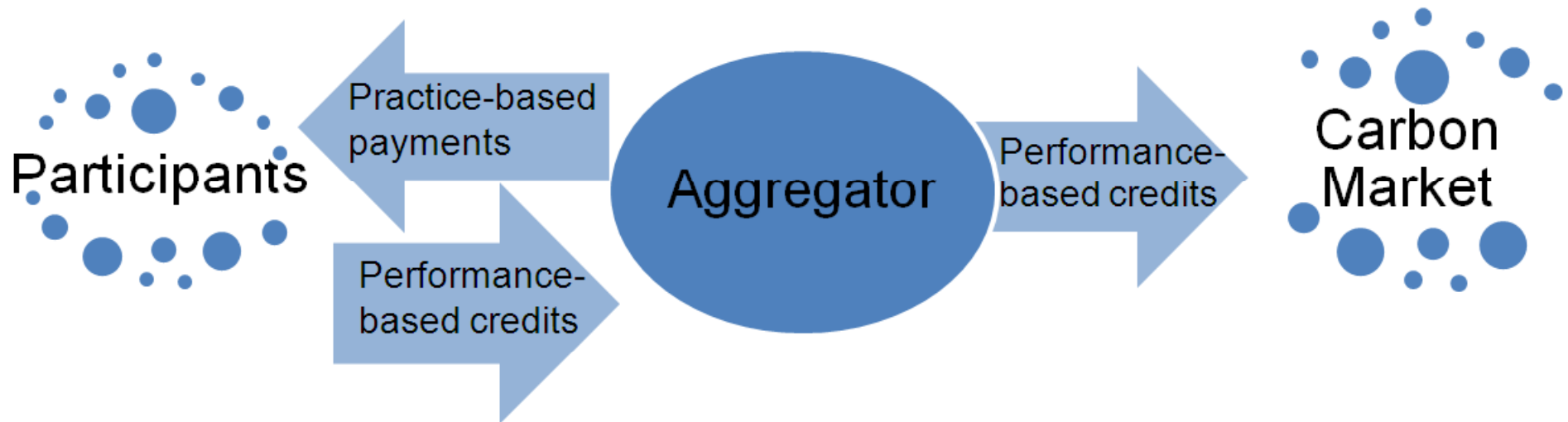
# Case Study: Ducks Unlimited

- Avoided grassland conversion
- Upfront payment to 100 landowners to enroll 50,000 acres in easement
- Methodology risk



## Lesson Learned:

Aggregators can turn *practice-based* payments into *performance-based* credits



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# Case Study: North Dakota Farmers Union CCX Soil Carbon

- National Farmers Union
- 3,900 producers,  
5.5 million acres,  
10 million offsets



## **Lessons Learned:**

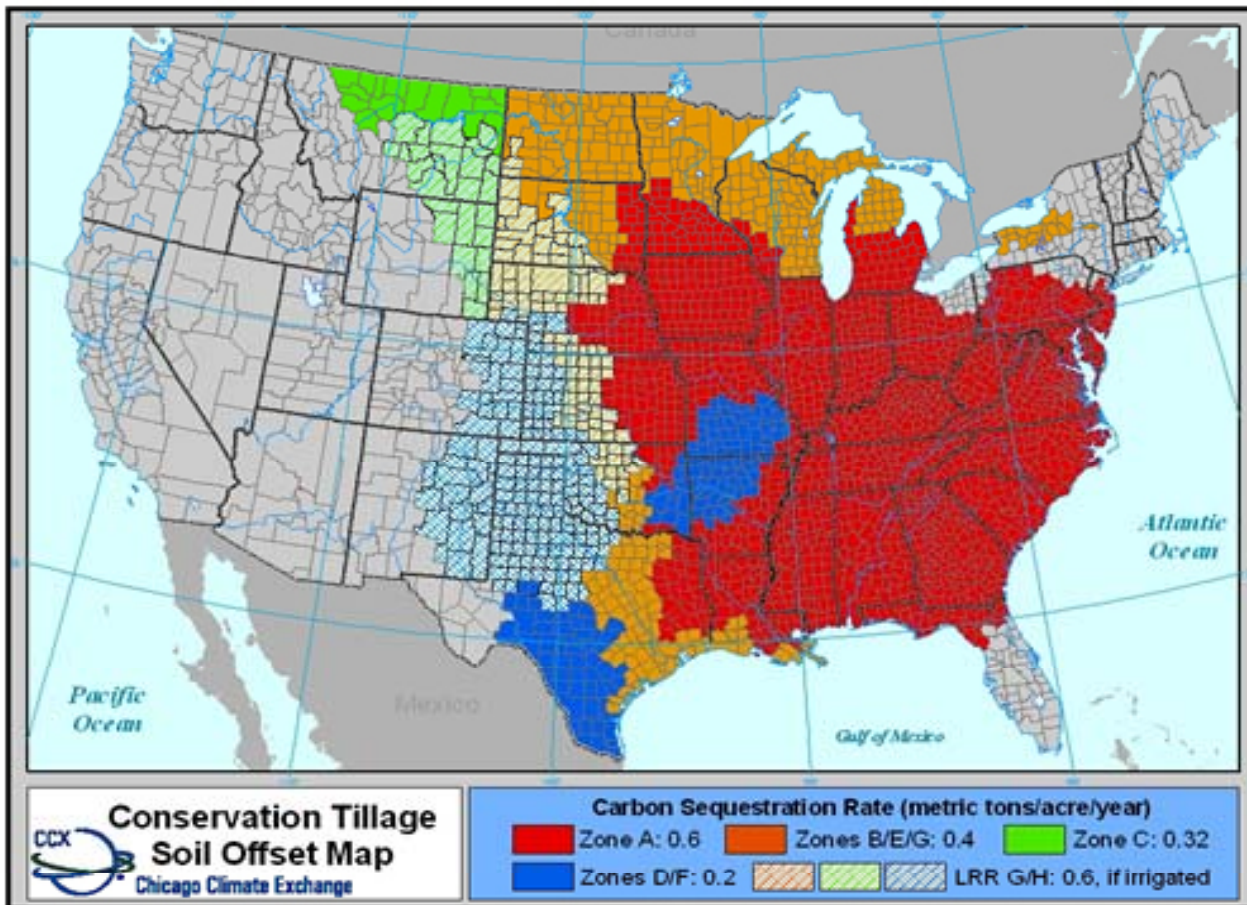
Standardized protocols with simple data and verification requirements scale quickly.



# Simple, Standardized Protocols Facilitated Rapid Aggregation

Crediting rate

- Practice-based
- Regional

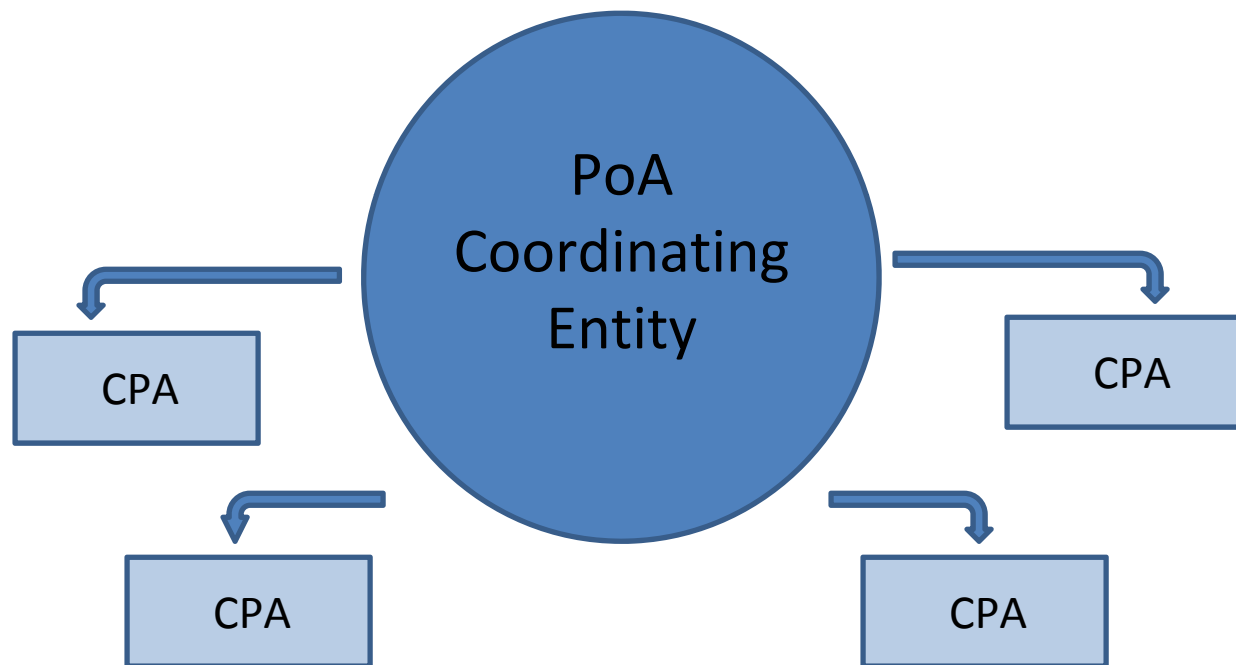


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# Simple, Standardized Protocols Facilitated Rapid Aggregation

- **Permanence**
  - Demonstrated over the five year crediting period
- **Additionality**
  - Projects after 2003 are considered additional
- **Monitoring and Verification**
  - Site visit on 10% of projects

# Clean Development Mechanism's Programme of Activities (PoA)



# Case Study:

## Cool nrg Mexican CFL PoA

- PoA aims to distribute 30-45 million CFLs
- Individual CPAs will distribute 1 million CFLs in a specific region



**Un cambio, te cambia  
y te ahorra dinero.**

Tú traes  
4 focos   
+ recibo de luz

Te regalamos  
  
4 focos ahorradores

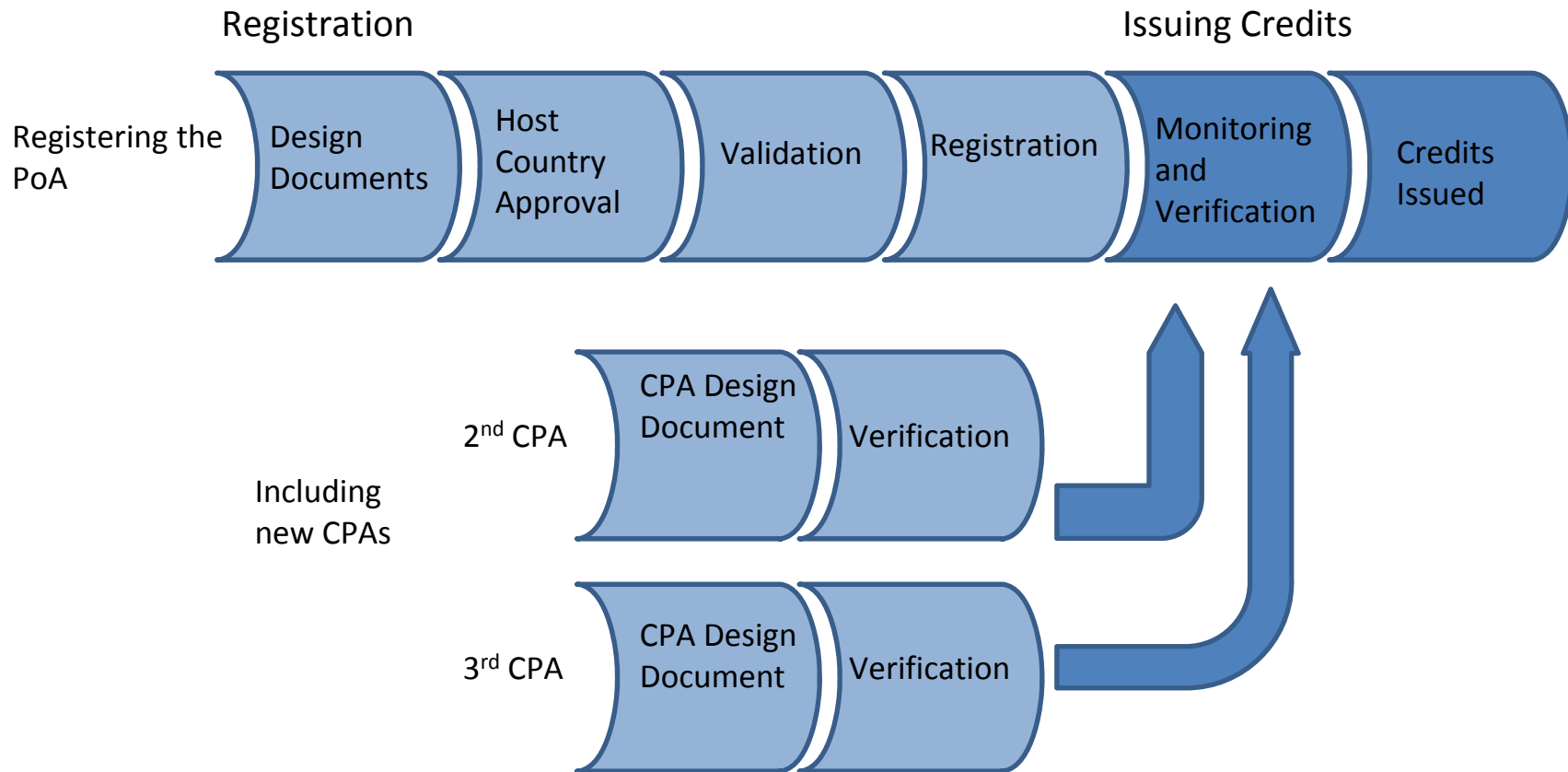
**iGratis!**  
a partir de  
**noviembre**

Hasta agotar existencias

AMPE Luz Verde

APLICA EN TIENDAS PARTICIPANTES  
Coppel Comex

# Programme of Activities



CPA = CDM Programme Activity



# Case Study:

## Cool nrg Mexican CLF PoA

- 1 CPA registered in Puebla, Mexico
- 1 million CFLs = 240,000 tCO<sub>2</sub>e reductions over 10 years



# Lesson learned: PoAs allow for

## 1. Temporal Flexibility

- PoA rule: 28 year crediting period
- Cool nrg can include new CPAs until 2037

## 2. Simplified Protocols at Scale

- PoA rule: CPAs below small-scale thresholds can use small-scale methodologies
- Cool nrg can use AMS IIC requires monitoring only 240 CFLs; AMS IJ allows defaults

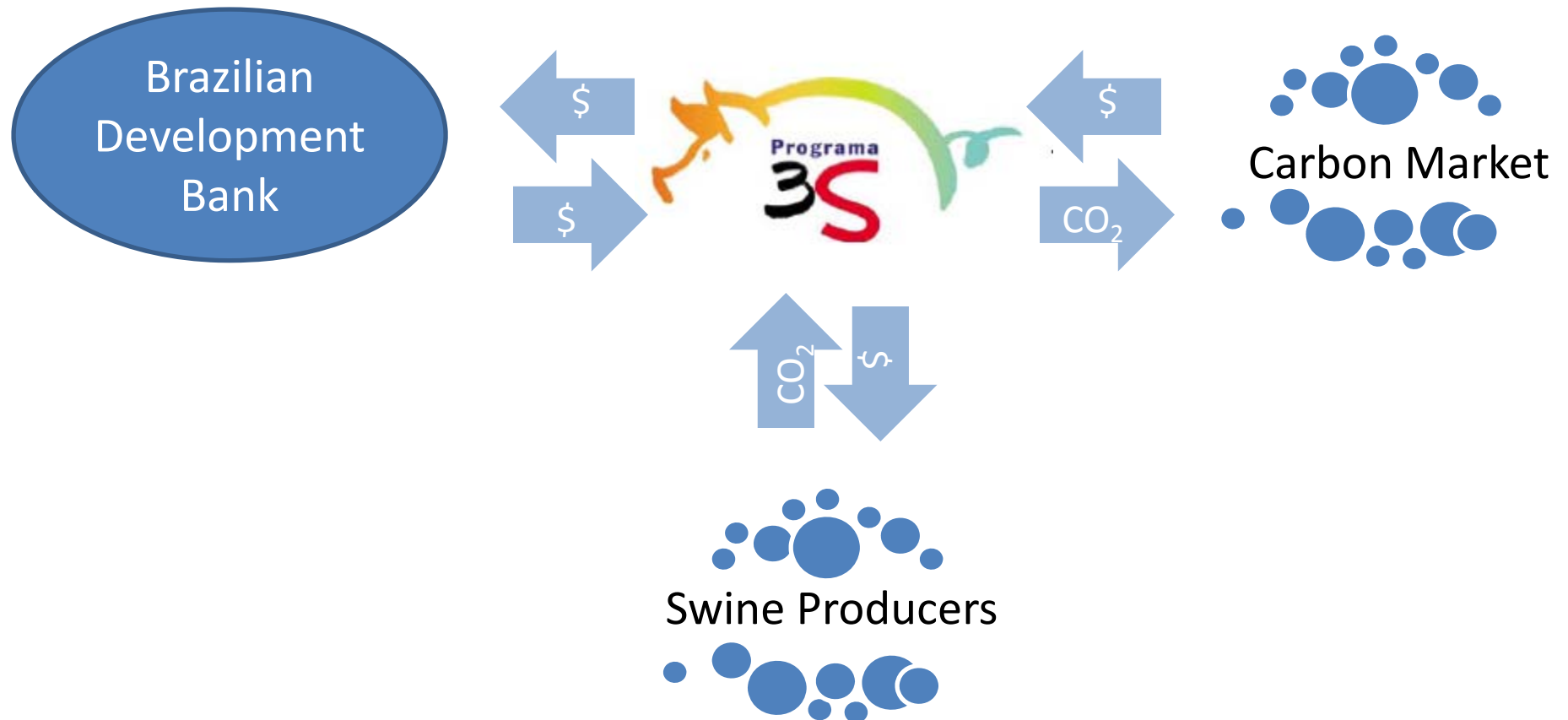
# PoA Case Study: Sadia Brazilian Swine Digester

- Brazil's largest meat exporter
- 1,050 swine digesters, 1 million CERs/year
  - (25 swine digesters in US)



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# Lesson Learned: Successful aggregation reduces participants' financial risk



# Lessons Learned:

## Aggregation can facilitate financing through

### 1. Reduced regulatory risk

- New digesters do not need approval of CDM to be included in the PoA

### 2. Scale

- Individual swine digester = \$25-50k
- Program Loan = \$38 million



# Case Study Conclusion: Key Lessons

1. Aggregators can reduce or eliminate risks for participants in their programs
2. Simplified protocols enable large participation
3. Separate rules for programs provide flexibility and regulatory certainty

## Next Steps:

### US Aggregation Program Standard

- US lacking rules, procedures and infrastructure to implement programs
- A systematic approach enables successful markets and scale of offset credits
- Needed to accelerate supply for US agriculture



Rules /Procedures for  
Stand-Alone Projects

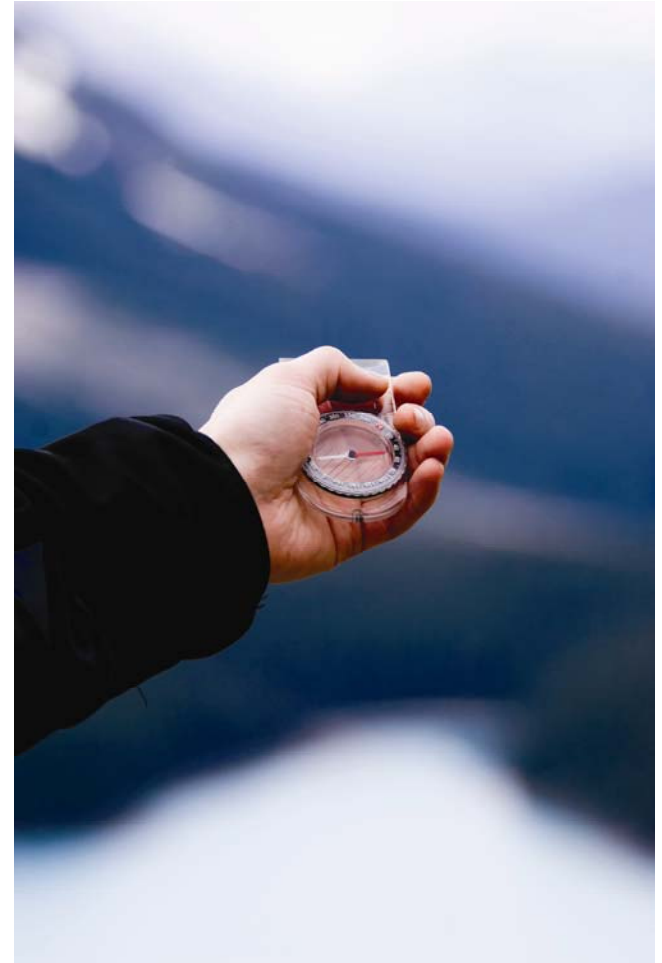
Rules /Procedures for  
Programs of Projects

# Thank you!

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