



# U.S. Carbon Markets Status & Opportunities

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- An entity for carbon credit aggregation owned by Iowa Farm Bureau Federation
- First licensed aggregator on the Chicago Climate Exchange (2003)
- Aggregation Specialists – Building a nation-wide network of contract facilitators in every state.
- Handling about 6 Million Carbon Credits annually
- “Country Elevator of Carbon Credits”
- General Farm Organization
- Part of the American Farm Bureau Federation
- 155,000 member families
- Political Representation
- Member Services

# Services

- Information
- Enrollment
- Certification
- Verification
- Credit marketing



# Approaches to Greenhouse Gas Regulation

- Traditional Command and Control
  - Regulatory agency sets standards
    - Specific technologies (scrubbers)
    - Performance (tons, tons/unit output)
- Cap and Trade
  - Regulatory agency sets overall objective (total allowable emissions)
    - Allocates or auctions emission allowances (auction = tax)
    - Firms must obtain allowances in order to emit a pollutant
      - Firms can receive allowances, allowances, or reduce emissio...



# Approaches to Greenhouse Gas Regulation

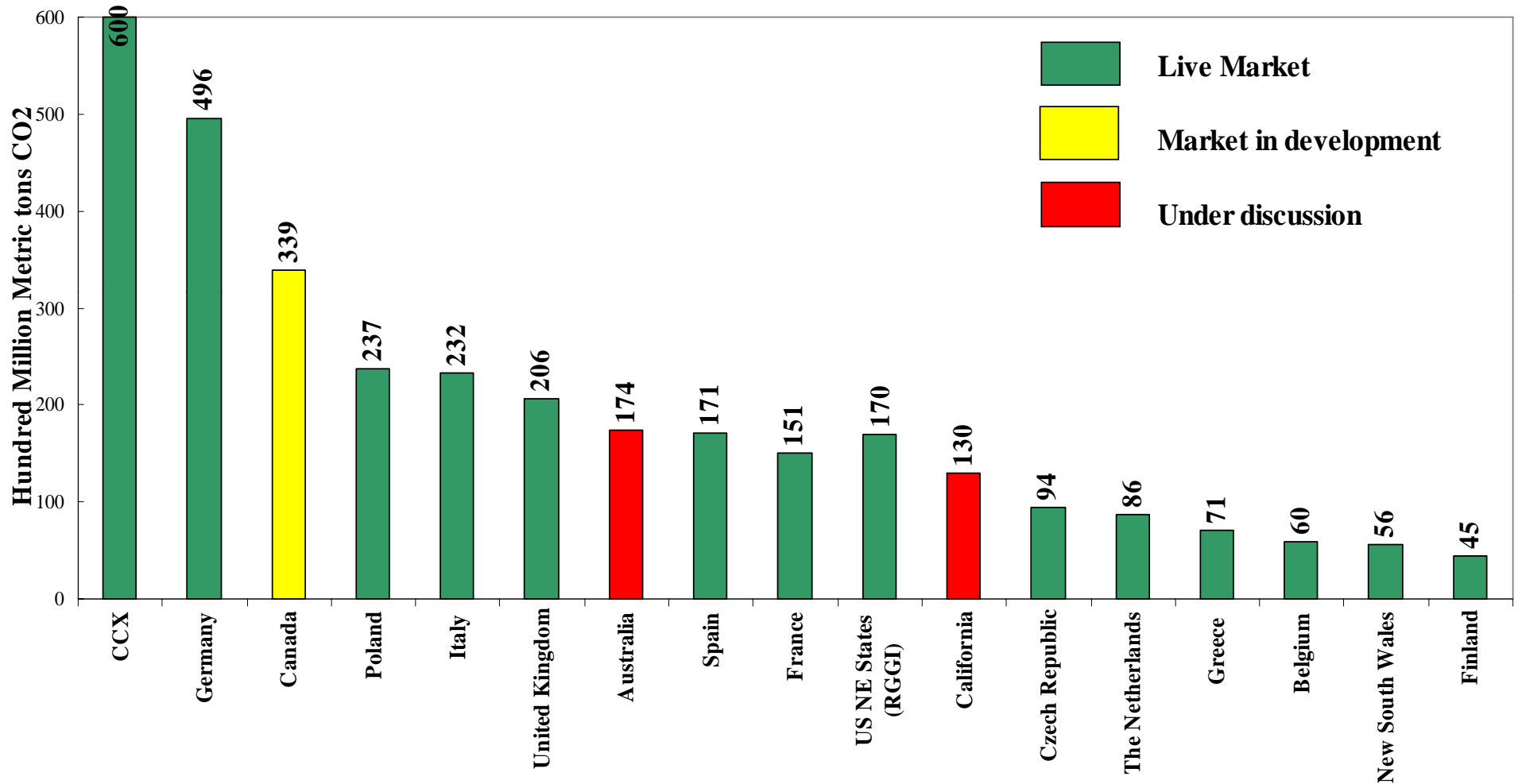
- Cap and Trade with Offsets
  - Unregulated firms can receive credits for reducing emissions
  - Regulated firms can purchase offset credits to meet regulatory requirements (“offsetting emissions”)
- Emission Taxes
  - Internalizes public damage
  - Equates costs of abatement



## Status of Carbon Markets

- Charismatic markets
  - “Greening up” products
  - Marketing
  - “Story-based” projects
- Pre-compliance markets
  - CCX, VCS, CDM,
- Regional compliance markets
  - RGGI, WCI, MGA, Alberta
- Compliance markets
  - Kyoto, EUTS, US

# Size of Live, Emerging, Possible GHG Markets



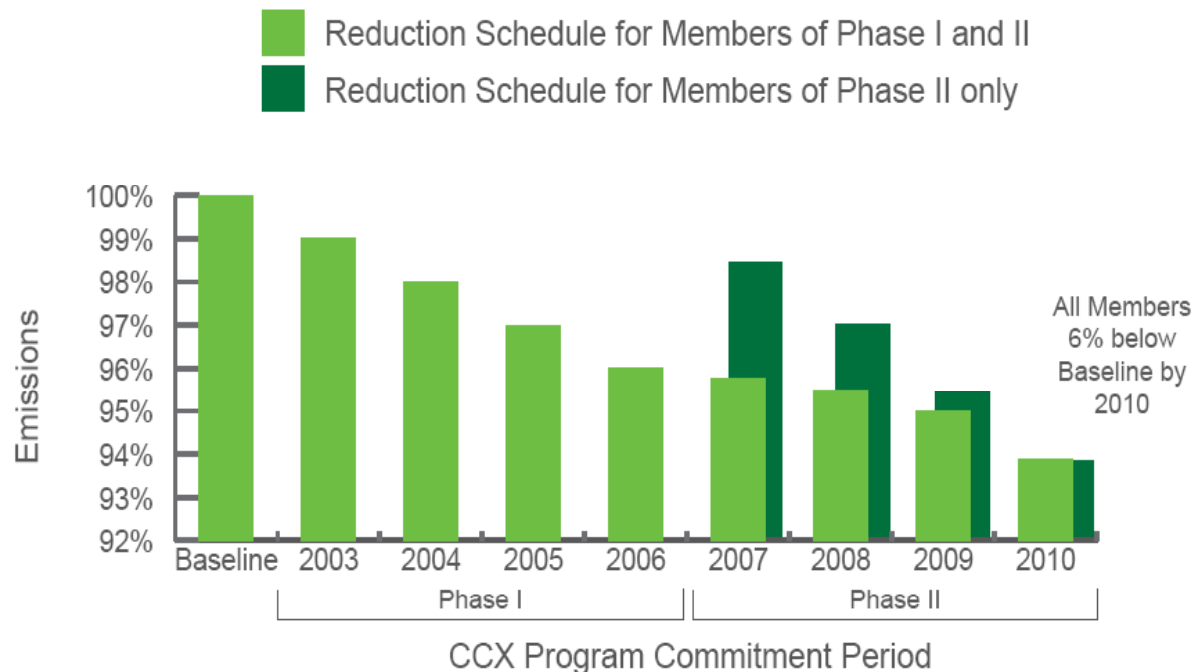
*CCX includes more industrial emissions under its legally binding cap than any country in the world*

# CCX Market Architecture (2003-2010)

**Phase I:** Commitments to reduce 1% per year below baseline from 2003-2006

**Phase II:** Commitment to reduce to 6% below baseline by 2010

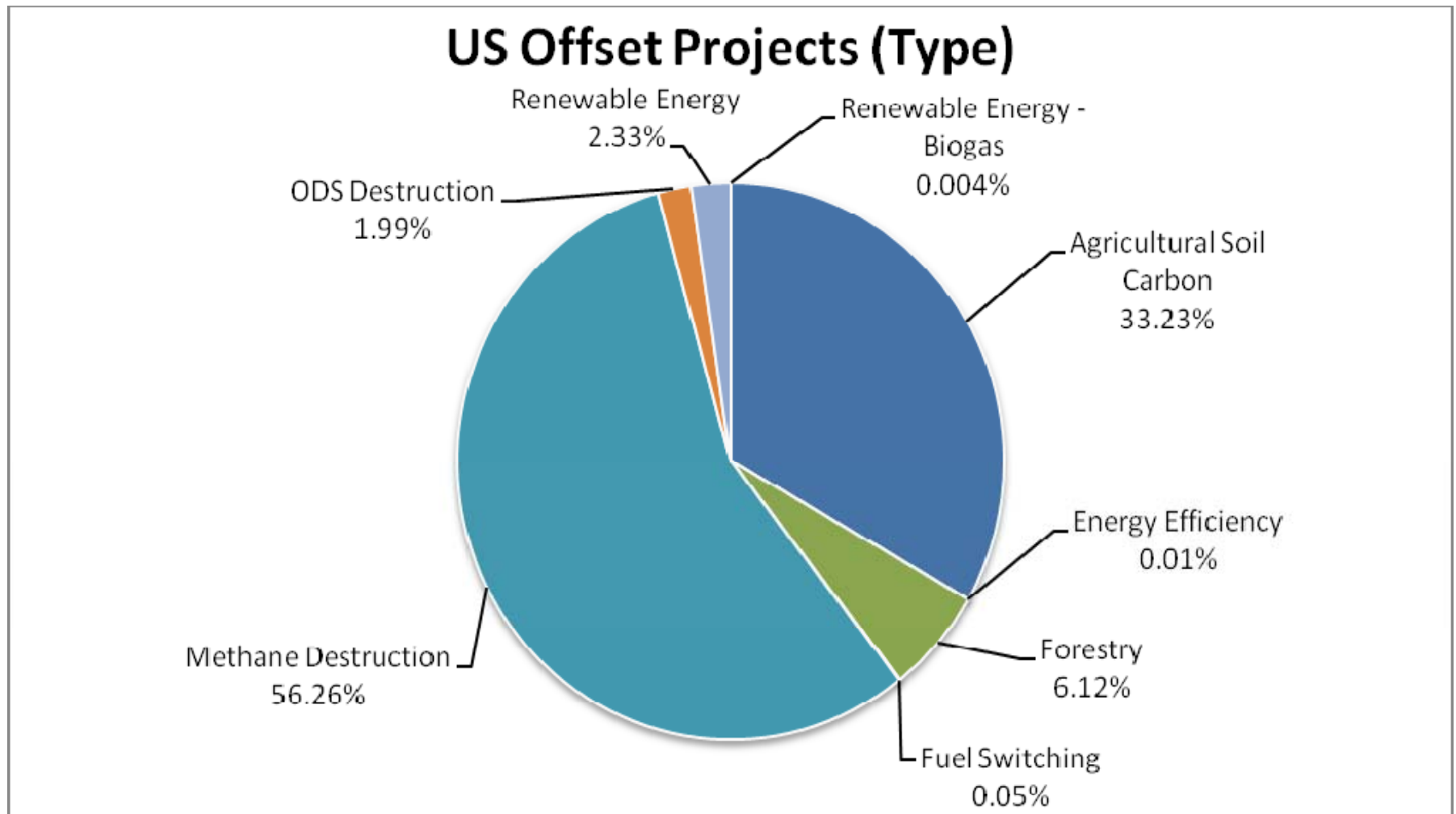
**Baseline = Avg. emissions from 1998-2001, emissions in 2000 (Phase II)**



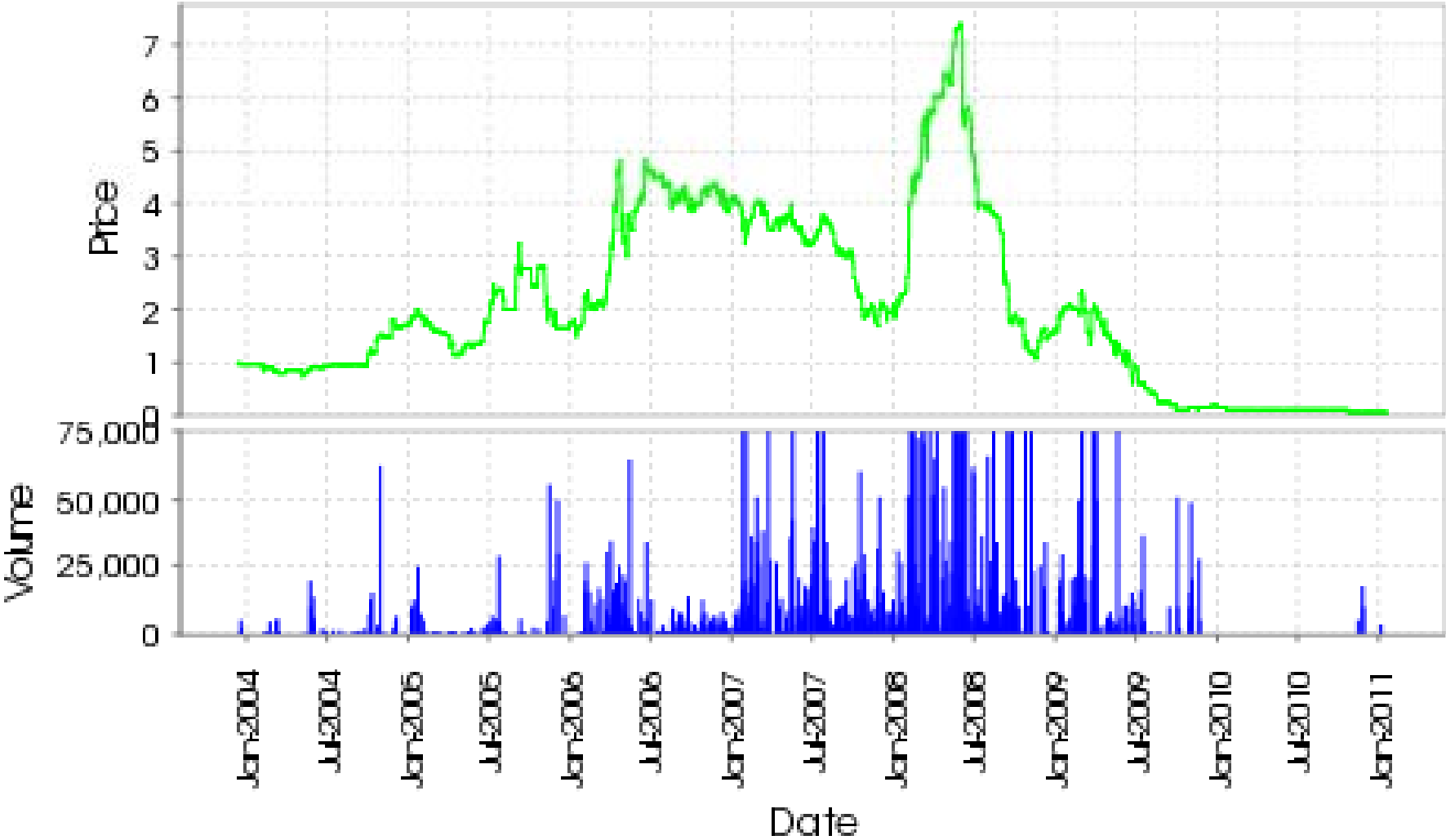
## CCX Trading Model

- Rules-based Exchange
  - Members set the rules
- Voluntary decision to join, but legally binding commitment
- Ag Offset program
  - Standardized protocols
  - Enforced through contracts

## Composition of CCX Domestic Offsets Pool through April 2009



# CCX Carbon Financial Instrument (CFI) Contracts Daily Report



# CCX Offset Projects

- **As science directs, foster emission reductions all sectors: low cost, win-win**
  - **Landfill, agricultural and coalmine methane capture/destruction**
  - **Agricultural soils best management practices**
  - **Afforestation & forest management**
  - **Fuel switching, renewables**
- **All projects must be independently verified by an approved entity**
- **CCX Offset Rules can be found at:**
  - **[http://www.chicagoclimateexchange.com/docs/offsets/CCX\\_Rulebook\\_Chapter09\\_Offsets\\_AndEarlyActionCredits](http://www.chicagoclimateexchange.com/docs/offsets/CCX_Rulebook_Chapter09_Offsets_AndEarlyActionCredits)**

**Predictable:** facilitate carbon finance

**Additional:** beyond regulation, recent

**Verifiable:** eligibility, quantity, ownership

**No cherry picking** – emitters must take entity-wide reductions

**Fungible:** All Carbon Financial Instruments are equivalent

**Avoid perverse incentives**

**Conservative crediting**

**Reserve pools for sequestration assurance**

## CCX Offsets Issued 2009

Agricultural Soil Carbon Offset	10,857,400
Forestry Offset	6,022,000
Landfill Methane Offset	1,840,700
Renewable Energy Offset - Wind	1,557,200
Energy Efficiency Offset	1,413,400
Coal Mine Methane Offset	1,159,300
Renewable Energy Offset	1,041,700
Fuel Switching Offset	904,200
Agricultural Methane Offset	483,800
Renewable Energy Offset - Biomass	472,300
Waste Disposal Offset - HFC Destruction	255,700
Ozone Depleting Substance Destruction Offset	175,300
Renewable Energy Offset - Biogas	55,800
Wastewater Treatment Methane Recovery Offset	44,300
Organic Waste Disposal Methane Offset	25,700
<b>Grand Total</b>	<b>26,308,800</b>



# Market Characteristics

- Formal compliance markets
  - Legislative authority
  - Rules
  - Enforcement
  - Regulated buyers
- Voluntary markets
  - Story
  - Variable standards
  - Buyer motivation
- Carbon Footprints
  - Accounting mechanism
    - Full or partial
    - Documentation

# Issues for Golf Courses

- Who sets standards?
- Included emissions?
- Quantification
  - Measurement
  - Modeling
- Sequestration
- Energy efficiency

## Key Carbon Offset Issues (RSVP&E)

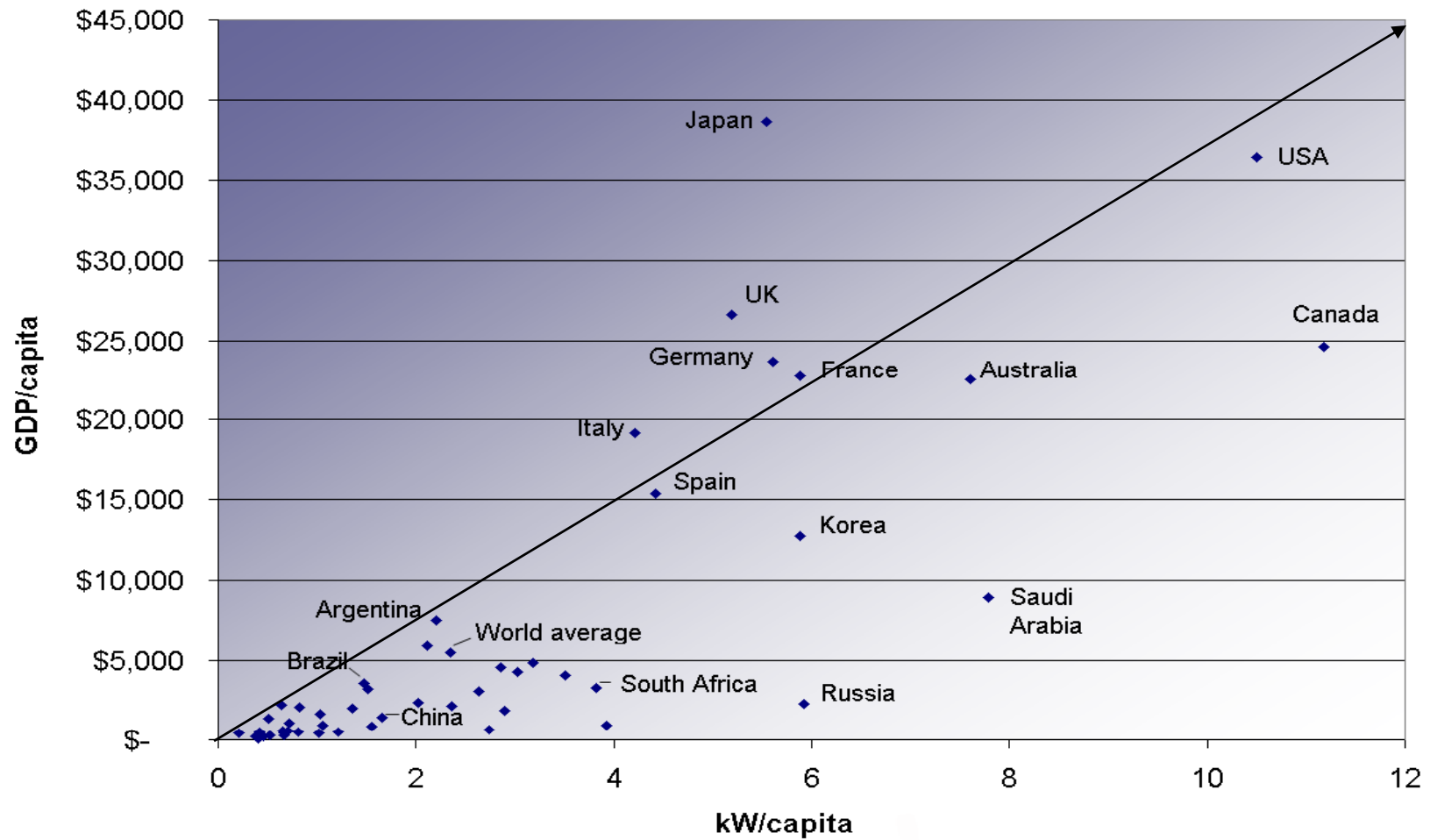
- Real – Quantification methodology
- Surplus – Additional measures
- Verified – 3<sup>rd</sup> party certification
- Permanence – Duration & reversibility
- Enforceable – Contract terms & ownership



# Where do we go from here?

- Reductions vs Intensity
- Regulations or Incentives
- Regional, National or International approach

# Electrical Power Use Efficiency



Plotted as total GDP per capita versus kilowatts used per capita

# Lessons Learned

- The US “voluntary” market has allowed ag & forestry to “learn by doing”
- Offsets are the “oil” that will enable a GHG reduction program to run smoothly
- As the carbon market matures, more opportunities are likely to emerge
- Political uncertainty can kill fledgling markets
- Voluntary markets are “fickle”
- Perfection is the enemy of progress and success
  - Mechanisms designed for developing countries are not necessarily good for the US
  - Zero tolerance does not work for ag
  - Reasonable operating criteria for offsets – must work on “working lands”



## Let us remember:

- For society as a whole, there is a very strong correlation between energy use and standard of living. Energy makes manual labor more efficient; is a catalyst for transformation of ingredients and raw products to usable goods; and energy extends the capabilities of the human mind.
- For society to prosper, it must grow. The debate cannot become one of, “maintaining the status quo with less.” It must be a debate about “how to do more in environmentally and efficient ways.”

# Questions?

For more information

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