

# Climate Change Central: Tools, Processes and Infrastructure – Alberta's Offset System

June 22, 2009



**Climate Change Central**

*Albertans taking action*

# Offset System Services – C3

Six key service areas:

1. Process and coordination for development and review of protocols
2. Hosting and developing the offset system registry user-friendly interface
3. Offset and emissions trading policy analysis
4. Drafting guidance documents for protocol development, validation, project development, and verification
5. Facilitating impartial evaluation and monitoring of the offset system
6. Providing informational support to the market such as materials to educate market players and additional tools for a well-functioning offset system



# Eligible Offsets - Policy and Design Criteria

- **Additionality in Alberta:**
  - Action (project) taken on/after January 1, 2002
  - Not otherwise required by law
  - Beyond a project baseline as defined in the protocol
- Must be *real, quantifiable and measurable*
  - Government approved protocols only (ISO 14064-2)
  - Considers all GHG's (SGER) impacted by the project
  - Transparently and rigorously reviewed
- Occur in Alberta; Registered on the Alberta Registry
- Clearly Owned
- Verified by a 3<sup>rd</sup> Party (SGER)



# Offset System Tools and Infrastructure

- Guidance Documents (Projects, Verification, Protocols - draft)
- Protocols – Most comprehensive set in NA
  - 25 Approved
  - 8 more in protocol review process (4<sup>th</sup> cycle)
  - 6 more in play for 5<sup>th</sup> cycle
- Project-based Registry - Alberta Offset Emission Registry (AEOR)
- Informational Support – Carbon Offset Solutions website and C3/AENV staff support



## AB Offsets - 1<sup>st</sup> compliance period

- 1.5 Mt tonnes of verified emission reductions
- 1 Mt offsets used for Compliance
  - Purchases - Most by power plants, small amounts by refineries and coal mines
  - 4 Project types - 55% tillage based (3), wind (2), landfill gas (1) and biomass (1)
  - Up to two times more was aggregated but not verified
  - Companies paid \$6-\$13; farmers received \$4-9 (\$2.7M)
- 7 registered GHG offset projects



## AB Offsets – 2<sup>nd</sup> compliance period

- Increase from 1.5 to 3.5 Mt of verified emission reductions
- Approximately 2.7 Mt submitted for compliance
  - Purchases – expanded number of buyers
  - Expanded Project Types (8) – Wind (5), Tillage (10), EOR (3), Biomass (3), Compost (1), Hydro (1), Acid Gas (1), Waste Water (1)
- 25 Offset projects registered and verified (almost 4 fold increase)
- Increased Value - ranged from \$10 to just under \$14/tonne
- Increased Competition – 15% transaction costs charged by project developers not uncommon



# AB Offsets: 2007-2008 Cycles

## ■ Key Messages:

- **Alberta can claim 5 Mt of verified reductions via Offset Projects (end of 2008)**
- **Alberta has seen 32 projects in 18 months**
- **Offsets are a growing part of compliance – 25% in 2007 and 31% in 2008**
- **Alberta is continuously improving the System through evaluation and audits**



# Continuous Improvement

- Modified the Protocol Review Process
  - Includes a new step to mitigate risk
  - Technical Protocol Plan/Technical Seed Documents
  - Stakeholder feedback earlier on
- AENV engineers participating on Review stages
  - Increased understanding from ground zero
- Consistency in Project Documents
  - Ready to test run the Project Documentation Guides
    - Offset Project Plan and Offset Report
    - Verification Report
- Protocol Guidance Document



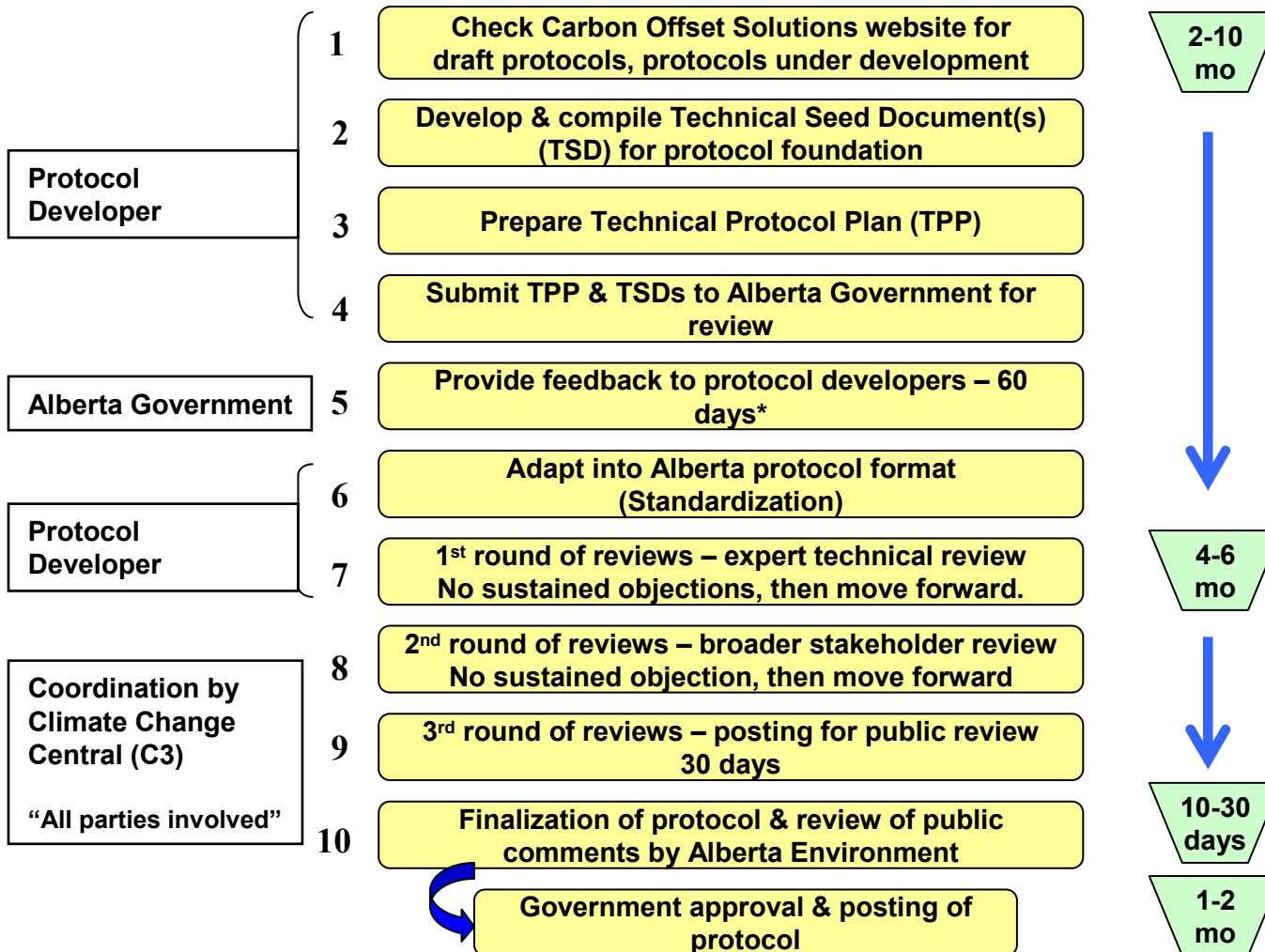
## Steps Before the Review Process – Traditional:

- **Phase 1 – Scoping and Compilation of Available Science**
  - Based on transparent, peer reviewed science, best practice guidance, scientific input/review from leading researchers and technical experts
  - ISO 14064-2 Framework; *technical scoping document*
- **Phase 2 – Science Discussion Document**
  - *Science Discussion Paper* (SDD) compiled and reviewed by outside experts
- **Phase 3 – Science Coordination**
  - SDD used to coordinate science, foster discussion, identify options and build consensus on key protocol factors
  - 80% Consensus to advance options; *Technical Seed Document*
- **Phase 4 – Protocol Standardization into Alberta Template**

*Enters the Alberta Review Process*



# Protocol Review and Milestones Today



# Alberta Protocol Review Process

- Fall of '07 – Evaluated by CSA GHG Services Group
- Jan 1, '08 – Industry invited to develop Protocols
- Innovation in Project Types - incredible response
  - Covering the expanse of unregulated activities
  - No brainers to new technologies
  - BUT...
- Level of technical development and transparency waned
- Noticed by outside observers – concern over robustness and extent of the input

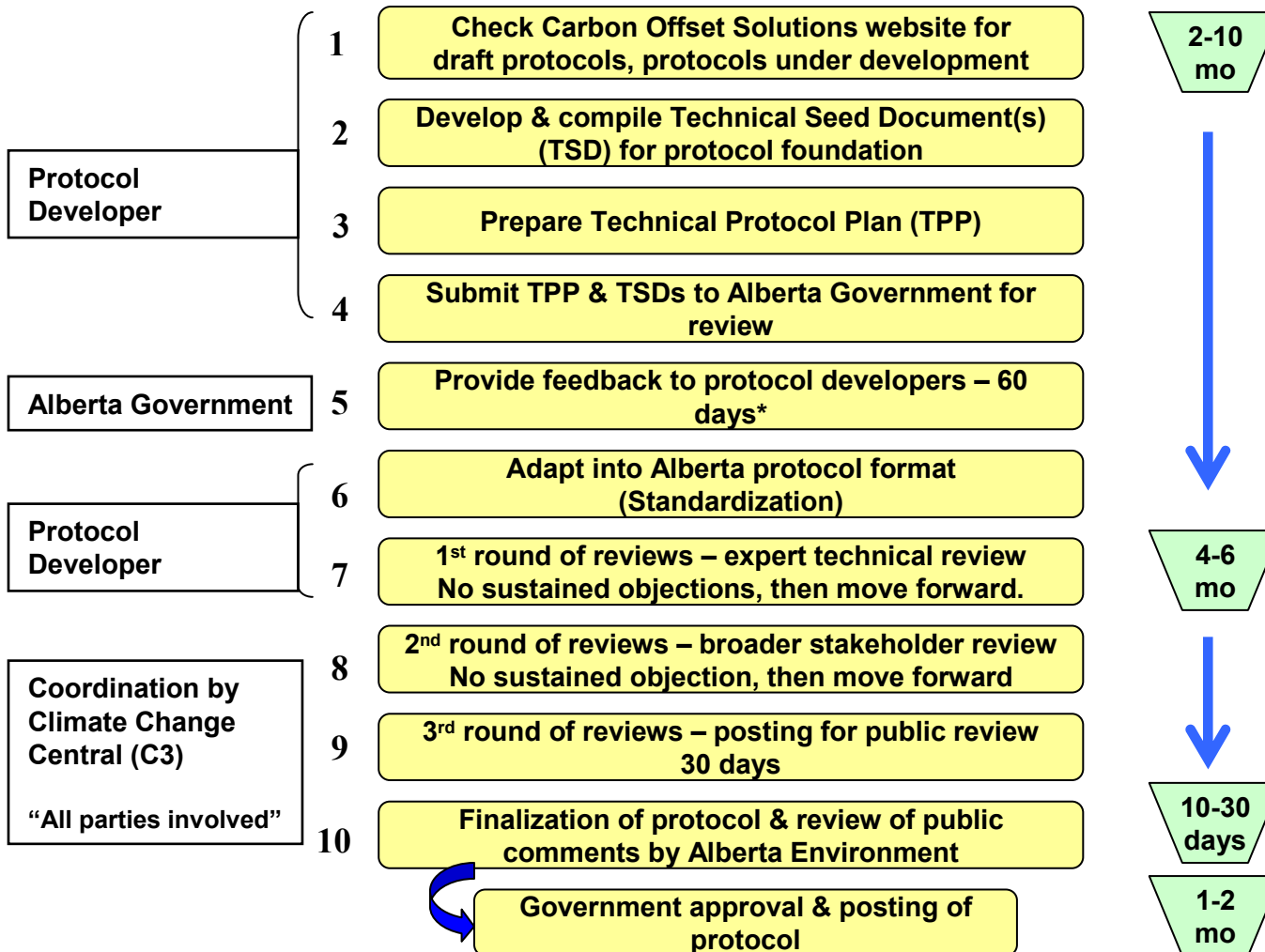


# Process and Protocol Guidance

- Lays out Expectations and roles
- Process and Timelines (next slide)
- Technical Protocol Plan
  - Earlier engagement of C3/AENV dialogue
  - Coordinated with relevant government departments
  - Assesses feasibility of the Project and Baseline against the Offset Policy and Design Criteria
- Still referred to even in the Final Review



# Protocol Review and Milestones Today



# Technical Protocol Plan

- First Cut to test whether a future Protocol meets the Policy Criteria
  - *Project Type/Reductions Anticipated – scope, magnitude, completeness*
  - *Background Info/Best Practice Guidance – accuracy, conservative*
  - *Regulatory, Legal Requirements and/or Incentive/Grant Programs - additional*
  - *Barriers to Implementation - risks*
  - *Review of Technology – penetration levels; proprietaryness*
  - *Review of Existing Projects -activity levels; adoption levels*
  - *Summary of Quantification Approaches used - validity*
  - *Other Impacts (assuring permanence methods)*
  - *Assessment of Baseline Scenarios – additionality tests*
  - *Selection of Baseline Scenario - justification*
  - *Definition of the Project Condition*
  - *Functional Equivalence - relevance*
  - *Flexibility Mechanisms - completeness*



# Alberta Offset System

## Approved Quantification Protocols

- **1<sup>st</sup> Cycle:**
  - Reduced/No-Tillage
  - Afforestation (Planting Trees)
  - Pork Operations
  - Biogas
  - Beef Feeding of Edible Oils
  - Beef Lifecycle
  - Biofuels
  - Compost
  - Biomass Combustion
  - Energy Efficiency
  - EOR (2)
  - WHR (2)
  - Landfill Gas
- **2<sup>nd</sup> Cycle:**
  - Beef Days On Feed
  - Acid Gas
  - Renewables (3)
- **2<sup>nd</sup> Cycle (cont')**
  - Aerobic Landfill Bioreactor
  - Model Freight Shift
  - Road Rehabilitation
- **3<sup>rd</sup> Cycle:**
  - Waste non-incineration
  - Revised Composting
- **4<sup>th</sup> Cycle:**
  - Waste Water



## Alberta Offset System

### Pending and Submitted Quantification Protocols

- **4<sup>th</sup> Cycle Still Under Review (Review closed Mar 5)**
  - N<sub>2</sub>O Abatement
  - Dairy
  - Bitumen Binder
  - Instrument Gas Conversion
  - FlyAsh
  - Engine Fuel Mgmt/Gas Capture
- **5<sup>th</sup> Cycle Deadline – (need to submit by Sept 15<sup>th</sup>)**
  - Pumping Station Retrofits
  - Fugitive Emissions
  - Pulp Sludge Application to Ag Soils
  - Nitrous Oxide Reduction from Ag Soils
  - Reduced Summerfallow
  - Residual Beef Feed Intake



# Protocol Revisions

- Government gives credit duration period of 8 years (maybe 5+)
  - ‘Sink’ Protocols longer (Soils 20y; Afforestation 60y)
- Protocols reviewed every 5 years – based on Best Available Science of the Day
- Grandfathering of Projects with “Protocol of the Day”
- But – if a direct problem in quantification – amendments immediate (eg. *Afforestation*)
  - If impacts existing projects – stakeholder consultation
- Anticipate protocol reviews will be a collaborative, transparent process



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