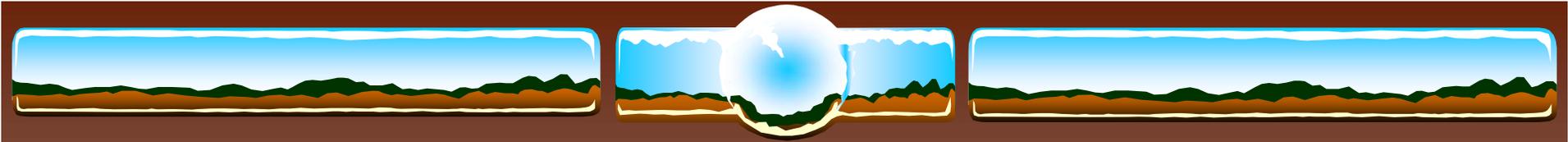




**GHG Considerations for a
NC Point Source Emission
Inventory
+
TCR, etc.**

James H. Southerland, QEP – Raleigh Central Office
Division of Air Quality
NC Department of Environment and Natural Resources



NC & GHG





Basic Purposes and Intents for This Presentation

- ✓ Give a brief overview of the NC climate action history and status.
- ✓ Explain NC's plan for merging the routine Criteria/HAP/TAP emission inventory and the GHG inventory.
- ✓ Provide audience with some background and insights into "The Climate Registry" and what it might mean to them and their state.



Background – CSA CO₂ Reports

- ❖ *CSA Passed 2002 mainly for NO_x and SO₂ controls and reductions*
- ❖ *Section 13 required 3 reports by DAQ on Sept. 1, 2003, 2004 and 2005 on CO₂*
 - ❖ *2003 Report was “State of Science”*
 - ❖ *2004 Report was “Range of Options”*
 - ❖ *2005 Report contained Commitments and “Recommendations”*



Two Separate, But Coordinated, Activities

- ❖ **Climate Action Plan Advisory Group (CAPAG)**
 - ❖ DENR Initiated & Managed
 - ❖ Derived from Clean Smokestacks Act
 - ❖ Focus on Mitigation Options & Economic Benefits
- ❖ **Legislative Commission on Global Climate Change (LCGCC)**
 - ❖ Legislature Initiated Late 2005
 - ❖ Guidance on Seriousness of Problem for NC
 - ❖ Goal/Caps for Reduction in GHG?
 - ❖ Mitigation Options?



CAPAG

Develop Climate Action Plan

- ❖ ~ 40+ Stakeholders from wide sectors identify/prioritize range of individual mitigation options (300+)
- ❖ Technical Consultant & five NC work groups complete technical/economic analysis of selected options (53+)
 - ❖ Quantify GHG Emissions Reduced (CO₂e)
 - ❖ Analysis/Estimates of Cost / Benefits
 - ❖ Includes Jobs-Potential Estimates
- ❖ Consensus of Advisory Group Determined
- ❖ Support Commission on Global Climate Change



Mitigation Option Sectors (TWGs)

- ❖ *Agriculture, Forestry and Waste Management*
- ❖ *Energy Supply*
- ❖ *Residential, Commercial, Industrial Energy Use*
- ❖ *Transportation and Land Use*
- ❖ *Cross-Cutting*



LCGCC

Established by Legislature in 2005 Session

34 Members; inc. 18 Legislators – Others-

Broad Cross Section of Stakeholders

Assess Impacts of Climate Change on NC

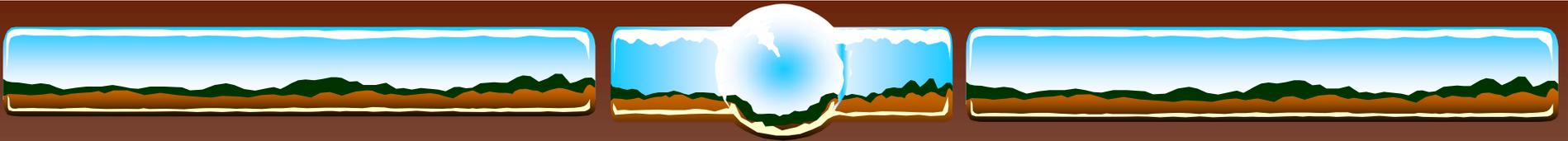
Need for Goal of GHG Reductions in NC

If “Cap” is needed, how stringent?

What Executive and/or Legislative actions are recommended?

Interim Report – Soon

Final Report April 15, 2008



Relation of CAPAG to the LCGCC

❖ CAPAG/DAQ efforts complement and support Commission

❖ Technical Support and advice on GHG Reduction Options, Including Costs-Benefits, Jobs, etc.

❖ Several LCGCC members on CAPAG and Technical Workgroups (TWGs)



CAPAG Adopted Options

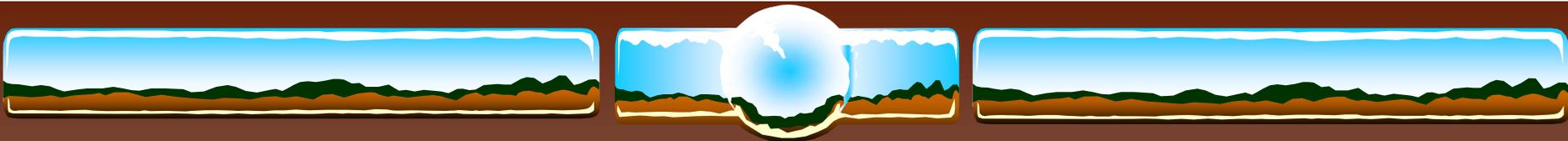
re: registries, etc (only)

Cross Cutting (CC) early *recommendations*:

- ❖ GHG Inventories and Forecasts
- ❖ GHG Reporting
- ❖ GHG Registry

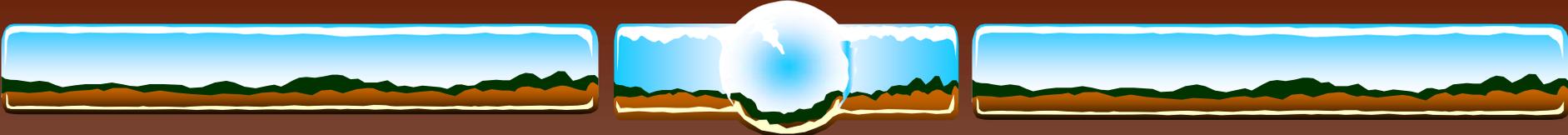
These boil down to adapting current EI process (first for TV point sources) and adding to expanding GHG-specific efforts

- ❖ NC will initiate a mandatory TV GHG *inventory* for CY 2008, reporting June 30 2009
- ❖ Lots of prep work still required before then



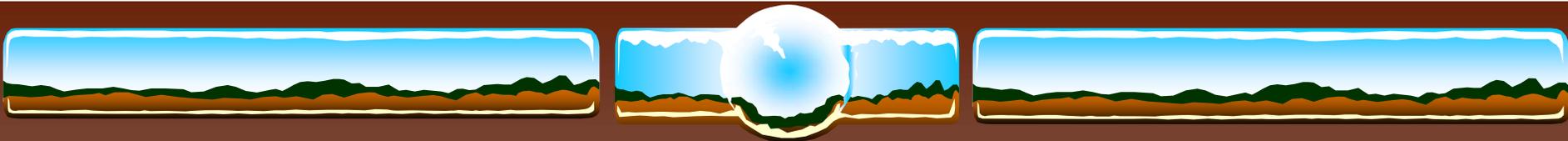
GHG to Report-1

GHG	CAS	<i>de minimis</i>
HFC	hydrofluorocarbons	(pounds
13453526	HFC-23 (Fluoromethylene)	1
354336	HFC-125 (C2HF5)	1
420462	HFC-143a (C2H3F3)	1
431890	HFC-227ea (C3HF7)	1
690391	HFC-236fa (C3H2F6)	1
75376	HFC-152a (1,1-Difluoroethane)	1
811972	HFC-134a (1,2,2,2-Tetrafluoroethane)	1



GHG to Report-2 (ct' d)

PFC	Perfluorocarbons* (<i>mainly solvents</i>)	de minimis
355259	Perfluorobutane (C4F10)	1
355420	Perfluorohexane (C6F14)	1
75467	Trifluoromethane	1
75730	Perfluoromethane (CF4)	1
76164	Perfluoroethane (C2F6)	1
76197	Perfluoropropane (C3F8)	1
7783542	Nitrogen Trifluoride (NF3)	1



GHG to Report-3 (ct'd)

Other		<i>de minimis</i> <i>(pounds)</i>
10024972	Nitrous Oxide (N ₂ O)*	2,000
124389	Carbon Dioxide (CO ₂)*	10,000
2551624	Sulfur Hexafluoride (SF ₆)*	1
74828	methane	1,000



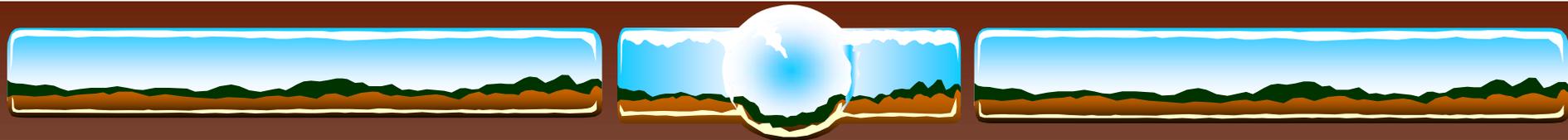
The Climate Registry (TCR), aka the “multi-state registry”

- ❖ NC represented on formational work group
- ❖ Approximately 30 (+) states have expressed interest;
All states invited to join.
- ❖ Decisions due in late April (NC, 30 other states, 2 tribes
and 2 Canadian Provinces signed up)
- ❖ Governed by a board and chartered as a 501 (c) 3, not
for profit
- ❖ Based mostly on California system (CARROT)



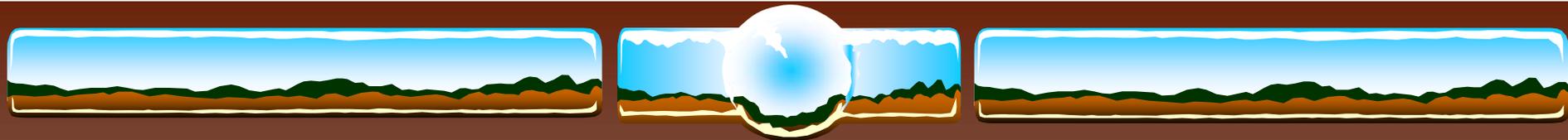
New! NACAA/Air Directors Principles

- ❖ NACAA membership “just” approved a statement of principles on global warming that support:
 - ❖ Adopting a mandatory economy-wide program to reduce greenhouse gas (GHG) emissions,
 - ❖ that is flexible & allows a additional strategies to be adopted.
 - ❖ sector-specific strategies for EGU’s & motor vehicles.
 - ❖ recognition of the federal lead on an economy-wide program but with a strong role for states and localities.
 - ❖ A strong recognition that federal legislation should not limit state or local governments from more stringent actions.



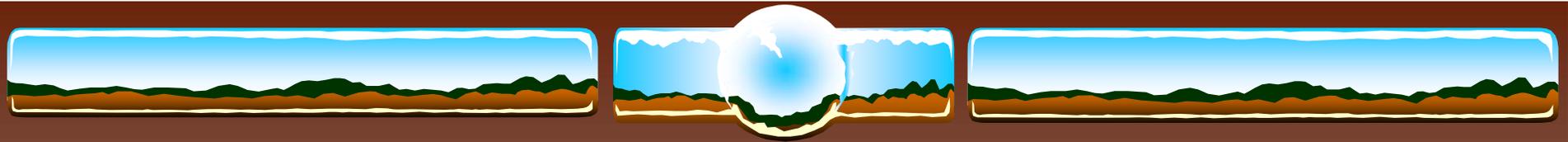
TCR Considerations and Issues To Be Determined/resolved

- ✓ Basic Definitions, e.g. *inventory* vs *registry*?
- ✓ Voluntary vs Mandatory?
- ✓ Means for data entry into TCR?
- ✓ Submitted by facility or through state?
- ✓ Third party certification required, but means to define, train, provide, etc. certification credentials and/or certification services?
- ✓ Baseline year or years?
- ✓ How to handle existing acid rain reporting for CO₂ by EGU's?



TCR Considerations and Issues To Be Determined/resolved-2

- ✓ Methods to calculate/estimate emissions?
- ✓ Routine interface with Agency Criteria/HAP emission inventory or independent system?
- ✓ Facility and Equipment ID numbers?
- ✓ Any purpose to associate stack/location information? (Much different than SIP EI)
- ✓ Reasons for any difference in reporting dates?
- ✓ How count “bio” emissions – all contribute to atm. conc.



TCR Considerations and Issues To Be Determined/resolved-3

- ✓ Facility Ownership Issues.
 - ✓ Facility (entity) only?
 - ✓ Company wide?
 - ✓ National or international or other geographical?
 - ✓ By financial/organizational structure?
 - ✓ Report totals each year or also include “reduction projects” and diminished emissions for banking/sale?
 - ✓ Deal with the age-old nemesis of proprietary/confidential data submittals – Some states (NC) can’t handle well.



TCR Considerations and Issues To Be Determined/resolved-4

- ✓ Questions to answer at beginning:
 - ✓ Why is the GHG inventory needed? What will its uses be?
 - ✓ Cap on State Emissions?
 - ✓ Trading/Sale?
 - ✓ To allow/facilitate sources to showcase their environmental conscience and marketing aspects?
 - ✓ To assist in developing other mitigation options for others?
 - ✓ Others?



Questions?

Discussions among audience?

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