ALBERTA AND THE ENVIRONMENT

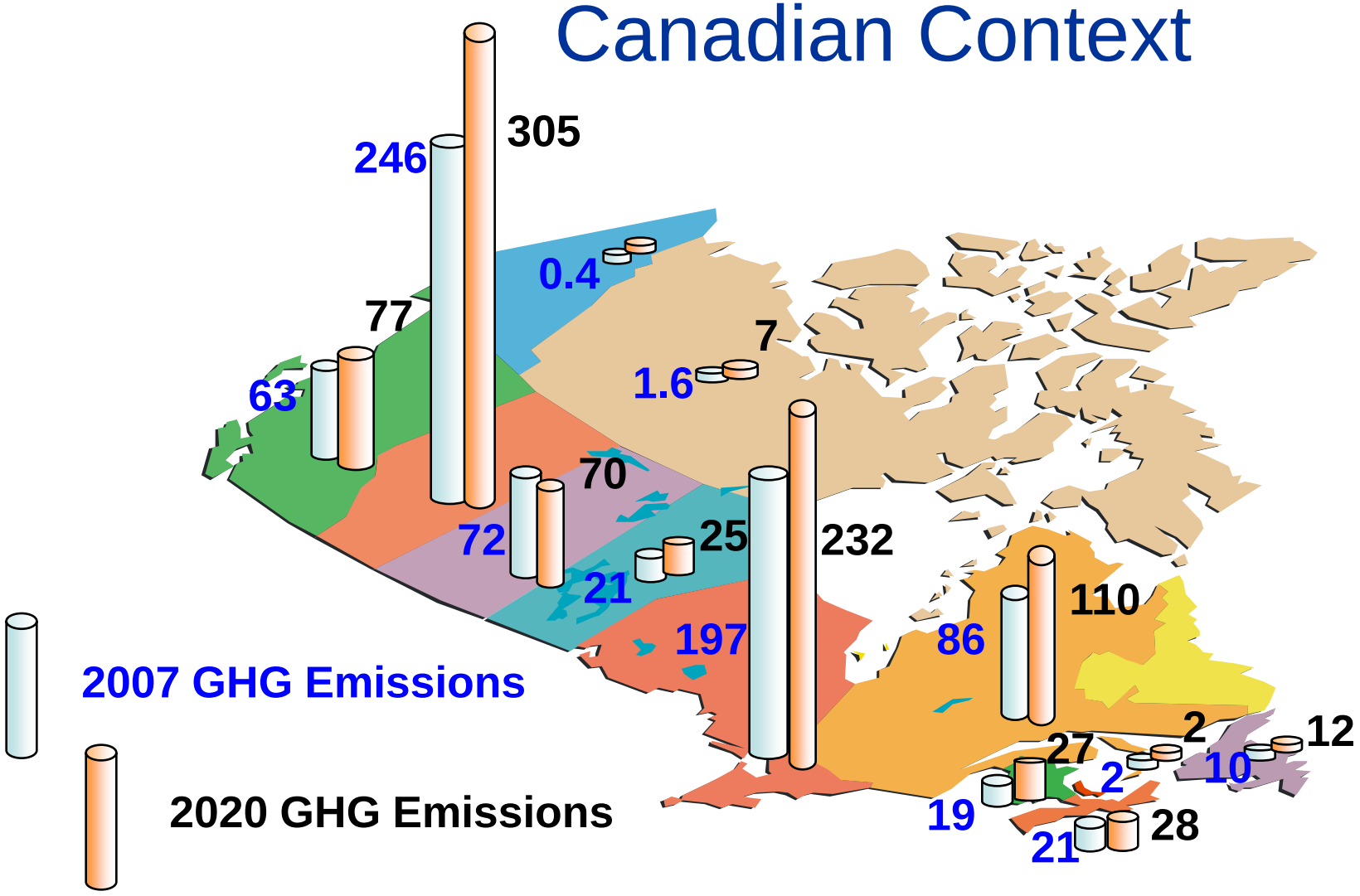
Alberta Forest Growth – Forest & Energy

October 20, 2010

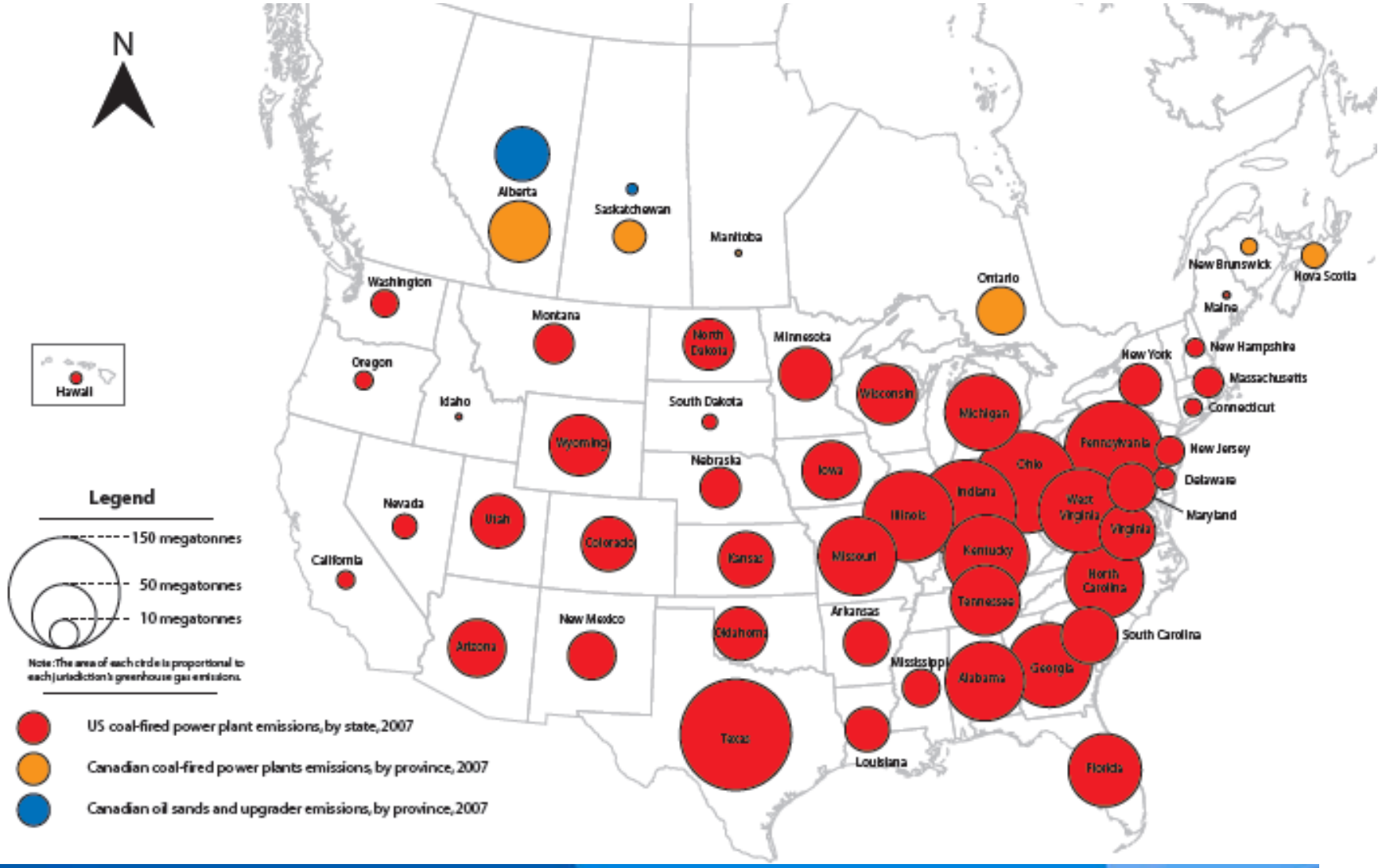
Overview

- Context
- Provincial Emissions Profile
- Alberta's Strategy & Approach
- Alberta's Regulatory System
- The Offset System
- Overview of the 2007 - 2009 compliance cycles

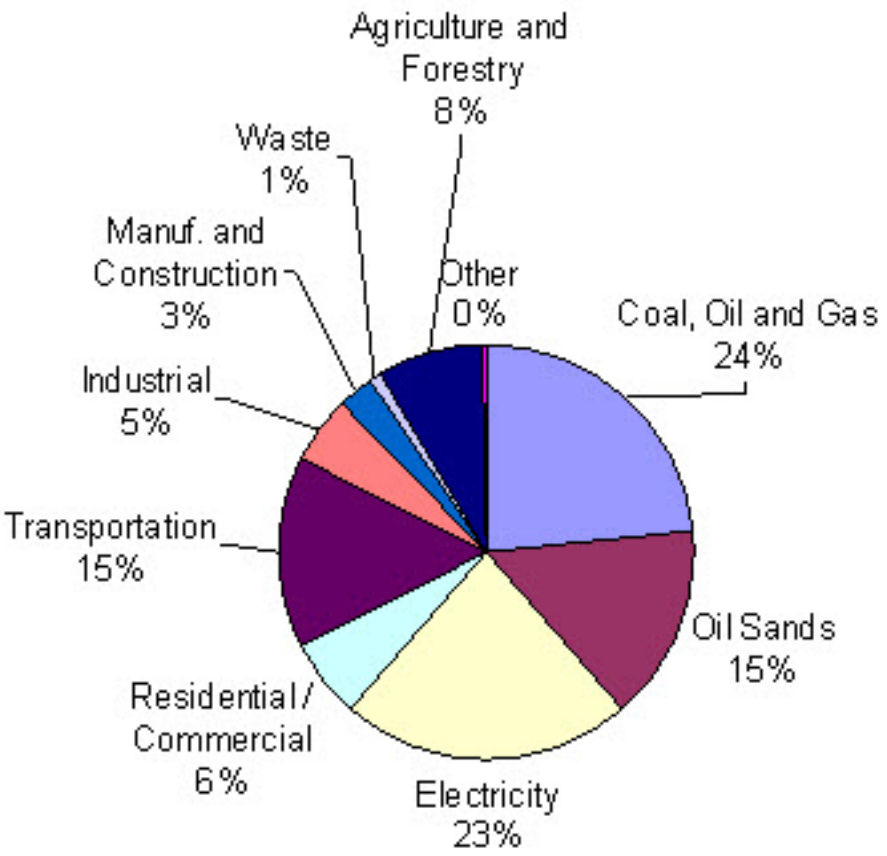
Alberta's GHG Emissions in the Canadian Context

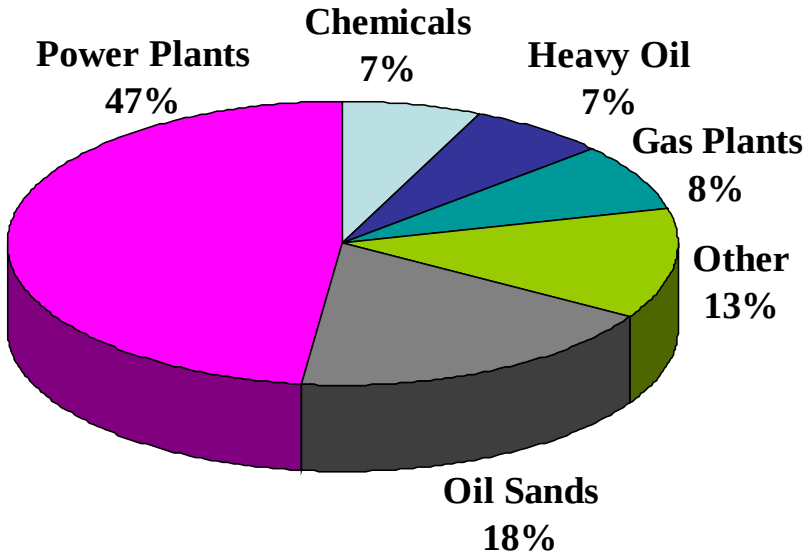


Common Challenges



Provincial Emissions Profile





Total Province – 2008

•Industry > 70%

Large Facilities – 2008

•Account for >50% of Provincial

Policy Context for Alberta

- Economic Context
  - Energy-export focused economy
    - Nearly half of Alberta's emissions tied to US energy demand
  - Relatively new manufacturing/industrial base – steep mitigation cost curve
  - Thermal-based electricity - about 90% of electricity from fossil fuels (coal and natural gas)

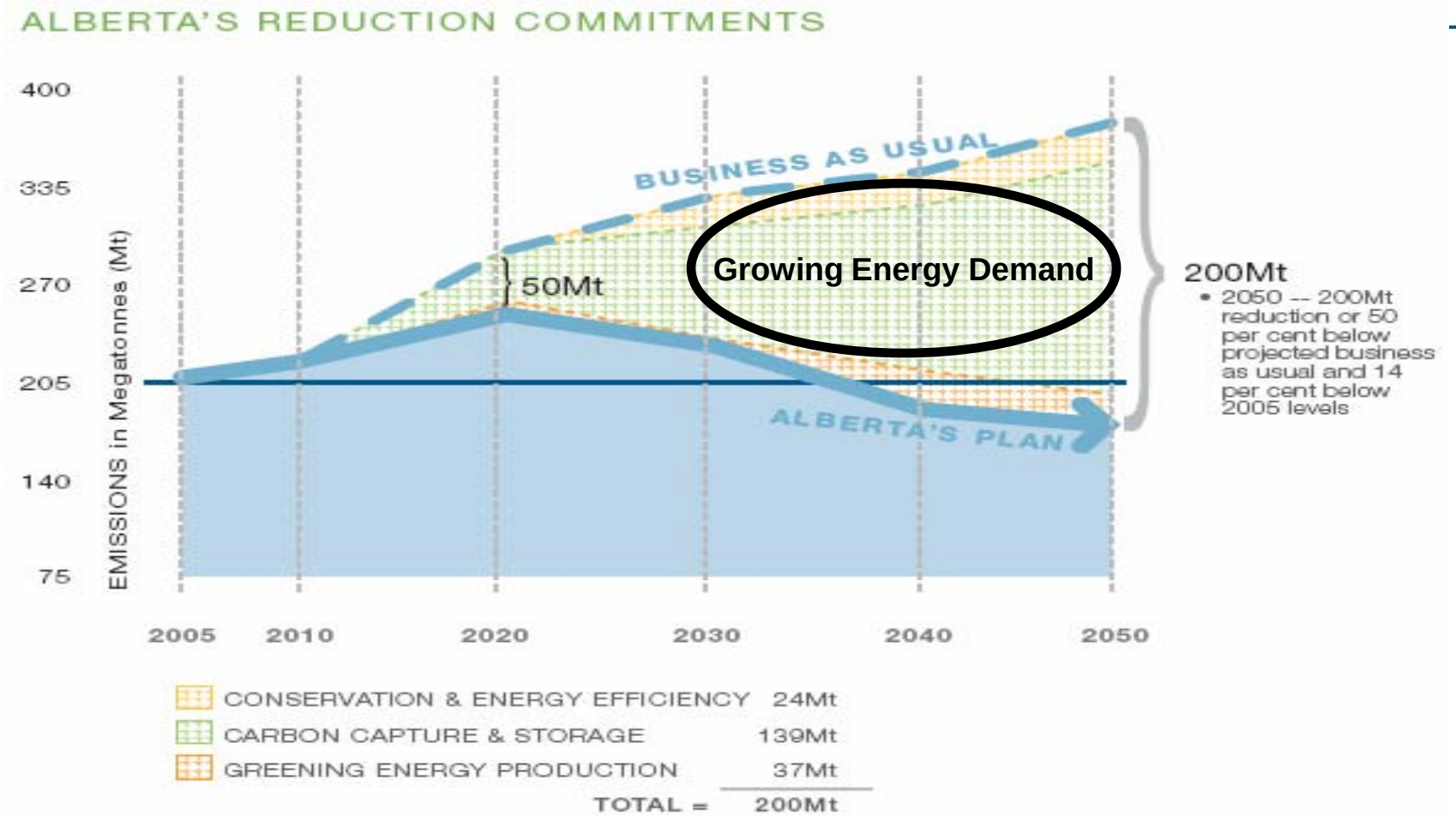
- Social Context
  - International recognition of the need for action on climate change
    - Wealth as a metric for ability to act
  - General agreement on the need for industry to act
    - Yet limited formal engagement of consumers to date

- Environmental Context
  - We're reducing the 'per unit' footprint, but increased energy demand is outpacing this improvement
  - Impacts of a changing climate are being felt today – we need to adapt
  - Alberta has ideal geology and potential technology conditions for large scale carbon sequestration

Alberta Policy Approach

- Alberta's energy sector is evolving to meet a global market that integrates energy security, environmental sustainability and economic growth.
  - We need to start with practical, stretch but achievable objectives
    - Alberta industry - improved efficiency approx 1% per year (2% Oil Sands)
  - Adjust policies as needed and as we further understand the reduction opportunities
- Policy certainty for industry
  - Large investments being made now – expensive to retrofit; investment is often for 40 years+
- Implementation of new technology will be a big part of the long-term solution.
- Market instruments (offsets and fund) are needed to bridge the gap between current emissions and long-term solutions.
- Consumers must be part of the solution
- This is about energy system shifts – will requires strategic and focused investment in transformational changes (technology, behavioral, etc.)
  - Alberta's system designed to maximize support of transformative technology vs. capital outflow

Alberta's 2008 Climate Change Strategy



Strategy - Complementary Measures

- Large emphasis on carbon capture and storage ($2 billion)
  - Based on our emissions profile and geological potential
  - But not the only focus area – Technology Fund will identify other opportunity areas
- Renewables
  - Renewable Fuel Standard
  - Bioenergy Strategy - $239 Million program (leverage $850 million in private funds)
  - $30 million committed to waste-to-energy projects
- Consumers
  - $2 billion GreenTrip – commitment to public transit projects
  - Incentives for energy efficiency
  - Building Codes
  - Energy Efficiency Act

Specified Gas Emitters Regulation

- Applies to all facilities in Alberta that produce over 100,000 tonnes of CO_2E
  - About 100 facilities that represent 50% of Alberta's overall emissions or 70% of industrial emissions
- Requires facilities to establish a baseline intensity
  - Based on average emissions intensity from 2003-2005 (emissions/production=baseline intensity)
- Intensity Limits applied – reductions relative to baseline intensity
  - Existing facilities - required to reduce their intensity by 12% from their baseline
  - New Facilities - phase-in of target for new facilities
- Essentially acts as an absolute limit/cap for facilities with stable or declining production

Options to Achieve Targets

- Internal Abatement
- Emission Performance Credits (EPCs)
  - These are credits created in the regulated system by facilities that achieve better than target performance
- Emission Offsets
  - Incents reductions outside of the regulated facilities, unleashing ingenuity of the broader market
  - Rewards reduction activity not otherwise required by law
  - Action must be taken in Alberta on or after January 1, 2002 and must be third party verified.
- Payment to the Climate Change and Emissions Management Fund
  - Compliance payment to the Climate Change and Emissions Management Fund at $15/tonne
  - Key mechanism to support transformative technologies and change
  - Safety valve - essentially caps industry's risk as we transition into a new regulatory and economic system
  - Fund is being managed by an arm's-length Board/Not-for-profit Corporation

Offset Credits

- Are a means of expanding the reach of the regulatory framework by incenting emissions reductions outside of the regulated facilities.
  - Offset Credits can not be generated at facilities subject to the *Specified Gas Emitters Regulation*
  - However, regulated facilities can still generate credit for reductions that go beyond their assigned target – these credits are called Emissions Performance Credits (EPCs).

- Offset credit is given to emissions reductions that are the result of a change in practice, technology or a reduction activity that is beyond business as usual and any regulatory requirements.
  - We cannot credit business as usual activities or standard business practices – if we do, we will not succeed in shifting off our growing emissions trajectory.

The Offset Market

- *Specified Gas Emitters Regulation* enables the system
  - Sets out the rules and the reduction obligations (Targets) for large emitting facilities.
  - Quantification protocols establish the eligible offset reduction opportunities
    - They speak to the baseline and project conditions, quantification methodologies, required evidence and documentation, and assurance procedures.
  - The end objective of our system is not an offset market, rather the market provides a flexible and alternate means for regulated parties to come into compliance with their targets.

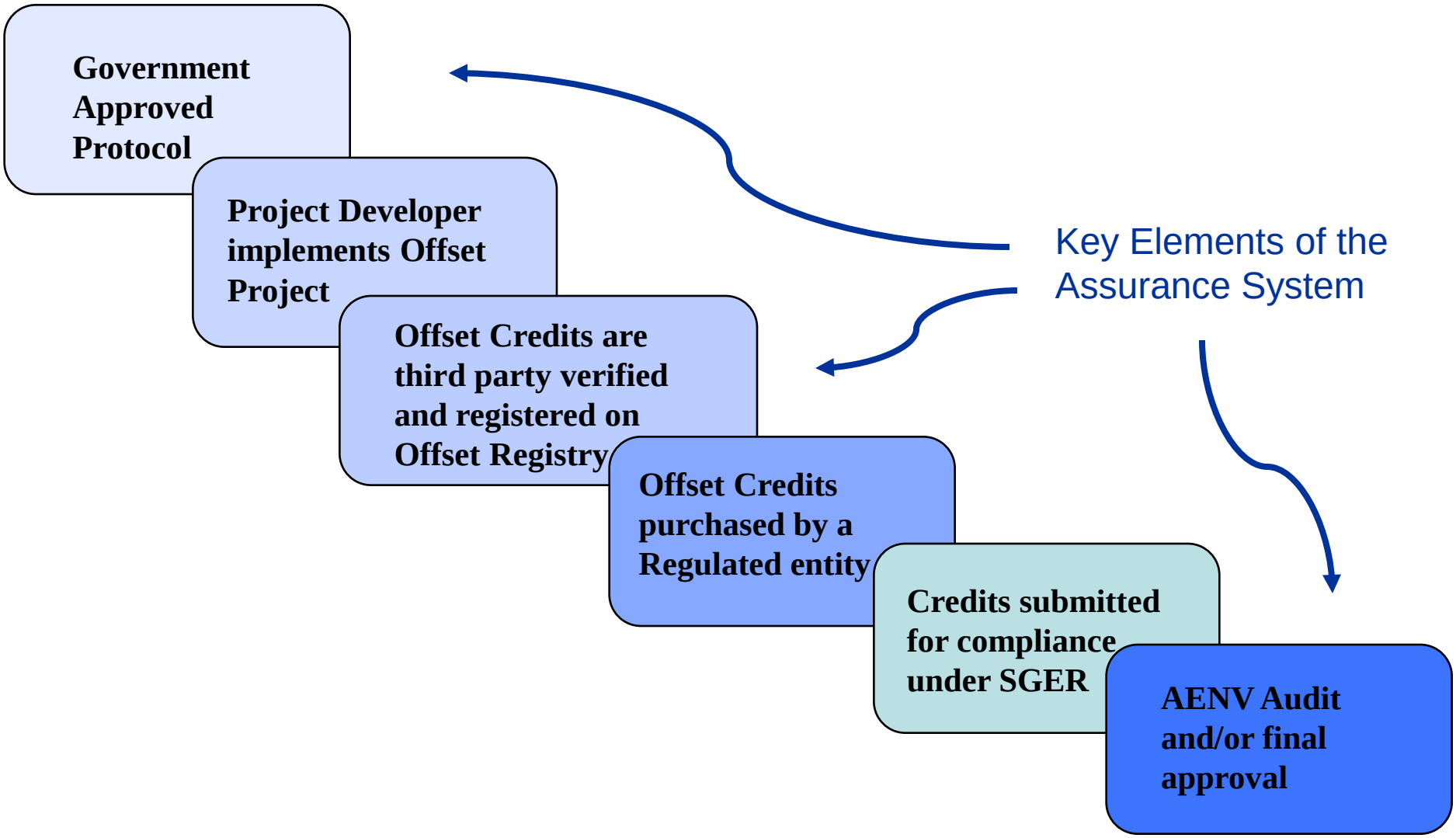
It is the regulation and reduction targets that drives the demand (and thus value) for offsets.

  - Annual reduction obligation of 10-12 million tonnes of GHGs under current targets

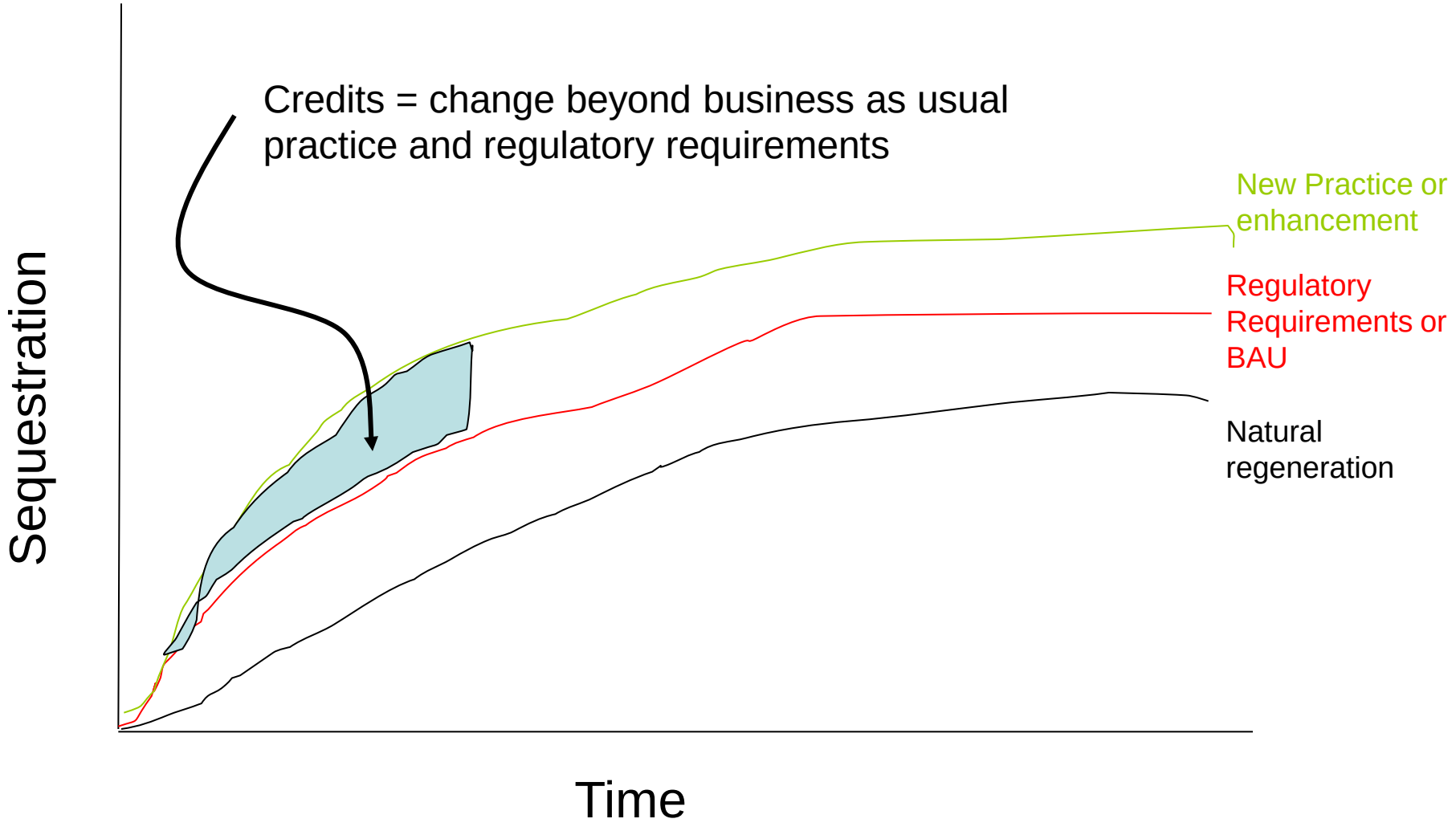
Offset Eligibility Criteria

- The *Regulation* has established the following eligibility criteria for Offset Credits in Alberta:
  - Result from actions taken on or after Jan 1, 2002;
  - Reduction must be real, quantifiable or measurable;
  - Cannot occur at a regulated facility and must be from actions not otherwise required by law – must be from activity that is beyond business as usual;
  - Have clearly established ownership;
  - Be counted once for compliance purposes;
  - Be verified by a qualified third party;
  - Occur in Alberta
  - Meet requirements stated in Ministerial guidelines (systems guidance and offset protocols)

Offset Credit Process



What qualifies for an Offset – Forest Example



Overview of the Regulatory Compliance Cycles

Compliance Cycle	Offset Credits	Fund Payment	EPC Credits
2007 (half year)	1 Mt	$43 Million	0.25 Mt
2008	2.7 Mt	$82 Million	0.57 Mt
2009	3.8 Mt	$63 Million	1.2 Mt

Growing Offsets Market

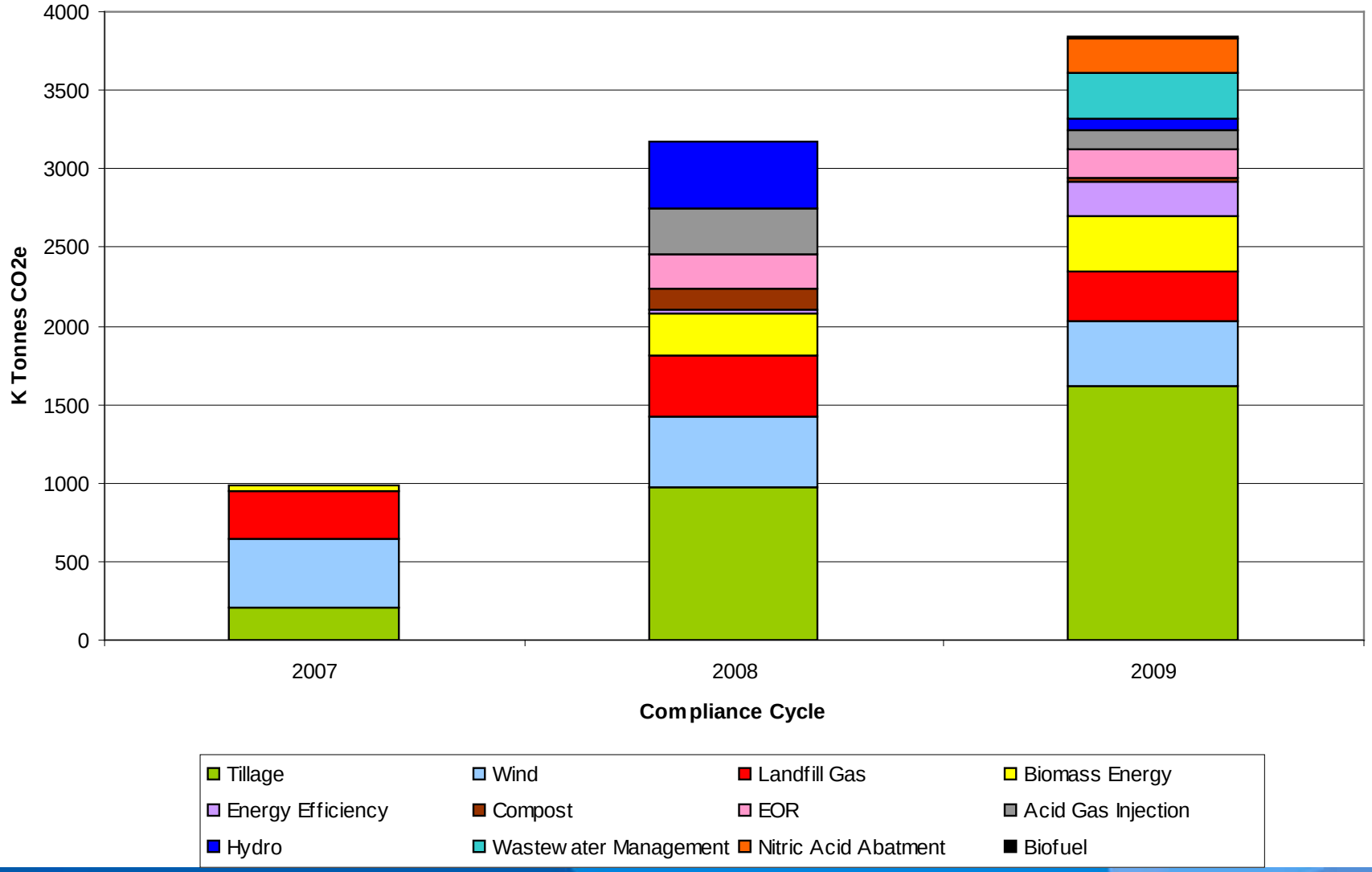
- The third cycle saw a substantial increase in both the number of facilities using offsets and in the type of Offset project being submitted.
  - 6 facilities used offsets in 2007
  - 25 facilities used offsets for compliance in 2008
  - 29 facilities used offsets for compliance in 2009

- Increase from 1 to 3.8 million credits
  - 7 projects using 3 protocol types (2007)
  - 28 projects covering 9 protocol types (2008)
  - 47 projects covering 12 protocol types (2009)

- 29 government approved protocols (project) types in Alberta's system to date.

The offset system is increasingly complex and requires broad expertise and skill sets to understand and manage

Offset Credits Submitted for Compliance



Offset System Experience

- Protocol, methodology and assurance issues remain key areas for ongoing work and improvement.

- Offset Protocols & Methodologies
  - Need for high quality, scientifically defensible protocols and methods
  - Protocols need to developed with assurance in mind – how do we know that emissions reductions have occurred?
  - The system needs to drive real reductions. Not about wealth transfer and subsidization.
  - The protocol development process needs to ensure a balanced perspective is represented at the table

- Verification and Auditing
  - Verification was significantly better in the 3rd compliance cycle, but audits are still finding “material” errors in offset projects.
  - In the future, Alberta will adopt a higher verification standard and will move towards accreditation of verifiers
  - Protocols will need to speak to evidence and documentation required to support the project’s emission reduction assertion.

Conclusions

- Carbon price signal in play and beginning to be factored into investment decisions.
  - Initial reliance on market instruments as a true-up option
  - But facilities are looking at opportunities to make investments/changes at source
- More participants in Alberta's carbon market
- Greater comfort with overall system and ability to work within the system
  - However, further work needed on quantification methodologies and assurance
  - System needs to hold up to scrutiny
- Learning by doing – Alberta is well positioned to adapt our regulatory system to fit within the North American policy context.

Thank you

Questions?

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