

# Implementation of forest carbon offset projects in Provincial forests

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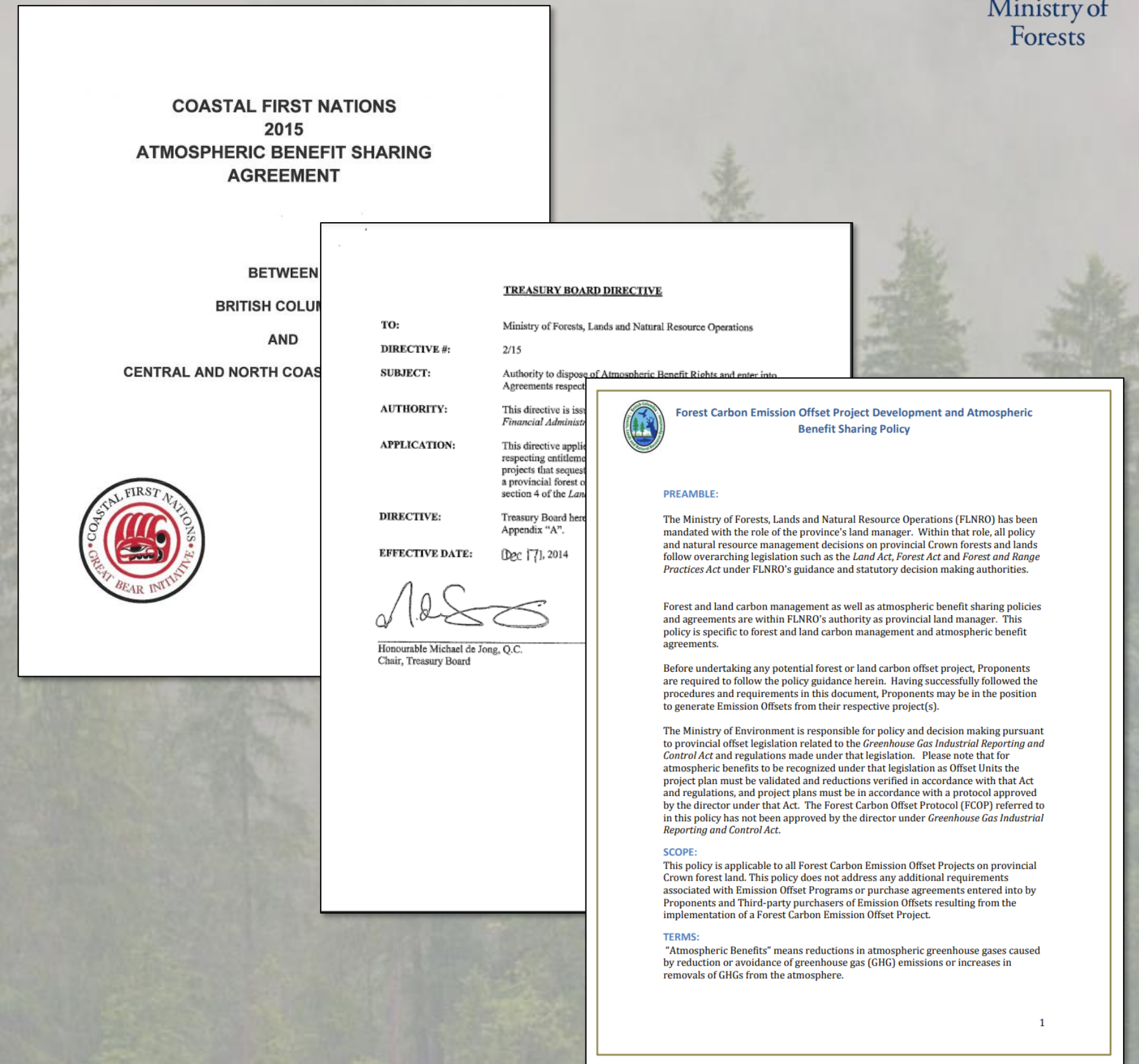
# Agenda



- Background: Carbon credits in B.C.
- Mitigation potential of B.C.'s forests
- B.C.'s Forest Carbon Offset Protocol (FCOP)
- Pathways to credit generation in B.C.'s Provincially administered public lands
- Next steps in policy development


# Background – carbon credits in B.C.

- ~2009 – 2010 Great Bear Rainforest projects (3)
- 2013 Cheakamus Community Forest project
- 2014 Treasury Board Directive 2/15
- ~2015 Forest Carbon Emission Offset Project Development and Atmospheric Benefit Sharing Policy (repealed)
- April 2024 FCOP released; multiple projects in progress




**COASTAL FIRST NATIONS  
2015  
ATMOSPHERIC BENEFIT SHARING  
AGREEMENT**

BETWEEN  
BRITISH COLUMBIA  
AND  
CENTRAL AND NORTH COASTAL FIRST NATIONS



**TREASURY BOARD DIRECTIVE**

TO: Ministry of Forests, Lands and Natural Resource Operations  
DIRECTIVE #: 2/15  
SUBJECT: Authority to dispose of Atmospheric Benefit Rights and enter into Agreements respecting  
AUTHORITY: This directive is issued by the Financial Administration Act  
APPLICATION: This directive applies to projects respecting entitlements to provincial forest lands under section 4 of the Land Act  
DIRECTIVE: Treasury Board hereinafter referred to as Appendix "A".  
EFFECTIVE DATE: Dec 17, 2014

  
Honourable Michael de Jong, Q.C.  
Chair, Treasury Board

**Forest Carbon Emission Offset Project Development and Atmospheric Benefit Sharing Policy**

**PREAMBLE:**

The Ministry of Forests, Lands and Natural Resource Operations (FLNRO) has been mandated with the role of the province's land manager. Within that role, all policy and natural resource management decisions on provincial Crown forests and lands follow overarching legislation such as the *Land Act*, *Forest Act* and *Forest and Range Practices Act* under FLNRO's guidance and statutory decision making authorities.

Forest and land carbon management as well as atmospheric benefit sharing policies and agreements are within FLNRO's authority as provincial land manager. This policy is specific to forest and land carbon management and atmospheric benefit agreements.

Before undertaking any potential forest or land carbon offset project, Proponents are required to follow the policy guidance herein. Having successfully followed the procedures and requirements in this document, Proponents may be in the position to generate Emission Offsets from their respective project(s).

The Ministry of Environment is responsible for policy and decision making pursuant to provincial offset legislation related to the *Greenhouse Gas Industrial Reporting and Control Act* and regulations made under that legislation. Please note that for atmospheric benefits to be recognized under that legislation as Offset Units the project plan must be validated and reductions verified in accordance with that Act and regulations, and project plans must be in accordance with a protocol approved by the director under that Act. The Forest Carbon Offset Protocol (FCOP) referred to in this policy has not been approved by the director under *Greenhouse Gas Industrial Reporting and Control Act*.

**SCOPE:**

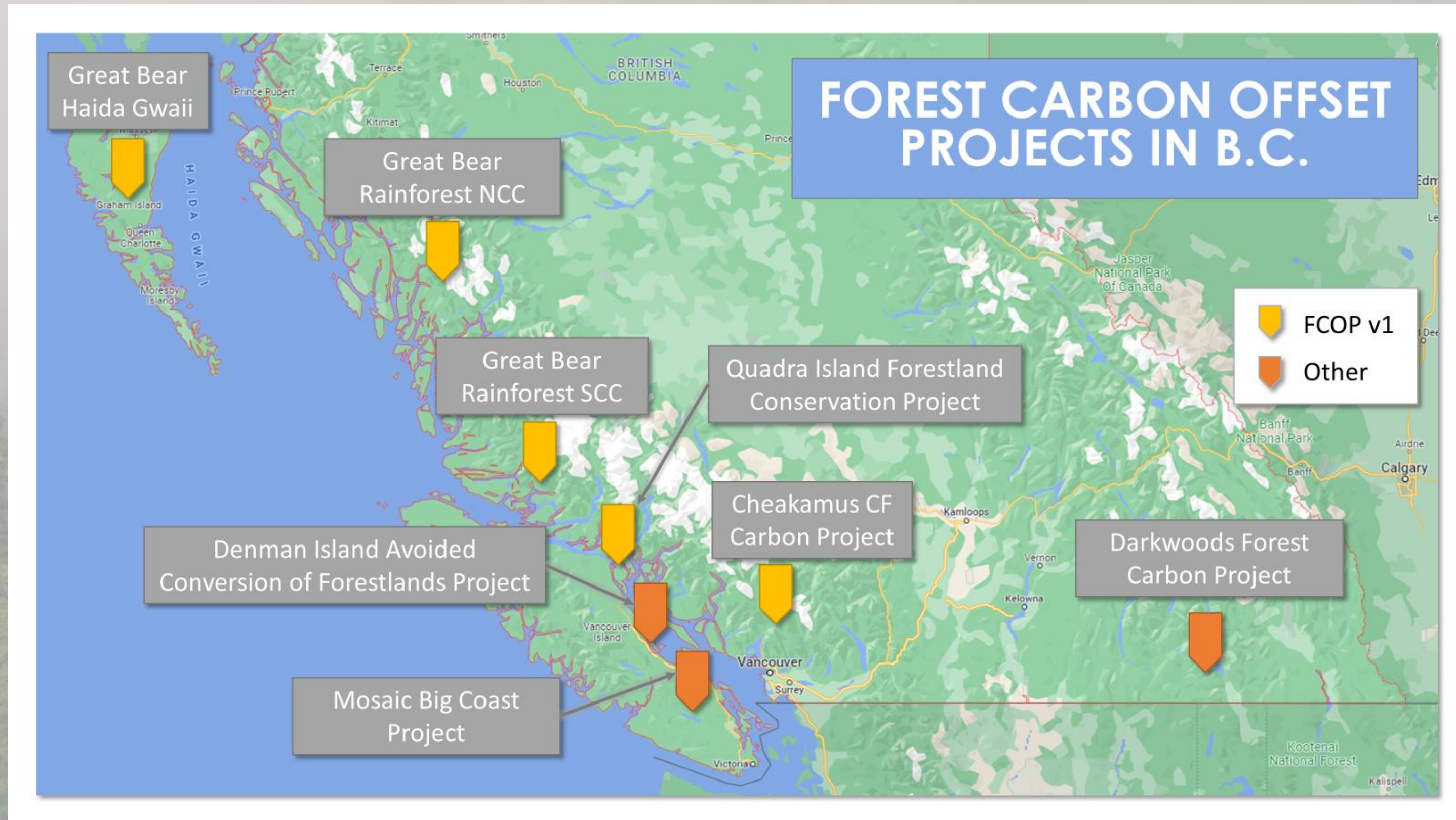
This policy is applicable to all Forest Carbon Emission Offset Projects on provincial Crown forest land. This policy does not address any additional requirements associated with Emission Offset Programs or purchase agreements entered into by Proponents and Third-party purchasers of Emission Offsets resulting from the implementation of a Forest Carbon Emission Offset Project.

**TERMS:**

"Atmospheric Benefits" means reductions in atmospheric greenhouse gases caused by reduction or avoidance of greenhouse gas (GHG) emissions or increases in removals of GHGs from the atmosphere.

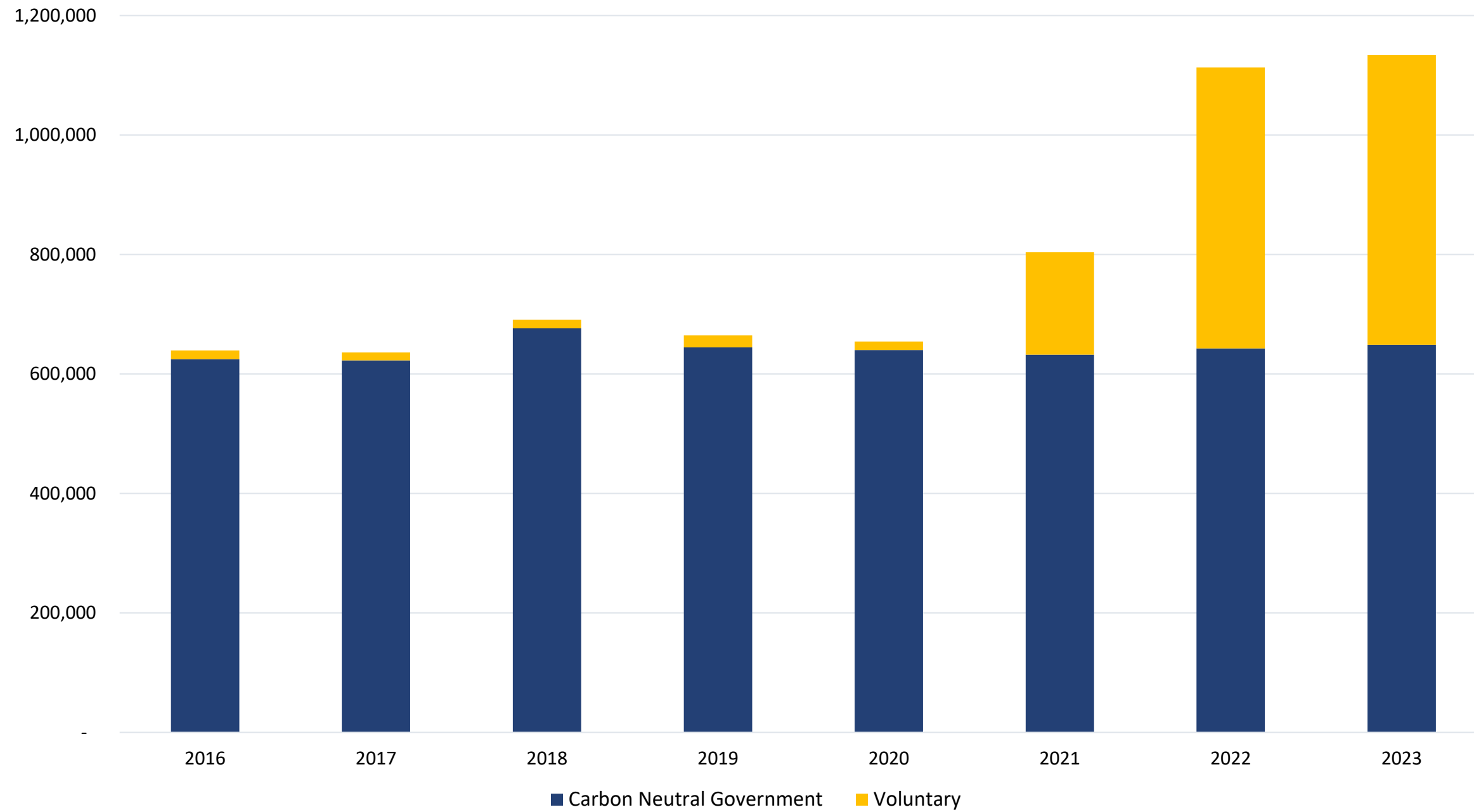
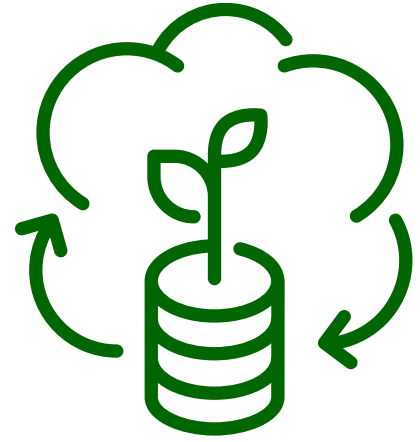
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# Background – carbon credits in B.C

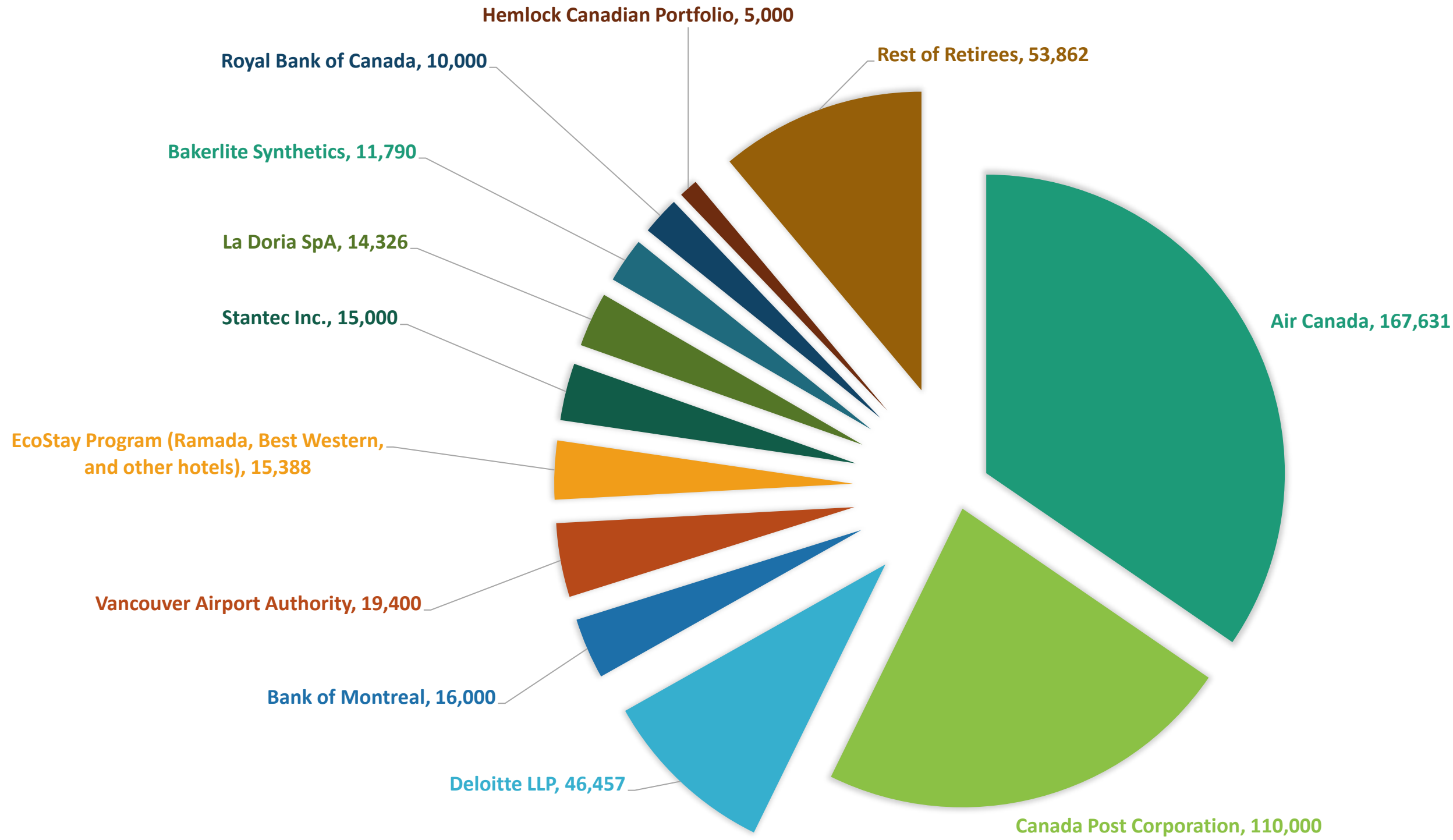


# Background - - carbon credits in B.C

## B.C. Carbon Offset Retirements (Purchases)



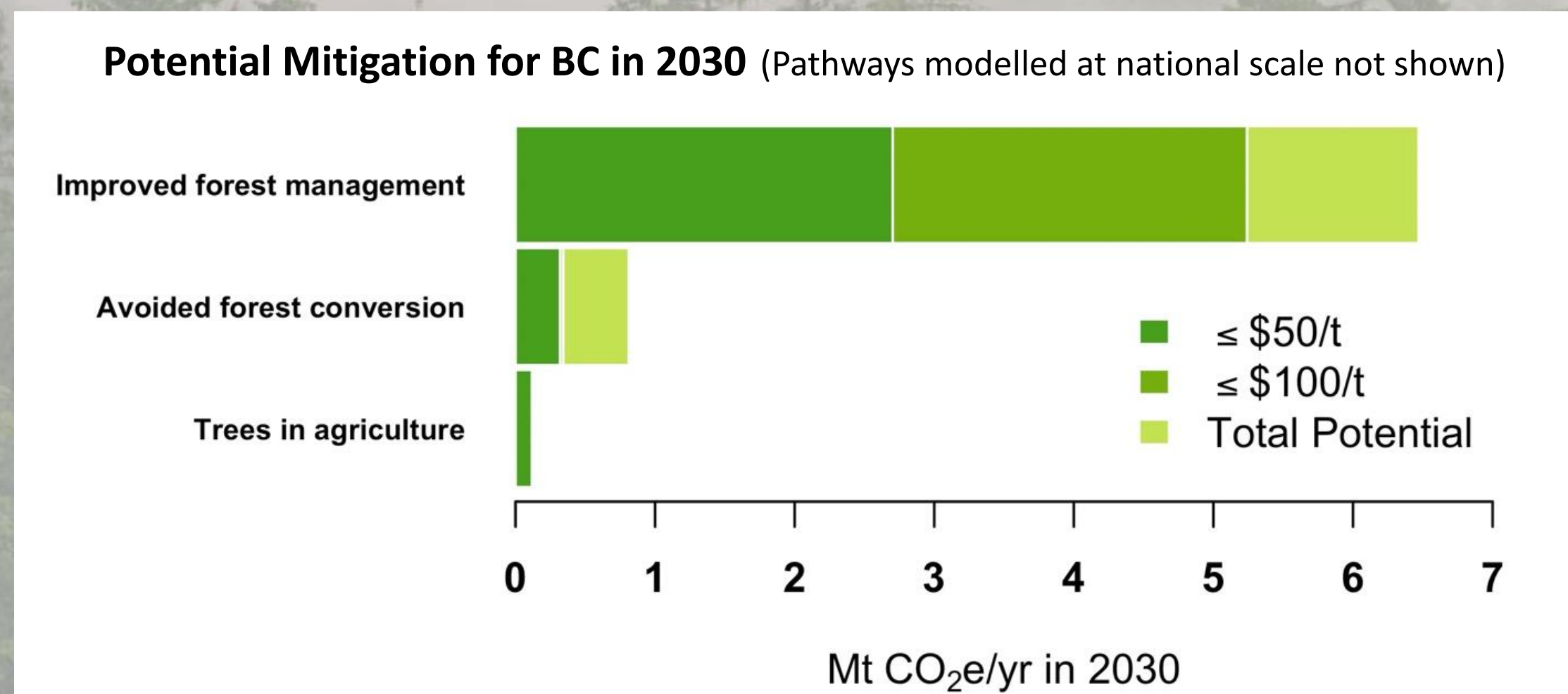
# Top 10 Retirees by quantity (tCO2e) in BC voluntary carbon market in 2023



TOTAL: 484,854 TCO2E

# Mitigation potential of NCS in B.C.

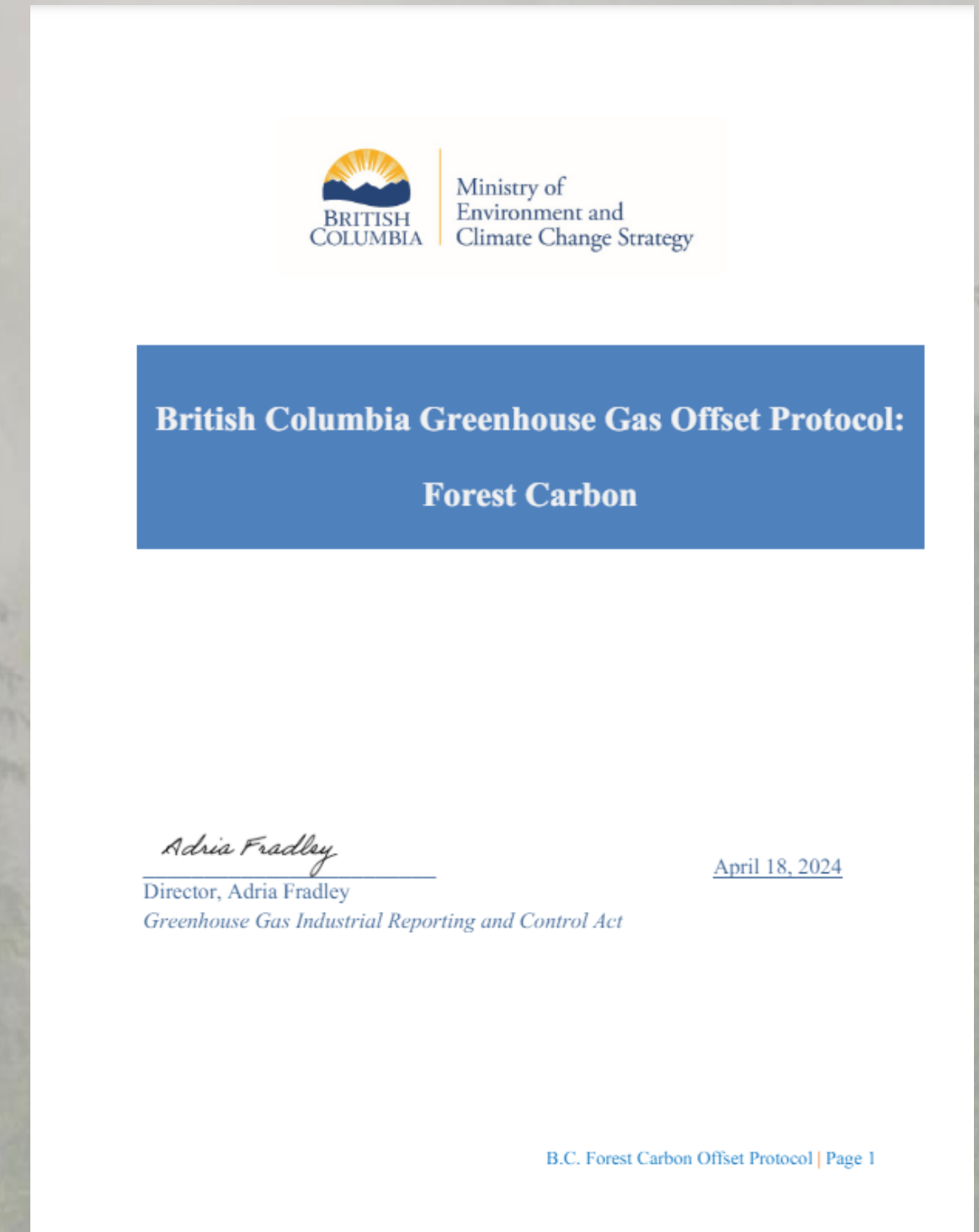
- Drevor et al. (2021) improved forest management removal/reductions:
  - 2.7 MtCO<sub>2</sub>e/year in 2030 with a \$50 carbon price
  - 5.2 MtCO<sub>2</sub>e/year in 2030 with a \$100 carbon price





# What is FCOP?

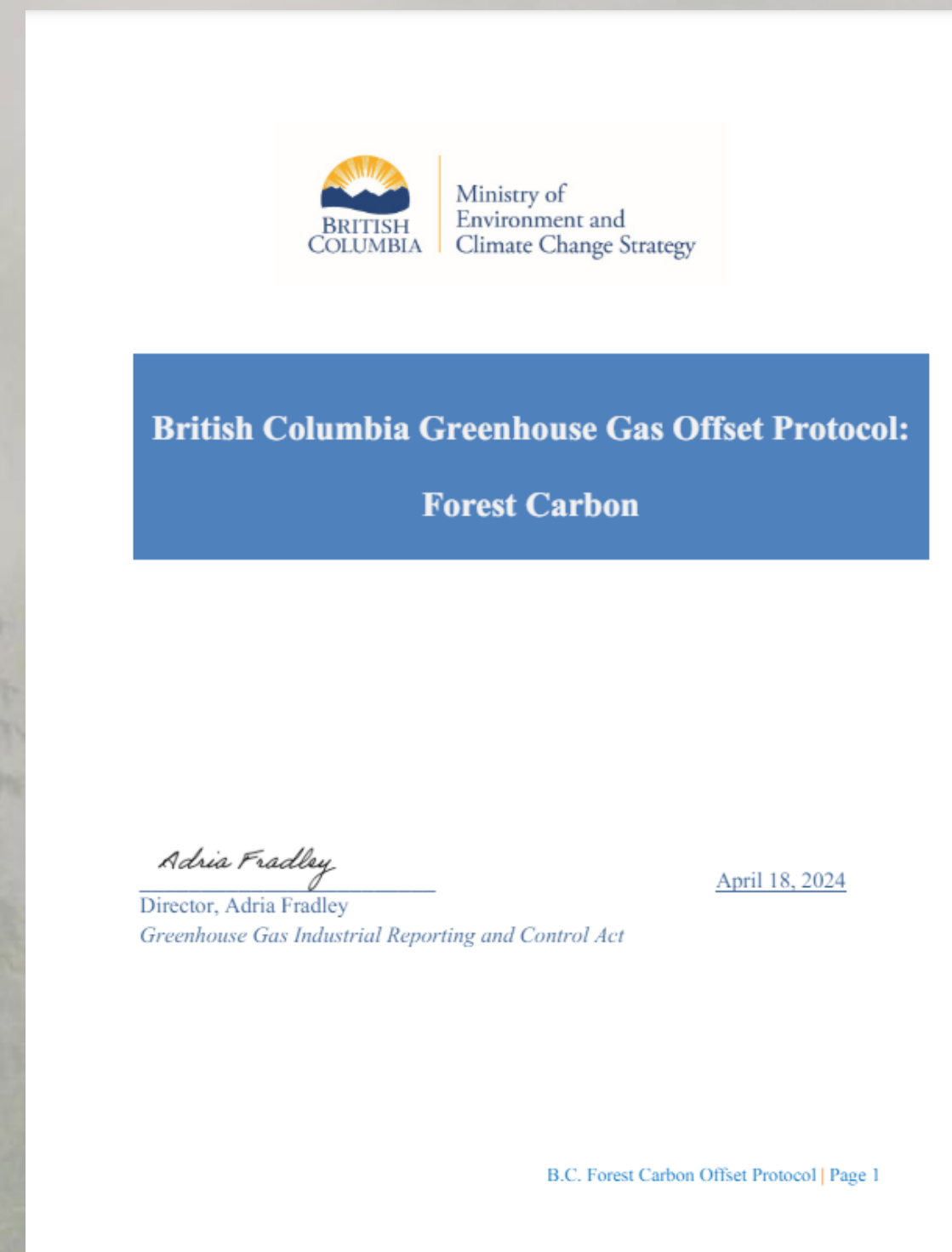
- Establishes:
  - Eligibility criteria (i.e., activities eligible to generate credits):
    - Tree planting
    - Enhanced silviculture
    - Harvest reduction
  - Baseline and project scenarios (basis for credits)
  - **Leakage** (through deductions)
  - **Permanence** (through deductions and a buffer pool (insurance credit account))
  - **Additionality** (regulatory and financial)
- Does **not** establish or contain guidance on land use designation, carbon rights, etc.



# Permanence of B.C. forest carbon offsets under FCOP

- Deductions of 6% - 37% to a government-managed Contingency Account, assuming 2X increases in natural disturbance due to climate change.
- Permanence period of 100 years following the 25 year crediting period.

“Default natural disturbance risk factors are intended to represent the risk of mortality of generic stands over the timespan of 100 years. Default natural disturbance risk factors were developed by assessing annual area burned time series data from 1950 to 2018. Annual area burned was modelled using ageindependent random draws from a log-normal distribution, with parameters estimated from an observed time series of annually burned areas, and then applied in a Monte Carlo simulation framework used to assess the probability of survival for 100 years into the future. As a proxy for future climate change impacts, the mean of the log-normal distribution is doubled over the time period examined.”



# Permanence of B.C. forest carbon offsets under FCOP



- All projects must contribute a proportion of offsets to a “contingency account” (i.e. insurance pool).
- The percentage of units contributed to a contingency account for an Interior BC project would be in the 6% - 37% range depending on the project specific risk mitigation measures.

**Table 23: Default natural disturbance risk**

Region	PND (%)
Coast	18
S. Interior	37
N. Interior	27

**Table 24: Risk mitigation measures**

Mitigation Measure	Coast	S. Interior	N. Interior
Project takes place within a <u>FireSmart</u> area	5	10	10
Project takes place under Indigenous stewardship, or has an Indigenous Guardianship program in place	20	20	20
Annual fire plan in place	3	6	6
Fire line construction protecting >5% of Project Site	2	3	3
Initial fire suppression equipment on or adjacent to project site protecting >5% of Project Site	1	3	3
Regular low-intensity burning used to control fuel loads, protecting >5% of Project Site	0	1	1
Diversity of tree species in project	10	10	10
Relevant improved tree genotypes used (e.g., drought resistant)	10	10	15
Road accessibility	10	8	8
Adequate moisture regime	0	2	2
Area-weighted average slope is less than 10%	5	2	2
Entirety of project site is more than 5 km from railroad	0	2	2

# FCOP Leakage

Table 8: Provincial default external Market Leakage estimates ( $\%Leakage_{External\ Market}$ )

Geographic Area	Estimated Leakage
Northern Interior	71.89%
Southern Interior	69.18%
Coast	47.37%

- Default values for market leakage were developed in 2019 by the Office of the Chief Forester and Timber, Range and Economics Divisions.
- These are among the highest market leakage values (deductions) of any forest carbon methodology.

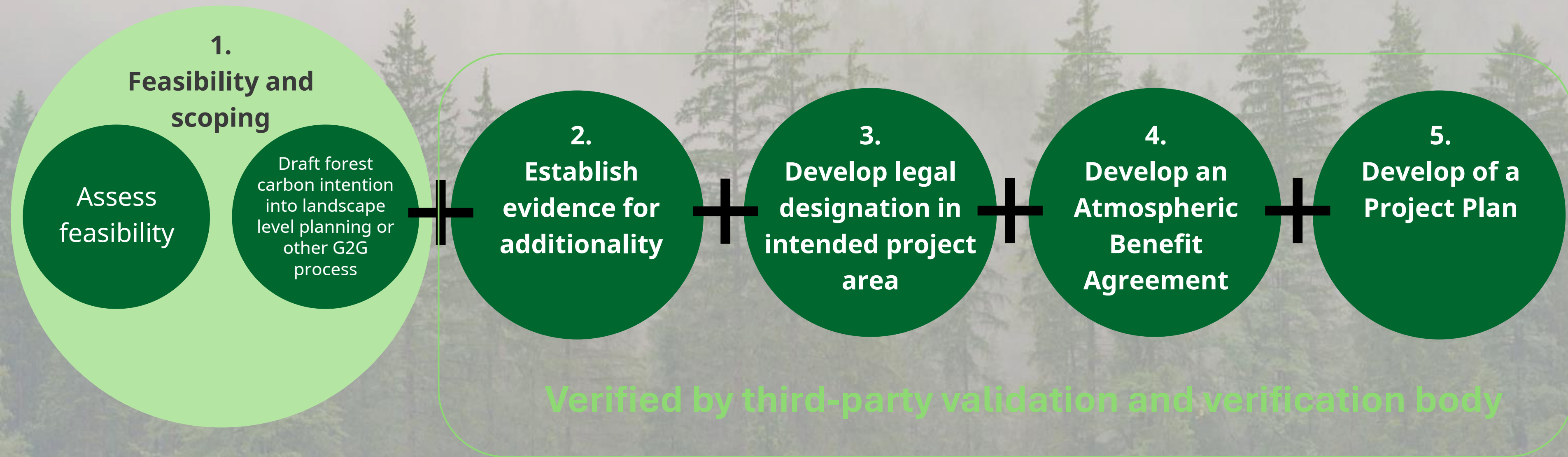
# FCOP Leakage

$$\%Leakage_{External\ Harvest\ Shifting} = \frac{(100 * e * \gamma * C_N)}{([e - E * (1 + \gamma * \Phi)] * C_R)}$$

Where,

Parameter	Description	Default Value
$\%Leakage_{ExternalMarket}$ <i>(shortened as %Leakage in Appendix B)</i>	Total increase in Project Emissions due to External Market Leakage during each Project Report Period, expressed as a percentage of the net Removals that is expected to shift to lands outside the ownership or control of the Project Proponent over the Project Report Period.	
$e$	Supply price elasticity.	See Below
$E$	Demand price elasticity.	
$C_N$	Carbon sequestration reversal per unit of harvest from the non-reserved forest.	
$C_R$	Carbon sequestration per unit of (forgone) harvest gained by preserving the reserved forest.	
$\Phi$	The “preservation” parameter. This is the ratio of timber supply being set aside for the Project (quantity $Q_R$ ) to the timber supply outside the offset area (quantity $Q_N$ ). The ratio can be represented as and can be thought of as the market share of the timber in the Project.	
$\gamma$	The “substitution” parameter. A parameter introduced into the referenced Leakage equation to take into account specialty woods (i.e., the degree to which a particular HWP can be substituted for another).	

# Key considerations for forest carbon offset project development



# Ongoing, future, and possible work for the Ministry of Forests in forest sector decarbonization

- Guidance, guidance, guidance.
- Development of provincial carbon modelling methodology and refinement of forest sector emissions reporting by the Ministry of Environment and Climate Change Strategy.
- Economic assessment of cost-effective mitigation strategies, and development of a socio-economic assessment framework for assessing forest management and land use change.
- Revision of leakage values in FCOP.
- Exploring market solutions for:
  - Avoided slash burning and enhanced utilization of harvest residuals,
  - Biochar, and
  - Avoided wildfire.