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# New Economic Opportunities for the eSFL Pilot Project of the Northeast Superior Regional Chiefs' Forum

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## Background

The Northeast Superior Regional Chiefs' Forum (NSRCF) came together eight years ago to offer a coordinated approach to more integrated community and economic development across the Northeast Superior territory. Since that time, the NSRCF has been an active participant, and in many cases the driver of, forest tenure reform and alternative economic development planning. The NSRCF is using a six capitals development framework - focusing their efforts on issues of:

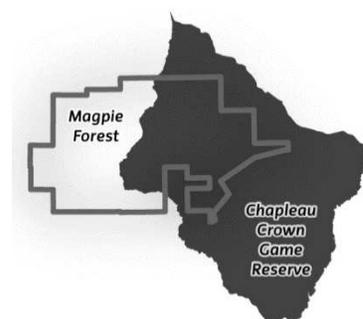
1. Cultural revival - Reconciliation
2. Reconciliation/revenue sharing
3. Economic development
4. Environmental stewardship
5. Social development
6. Coordinated regional planning.

The NSRCF is part of the formation of a regional table to manage the affairs of the new Enhanced Sustainable Forest Licence (eSFL) Pilot Project in Ontario. This will likely include most, if not all of the 7000 square kilometer Chapleau Crown Game Preserve. The Magpie and/or Martel Sustainable Forest License areas are the largest current tenures to be part the new eSFL. The eSFL was introduced to support the follow objectives:

- Support growth, security and economic efficiency for the forest sector in Ontario;
- Provide a more sustainable model that can withstand the fluctuations in the economy;
- Provide local First Nations and communities a greater say in the management of local forests;
- Engage government, and communities, First Nations and industry in meaningful dialogue to foster partnerships and agreements; and
- Protect and create jobs by maximizing the use of available Crown fibre.

There are 6 key eSFL characteristics for the new proposed management areas by the Ministry of Natural Resources and Forestry (MNR):

- Governance
- Local Aboriginal involvement and local community involvement
- Wood use
- New entrants
- Sustainable Forest Management delivery
- Economic viability and competitive wood costs<sup>1</sup>



<sup>1</sup> Ontario Provincial Government website: <https://www.ontario.ca/page/forest-tenure-modernization>



## New Economic Opportunities

More and more communities are considering alternative ways to manage their adjacent forest resources - in order to maximize economic, social/cultural and environmental benefits to their region. This is a national, and in fact, international driver - and governments are beginning to look for alternative management models, particularly in the zones of high forest/community interface. In addition, there is much wealth generated by natural ecosystems, which can be recognized for the services they provide and not solely for the harvestable resources they produce. According to Ecosystem Marketplace reports, between \$16.7 billion and \$18 billion of global transactions take place each year in the carbon, watershed services, and biodiversity markets.<sup>2</sup> Payment for ecosystem services and other market-based instruments like taxes and subsidies, and sometimes certification, place monetary value on ecosystem services to create incentives for landowners to protect and restore ecosystems.<sup>3</sup> The most common ecosystem services from our forest, outside of timber, in the world are:

- Water,
- Biodiversity,
- Soil,
- Recreational Services,
- Cultural Services, and
- Carbon.

Carbon is by far is the most advanced markets of the ecosystem services and has delivered significant economic benefits to projects around the world.

## Ontario's price on carbon unlocks new opportunities for forest management

Ontario released its cap-and-trade legislation earlier this year, which places a price, and limit on greenhouse gas emissions. Carbon offset legislation is due later this year, and will create the mechanism and framework for creating offsets through eligible emissions reductions activities in Ontario. California's Climate Action Reserve has won the contract for building the offset protocols, including forestry and urban forestry, which should be available next year.

With a demand for emissions reductions created by the cap and trade system, and an offset mechanism through which to supply that demand in development, an opportunity is opening

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<sup>2</sup> Ecosystem Marketplace (2014) Ecosystem services market study for the Forest Stewardship Council. Unpublished. Ecosystem Marketplace, Washington, DC.

<sup>3</sup> FSC Ecosystem Services Strategy Draft (2015) see: <https://ic.fsc.org/en/news/id/1147>



for tenure holders like the Northeastern Superior Chiefs' eSFL to finance improved forest management through generating and selling carbon offsets.

Ontario's carbon price creates a second potential pathway to accessing capital for improved forest management in the eSFL landscape. The Ontario government will auction "carbon allowances" - the 1-tonne compliance units of a cap and trade system. This will raise an estimated \$1.9 billion per year, which has been earmarked by government for investing in further emissions reductions. Though the Ontario climate plan has indicated a number of sectors such as transit, electric vehicles and building efficiency as recipients of this money, there may be an opening for innovative projects/forest managers to make a compelling pitch for funding emissions-reductions activities.

## Forest Carbon Offset Opportunities

Currently, a SFL holders has rights to timber and road access only. To be able to develop and sell a carbon offsets, a tenure holder will need to acquire an "Atmospheric Benefit Right"<sup>4</sup> by the province or ask for changes to the Ontario *Crown Forest Sustainability Act* that gives the eSFL/First Nations held forest tenure these rights. Also, it should require the consent of all First Nations who's territory the licence is located. The Cheakamus Community Forest in British Columbia, a partnership between the Resort Municipality of Whistler, Squamish Nation and Lil'wat Nation (very similar to eSFL concept) was the first crown forest tenure in Canada to sign an Atmospheric Benefit Sharing Agreement in 2015 with the BC Government that allowed them to sell any forest carbon offsets developed from their area based tenure with a percent going to the government.

## Forest Carbon Standard Protocols

All major carbon standards around the world include tools for creating forest carbon offsets. Most forest carbon offset protocols outline four eligible project types. Each has a different implications in terms of the baseline estimate (what is business as usual) methodology, as well as the verification and validation of the project and how risk is managed.

The four types are:

**Afforestation** projects involve planting, seed-inducing, or encouraging natural seed production in an area that has not been forested for at least 20 years. (Very little opportunity, except for roads/landing that you want to deactivate permanently).

**Reforestation** involves replanting, seeding, or encouraging of natural seed sources in areas that were forest land within the past 20 years but have been subject to natural or other disturbance. For these projects to be eligible, reforestation must not be required by law. (Very little opportunity)

**Improved forest management (IFM)** includes increased sequestration, reduced emissions, or increased long-term storage through changes in practices like fertilization, conservation, extended rotation ages, fire proofing stands, increased utilization i.e. waste piles/slash burning, or increased storage in harvested wood products. (Largest opportunity for eSFL)

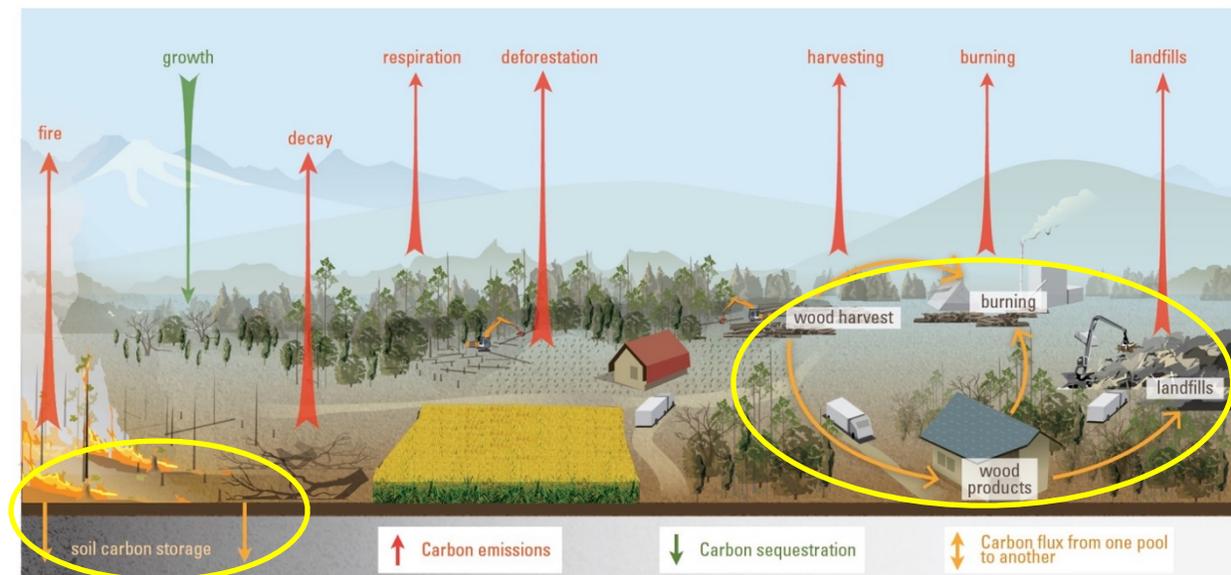
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<sup>4</sup> British Columbia uses an Atmospheric Benefit Sharing Agreement (ABSA) for tenure holders or First Nations to be able to sell carbon offsets/credits from crown land to the market.



**Conservation/avoided deforestation** entails preventing the conversion of forested land to non-forest land use. (Some opportunities for to increase or preserve habitat in eSFL)

Figure 2 demonstrates that Carbon is stored in forest and forest sector pools, and emitted from and added to each pool over time. Forest growth sequesters carbon from the atmosphere (resulting in a sink), while harvesting, decomposition, respiration, deforestation, and fire emit greenhouse gases to the atmosphere. Burning of residues and wood products as well as emissions from landfills are indirect carbon emissions, while wood products store carbon for specific periods of time. By increasing the carbon stored on the eSFL landscape, there may be a way to generate carbon offset units and sell those to pay for the carbon enhancement and other priorities of stakeholders.



\*the arrows in figure 2 are not to scale, and the magnitude varies considerably across space and over time  
**Figure 2 Forest and Forest Sector Carbon Cycles<sup>5</sup>**

## Improved Forest Management Carbon Offset Process

The typical process that is taken to develop an Improved Forest Carbon project and sell it is:

- Describe the Baseline (Business as Usual Management)
  - Determining the business as usual scenario (how is the forest currently managed) and carbon analysis.
  - **Carbon pools (land base):** determine the carbon stored in the forest in both baseline and project scenario (Trees, shrubs, dead wood, litter).
  - **Carbon pools outside forest (harvested wood products):** Determine the carbon stored in wood products in both baseline and project scenario (more

<sup>5</sup> From the Workshop on forest carbon mitigation in BC Pacific Institute of Climate Solutions (PICS) Engagement Process on Forest Carbon Mitigation February 10, 2016 Presentation



harvested volume in the baseline will result in a higher carbon pool in products than project scenario) how long they can they store carbon, for example, pulp and paper products have very short term carbon storage, while forest that are converted to plywood products increase carbon storage significantly. In addition, the distance these products go to be processed and the energy it takes.

- Project scenario (Climate Change Mitigation Change)
  - Involves describing the additional activities in order to reduce the GHG emissions and/or increase sequestration by Improved Forest Management (ie. Increase Conservation, Increase Utilization or Harvested Wood Products, Silviculture Growth, etc).
  - **Permanence** - relates to the period of time that carbon is to remain stored - usually 100 years for conservation needed. A lack of permanence can create uncertainty and considered high risk for investors so this is where the eSFL and MNR need to develop a strategy that shows buyers that long-term strategies cannot be reversed.
  - **Additionality** - need to show that additional funds are truly required to make this change - the economic business case.
- Leakage
  - Because market pressures lead to harvest elsewhere (internally and externally) - the projected emissions reductions must be netted down to compensate.
- Non permanence Buffer
  - Deduction for risk of fire, wind, disease or other unintended reversals
- What safe guards are developed to mitigate risk of a carbon reversals?
- Project Design Document (detailing all of the above in a report)
- Validation of Project Design Document
  - Independent third party validation of project to the appropriate protocol (in this case, Ontario's) - auditing the documents you used to compile science and design of the project.
- Verification of Project
  - Independent third party verification of your congruence to the Validated Project Design Document the actual emissions reductions achieved by the project.
  - This verifies the additional carbon storage from the start of the project back and how much carbon you have actually retained in a given period - can be up to 5 year periods.
  - Ongoing monitoring and data collection
- Registering Carbon Offset



- Sale of Carbon Offset

## Market Opportunities

As jurisdictions like Ontario, Quebec and California link their cap-and-trade compliance programs (projected for 2018), this will also allow offset projects developed in Ontario to be sold in these other jurisdictions. Many of the industries that will have their emissions capped in these cap-and-trade compliance systems will be able to buy offsets to meet their targets. Forest carbon projects have been a cost effective route to offsets in established markets like in British Columbia (BC Emissions Offset Regulations) and California (cap-and-trade compliance systems) - both strong systems and early adopters in North America.

A good example of an improved forest management project is the Cheakamus Community Forest in British Columbia on 33,000 hectares of land in the coastal range forest. That project verified GHG emissions reductions by approximately 12,000 tonnes CO<sub>2</sub>e/year through avoided and modified forestry practices (improved forest management activities) laid out under their forest management planning (Ecosystem Based Management). These actions went beyond regulatory requirements and adjacent land management practices, and could not be sustained without the additional carbon credit revenue. This carbon tool also supported their other objectives to manage their forest different for recreational, old growth, cultural areas, and riparian values in a significant different way than other users in the same region. In a similar fashion, carbon revenue may help the eSFL Pilot Project to finance broader activities on the landscape.

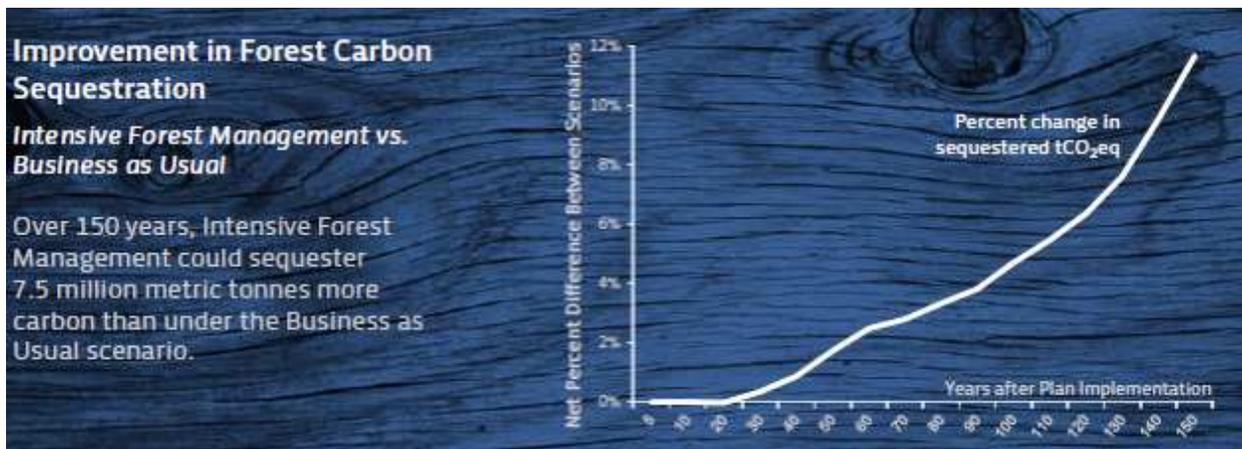
## Forest Carbon Mitigation Investment Strategies

Were innovative actors in Ontario's forest industry successful in accessing a portion of the \$1.9 billion in auction allowance revenues, this could drive investment to support forest landscape improvements. The new eSFL pilot project implements a variety of green climate change mitigation strategies. If these activities were shown to have significant carbon sequestration or reduce carbon emissions to help our national/provincial forest strategies, it would be good place to run modeling exercises. Though Canada does not currently include net emissions/sequestration from forests on its carbon inventory, it may do so in the future. This would strongly incentivize governments to increase sequestration and limit emissions from the landscape. This could also support forest licenses, industry partners, local communities and First Nations to transition to a low carbon economy. Piloting a pathway to improved forest management and keeping more carbon on the landscape or reducing emissions with the eSFL can help develop the understandings and state of play.

For example, the 2014 *Redesigning Forest Economy in Ontario's Northeast Superior Region Report* compared a 'business as usual' scenario with an 'Intensive Forest Management' scenario on the 1.1 million gross hectares of the Martel Forest (see Figure 3 below). The Intensive Forest Management scenario increased silviculture investments by an average of \$1 million per year in the first 40 years, then by an average of \$350,000 per year for the remainder of the 150 years. This was a \$78.5 million extra investment over the 150 years. The comparison showed that this silviculture investment increased the carbon by 7.5 million tonnes over the 150 years by increasing forest carbon density (also tree volume) - the amount of carbon stored per hectare of forest. However, the first carbon increase from the additional work didn't show up until after year 20, which would make it essentially impossible for a



developer or business to invest in and wait for returns if this was a carbon offset. The model showed that the provincial investment would increase silviculture employment; increase summer moose habitat; not reduce winter habitat below a 70% threshold; and would only cost less than \$10.50 per tonne increase carbon sequestration on that landscape over the 150 years. To put this in perspective, new carbon capture technology in Squamish British Columbia has cost of around \$2500 per tonne to reduce emissions (if it ran maintenance free for a decade), so the intensive forest management investment seems like a very cheap strategy at this point.



**Figure 3 Redesigning Forest Economy in Ontario's Northeast Superior Region Report compared a 'business as usual' scenario with an 'Intensive Forest Management' for Carbon**

### Forest Management Carbon Emissions in Canada

Climate change has also had large impact on areas burned by wildfire and areas killed by insects in Canada over time (see figures 5 and 6) and finding strategies to reduce either of these to make forest more resilient can be a worthwhile investment by federal or provincial governments.

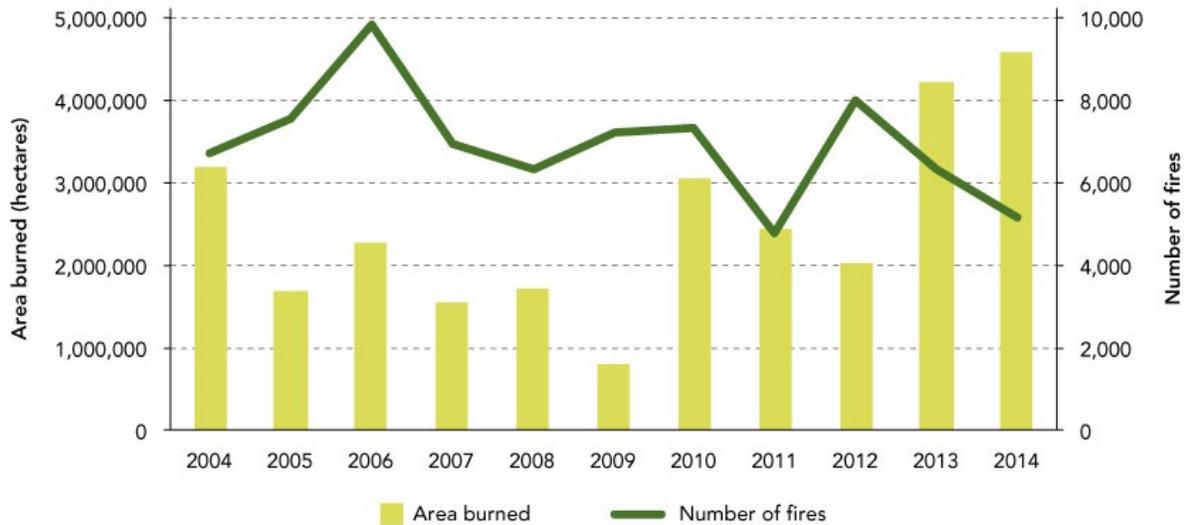


Figure 4 Forest area burned and number of forest fires in Canada, 2004-2014<sup>6</sup>

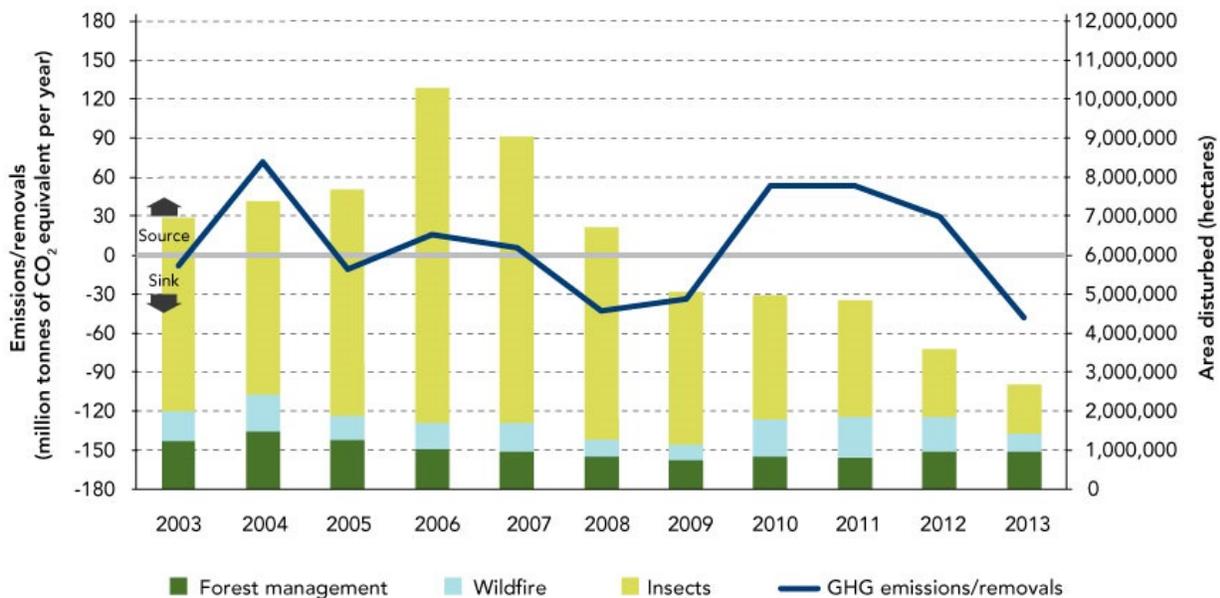


Figure 5 Carbon emissions and removals in Canada's managed forests, 2003-2013<sup>7</sup>

<sup>6</sup> Canadian Interagency Forest Fire Centre. 2014. Canada report 2014 National Forestry Database. Forest fires - National tables, Table 3.1, Forest fire statistics by province/territory/agency, 1970-2013

<sup>7</sup>Environment Canada. 2015. National inventory report 1990-2013: Greenhouse gas sources and sinks in Canada. (Based on data provided by Natural Resources Canada.)



## eSFL and Carbon Management

To summarize a few examples:

- forest management strategies can be structured and regionally customized to maximize the forestry sector’s “carbon sink” and climate change adaptation potential.
  - Maintain or increase forest areas (hard to do for eSFL, except roads)
  - Maintain or increase forest carbon density (the amount of carbon stored per hectare of forest with specific silviculture strategies)
  - Increase the use of wood.
- reducing delays in forest regeneration, not burning but utilizing harvesting slash piles and modifying harvesting and wood processing can all lower emissions .
- potential tool to make stronger decisions to preserve or enhance wildlife habitat, cultural areas, or riparian function.
- identify opportunities to substitute timber products for carbon-intensive steel, concrete or plastics used in many sectors, including the building industry - an example is Cross Laminated Timber (CLTs) that are replacing steel and concrete in building in Toronto.

## Next Steps

With recent international agreements signed on climate change mitigation, Canada will eventually have to land policies and investments on the ground. Ontario is already pushing ahead of the curve with Cap and Trade legislation, and the Pilot Enhanced Sustainable Forest Management License (eSFL) is a great opportunity to explore ways for Communities, First Nation Communities, Industry, and Government to work together in Improving Forest Management that balances or enhances: biodiversity, climate change, culture and still supports economic development that benefit the adjacent communities the most. The Ontario Ministry of Nature Resources and Ministry of Environment may use the learnings from the pilot eSFL to better understand what policies and/or investments work best to support government object that support industry and communities with the other 32 Forest Management Units in Ontario, which make up 44% of the Crown Forests in Ontario.

Currently, the eSFL only has rights to cut and sell logs to do Improved Forest Management. These are the activities/tasks proposed that are needed to move forward to make this a reality:

1. Develop pilot forest management strategies and run a number of scenarios to show different ways the carbon allowance revenue could be invested in land management activities that increase carbon pools/sequestration or reduce emissions (i.e. increase waste utilization, reduce waste piles, underutilized tree species, harvested wood



products that last longer etc). This would include analysis for each forest management strategy/activity:

- a. expected greenhouse gas reductions and marginal abatement costs (MAC)<sup>[1]</sup>;
  - b. jobs created or lost;
  - c. forest industry and government support (i.e. revenues, volume, etc); and
  - d. biodiversity, species at risk, riparian, wildlife and cultural values protected or impacted
2. Undertake a **Carbon Offset Feasibility Assessment** to frame up viability and commercial pathway to developing & selling carbon offsets created by improved forest management strategies on the eSFL. This includes assessment for sales into Ontario, Quebec, California, Federal and Voluntary carbon markets. - This will inform the Negotiations with Government on the Atmospheric Benefit Agreement.
  2. Negotiate with Ontario Government:
    - a Pilot **Atmospheric Benefit Agreement** for the Pilot eSFL (required for issuing offsets); and
    - allotment of **Carbon Allowance Revenues** for activities to be piloted with eSFL.
  3. Is there additional value of having Forest Stewardship Council (FSC) Certification for a Carbon Offsets Projects for a buyers by decreasing risk and if there are cost saving by having the third-party FSC Forest Management and Carbon Project verification period together? Additional requirements for management planning with FSC certification and carbon that will be required.
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[1] “MAC curves are derived from expert opinions, assumptions about emissions growth, and the emission reduction potential and cost of various technologies. In order to make their assumptions, experts consider factors such as the discount rate, the lifetime of the technology, investment and operating costs, and energy price.” (Nov 2011, Sustainable Prosperity Policy Brief: For A Low Carbon Economy)