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Additionality: Under the Kyoto Protocol, certificates will be awarded only to project-based activities where emission reductions are additional to those that would occur under the "business-as-usual" scenario. Further, "Financial Additionality" means that CDM projects which Annex I countries support within the framework of the Clean Development Mechanism should not be financed by official development aid, but that additional funding is to be made available for such projects.

Afforestation : Afforestation is the direct human-induced conversion of land that has not been forested for a period of at least 50 years, to forested land, through planting, seeding and/or the human-induced promotion of natural seed sources.

Baseline: The baseline represents forecasted emissions under a business-as-usual (BAU) scenario, often referred to as the 'baseline scenario' i.e. expected emissions if the emission reduction activities were not implemented.

Biotechnology: Biotechnology is the application of scientific and engineering principles to process living organisms to provide goods and services. Living organisms are biological agents such as bacteria, fungi, plant and animal cells, and parts of all the preceding e.g. enzymes. Products of biotechnology are encountered everywhere, examples being: cheese, yogurt, alcoholic beverages, antibiotics, vaccines, ethanol, acetone, animal feeds, nitrogen-fixing inoculants, tissue culture, water purification, and effluent treatment.

Canada's Climate Change Action Plan: In 1998 the Government of Canada began to mobilize federal resources and expertise toward a national strategy to meet the climate change commitments it made in Kyoto in December 1997. This strategy has been developed in consultation with the provinces, business, industrial sectors and other stakeholders, and will be essential in ensuring that Canada meets its domestic and international commitments to reduce greenhouse gas emissions. In November 2002, Canada's Climate Change Action Plan was published and can be read at: http://www.climatechange.gc.ca/plan_for_canada/plan/pdf/full_version.pdf

Carbon offset: A mechanism by which the impact of emitting a tonne of CO₂ can be negated or diminished by avoiding the release of a tonne elsewhere, or by absorbing a tonne of CO₂ from the air, whether domestically or internationally, that otherwise would have remained in the atmosphere. The Climate Change Plan for Canada proposes that agriculture, forestry and possibly landfills will be covered by an offset system. As well a variety of targeted measures will be implemented to achieve emission reductions in other sectors.

http://www.climatechange.gc.ca/english/publications/offset_dp/dp/annex2.asp

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Carbon Sequestration or Carbon Sinks: The Kyoto Protocol recognizes that reducing net emissions of carbon dioxide (CO₂) can be accomplished in two ways: either by reducing the rate at which CO₂ is added to the atmosphere (e.g. from burning fossil fuels or from clearing and burning forests), or by increasing sequestration—the rate at which CO₂ is removed from the atmosphere (e.g. by storing additional carbon in forests, soils and other carbon sinks). The latter can be accomplished through land management activities including revegetation, reforestation and afforestation as well as forest, cropland and grazing land management. Through photosynthesis plants remove carbon dioxide from the air, give off oxygen, and store the carbon as biomass. About one half of the dry weight of plant biomass is carbon, and one tonne of carbon in biomass represents 3.67 tonnes of atmospheric carbon dioxide.

Certified Emission Reduction (CER): A carbon credit from a Clean Development Mechanism project. CERs are equal to one tonne of carbon dioxide equivalent (tCO₂e).

Clean Development Mechanism (CDM): Clean Development Mechanism, or CDM, is a market mechanism defined in Article 12 of the Kyoto Protocol as a project between a developed country and a developing country that provides the developing country with the financing and technology for sustainable development and assists the developed country in achieving compliance with its emission reduction commitments. Mikro-Tek has initiated CDM carbon sequestration projects with landowners in Chile and nearly 3 million seedlings have been inoculated to date, to afforest approximately 2,400 hectares of under-productive grazing land. Mikro-Tek has carried out an in-country baseline study, is in the process of registering these projects with Chile's Designated National Authority, and will bring them forward to the CDM Executive Board for registration as Certified Emission Reductions (CERs). <http://www.dfait-maeci.gc.ca/cdm-ji/>

Domestic Forestry: Mikro-Tek's technology was first proven in large-scale domestic forestry projects with data, collected from approximately 10 million forest seedlings planted across Canada, demonstrating average increases in survival and/or growth of 25%. These field results were used to certify that the claims made are accurate and the product is safe for use, and to obtain commercial product registration as a Microbial Supplement under the Fertilizers Act from Agriculture Canada. Mikro-Tek has inoculated 16.6 million seedlings in the Canadian Boreal forest to reforest approximately 9,700 hectares, and the emission reductions (ERs) generated in these projects will be registered as soon as the Canadian Domestic Plan is finalized and a registration process and entity are established. Once these tonnes of carbon sequestered are approved under Canada's Domestic Plan, they will become removal units (RMUs) and can be used by Large Final Emitters to offset their CO₂ emissions and/or sold on the developing international carbon markets.

Five Winds International (<http://www.fivewinds.com/>)

Large Final Emitters (LFEs): Large final emitters are companies that produce goods in emissions-intensive sectors including primary energy production, electricity production, and selected areas of mining and manufacturing production. The Climate Change Plan defines large final emitter sectors using the following two criteria: (i) annual average emissions of 8 kt carbon dioxide equivalent (CO₂e) per establishment or more; and (ii) annual average emissions of 20 kg CO₂e per \$1000 gross production or more. . In 2000, 46 percent of Canada's greenhouse gases came from large final emitters. The total number of firms with emission reduction targets is expected to be between 650 and 700.

The Climate Change Plan for Canada proposes that targets for emissions reductions -- totalling 55 Mt -- be established for LFEs through a backstop/covenant system. The covenant would be an agreement regarding CO₂ emission reductions between the LFE and the federal government. The backstop will provide a "default" target for industry and cover such issues as compliance, reporting and verification. Companies will be given the option of remaining under the provisions of the backstop or entering into a covenant with the Government. A LFE could meet its target under the backstop or a covenant in several ways - reduce its own emissions, purchase the emission reductions of other LFEs in the form of domestic permits, purchase Kyoto compliance units, and/or purchase offset credits. http://www.climatechange.gc.ca/english/publications/offset_dp/dp/annex2.asp

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Leakage: Leakage is the indirect effect of emission reduction policies or activities that lead to a rise in emissions elsewhere (e.g. fossil fuel substitution leads to a decline in fuel prices and a rise in fuel use elsewhere). For land use change and forestry activities, leakage can be defined as the unexpected loss of estimated net carbon sequestered (e.g. by fire, disease, land clearing etc.)

Monitoring: Monitoring is the exercise carried out by an independent third party to measure key data that enable the reduction in greenhouse gas emissions to be determined

Permanence: Permanence refers to the length of time carbon will remain stored after being sequestered in vegetation. For example, forestry sequestration is not permanent if the forestry activities are discontinued, whether on purpose (clearing of land) or as a result of undesirable events (fire or disease).

Reclamation/Agriculture: Long-term field studies have demonstrated that land management practices such as restoring degraded lands and modifying tilling practices can increase the amount of carbon sequestered in the soil rhizosphere. Mikro-Tek is developing applications for enhancement of soil organic carbon sequestration in grassland reclamation and agricultural projects. Under contract with [Sustainable Development Technology Canada](#), Mikro-Tek is collecting field data in the agricultural and reclamation sectors to qualify and verify the inoculation technology's ability to increase soil organic carbon sequestration. Initial test plots have been established in agricultural and mine land reclamation sites in Northern Ontario and additional sites are planned for establishment on highway, pipeline and electrical transmission right-of-way corridors.

Reforestation: Reforestation is the direct human-induced conversion of non-forested land to forested land through planting, seeding and/or the human induced promotion of natural seed sources, on land that was forested but that has been converted to non-forested land. For the first commitment period, reforestation activities will be limited to reforestation occurring on those lands that did not contain forest on 31 December 1989.

Removal unit (RMU): A carbon credit derived by means of Land Use, Land Use Change and Forestry (LULUCF) activities, equal to one metric tonne of carbon dioxide equivalent (tCO₂e).

SMART protocol (System for Monitoring and Reporting Technologies)
http://www.climatechange.gc.ca/english/publications/team_smart/chap4.asp

Surplus: GHG reduction/removals must be surplus to generate offset credits. There are two elements to the surplus requirement:

1. The reduction/removal, or the activity that causes it, exceeds the level that might reasonably be expected to be achieved due to another government climate change measure.
2. The reduction/removal, or the activity that causes it, is not required by an existing federal/ provincial/ local regulation or operating certificate. Provincial or local regulation varies across the country so activities that are eligible to generate offset credits in some jurisdictions could be ineligible in others. Reductions/removals under a voluntary agreement may not be eligible if the agreement is comparable to a regulatory requirement.

Sustainable Development: The most frequently quoted definition is from the report *Our Common Future* (also known as the Brundtland Report): *"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."* Sustainable development focuses on improving the quality of life for all of the Earth's citizens without increasing the use of natural resources beyond the capacity of the environment to supply them indefinitely.

In addition to increased carbon sequestration, Mikro-Tek's technology provides many other benefits that contribute to sustainable development. Increasing soil organic carbon (SOC) generally enhances plant productivity and soil quality. Higher levels of SOC improve soil structure, increase soil porosity and water holding capacity, and improve biological health of the soil, enhancing land sustainability, wildlife habitat and water quality. In most locations, especially environmentally sensitive settings, practices that increase SOC also result in decreased wind and water erosion which normally degrade soil carbon stocks further. Economic and environmental benefits also include reduced use of

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fertilizers (and the associated GHG emissions produced during their manufacture and application), reduced use of diesel fuel for farm machinery, increased crop yield, and in the forestry sector, increased timber or fibre production on a set land base.

Technology Early Action Measures (TEAM) (http://www.climatechange.gc.ca/english/team_2004/)

Verification: In order for CDM projects to have a formalized validation of an emission reduction stream, a recognized independent third party must confirm that the claimed emissions reduction activity has occurred.

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