Dairy Farmers of Canada's Submission to the Senate Standing Committee on Agriculture and Forestry in View of its Study on Bill C-74 Part 5, the *Greenhouse Gas Pollution Pricing Act*

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On behalf of Dairy Farmers of Canada (DFC), thank you for the opportunity to make this submission to the Senate Standing Committee on Agriculture and Forestry, in view of your review of Part 5 of Bill C-74, the *Greenhouse Gas Pollution Pricing Act*.

The Canadian dairy sector is a significant contributor to the Canadian economy. According to the latest study conducted by EcoRessources, in 2015, Canada's dairy sector contributed $19.9B to the GDP, and $3.8B in tax revenues, while sustaining 221,000 full-time equivalent jobs across the country. From 2013-2015, this represents a 5% increase in this sector's contributions to the GDP, a 5% increase in tax revenues, and a 3% increase in jobs. A new report will be available during the summer, and we are confident that the numbers will reinforce this trend, as the dairy industry is going through a period of unprecedented growth. In addition, dairy is one of the top two agricultural sectors in 7 out of 10 provinces. Furthermore, unlike other jurisdictions where farmer's incomes are heavily subsidized, Canadian dairy farmers receive no direct subsidies for milk production.

DFC recognizes that climate change is an important challenge. We commend the government for taking climate change seriously and promoting efforts toward greenhouse gas (GHG) mitigation and climate change adaptation. We further recognize the consideration that the government has given to the agricultural sector by exempting some farm fuels from the carbon pricing structure outlined in the Act.

DFC also notes with appreciation that the government has excluded GHGs of a biological nature from their pricing scheme. We recognize that the dairy industry is a source of methane emissions, and also want to point out that the numbers show we have improved our footprint over time. We understand the importance of addressing these emissions and managing climate change impacts. That is why, as an industry, we have been directly investing in research to mitigate GHGs since 2002, and continue to prioritize research in this area.

In the dairy industry, the majority of our emissions are of a biological nature, coming from enteric emissions from cattle and from manure storage, rather than the burning of fossil fuels. However, our industry has made significant progress over time. Since 1990, the year taken as a base for the National Inventory Report, which the federal government reports to the United Nations Framework Convention on Climate Change, the Canadian dairy industry has steadily reduced its carbon footprint (-12% between 1990-2016). Over the same time period, milk production in Canada has kept pace with increasing demand, resulting in a corresponding 23% decrease in greenhouse gases per litre of milk produced. Today's average cow produces roughly 1.8 times the amount of milk that the average cow did in 1990, and roughly 3 times the amount of milk as a cow did 50 years ago. The bottom line is that the efforts of Canadian dairy farmers to continuously increase their on-farm productivity has contributed to a significant reduction of the sector's carbon footprint.

Put another way, using preliminary data from a lifecycle analysis (LCA) of Canadian milk that is currently underway, the average carbon footprint of a litre of Canadian milk was estimated at 0.91 kg CO_2-equivalent. This is a roughly 8% improvement on a per litre of milk basis in the last 5 years, and it is among the lowest carbon footprints for milk in the world. In addition, the industry has recently built upon this LCA by creating an on-farm footprinter, known as Dairy Farms + (dairyfarmsplus.ca), which allows an individual farmer to calculate the carbon footprint of their own farm. Using this tool, Canadian dairy farmers can also create different scenarios to evaluate the impact of one activity versus another, and also have the footprinter generate tips to continue to improve their on-farm practices to reduce their environmental impacts!

As Canadians, we recognize the need for climate change action. However, all actions need to be balanced and fully assessed. In agriculture, programs to help reduce emissions should be applied carefully to avoid the unintended consequence of weakening the ability of farmers to make investments into energy efficient technologies or switch to renewable energies. Any additional costs of production coming as a result of a carbon or fuel tax represent that much less money that farmers can use to make these types of important investments.

Dairy Farmers of Canada is proud of the continuous improvement and ongoing efforts made by Canadian dairy farmers in the fight against climate change, but we recognize there is more work to do. As an industry, dairy farmers have every intention to continue their efforts to be innovative and forward-thinking, and will continue to invest in practices and technologies that mitigate the sector's greenhouse gas impact.

Mitigation opportunities in the dairy sector

Canadian dairy farmers have been steadily decreasing their carbon footprint over time. They, like farmers in all commodities, are managers of carbon and nitrogen – key components in carbon dioxide, methane and nitrous oxide. While dairy farmers very openly recognize the methane emissions from their cattle, they also note that their farms have a significant opportunity to sequester carbon in the soil and mitigate emissions. A few examples include:

1. **Tillage**. Like other farmers, dairy farmers have increasingly adopted reduced tillage practices, recognizing the value this practice has for soil health, as well as in contributing to carbon sequestration.

2. **Manure is a very valuable fertilizer**. Research done at Agriculture and Agri-Food Canada (AAFC) and supported by DFC through the Dairy Research Cluster has shown that, compared with mineral fertilizer, manure helps to sequester carbon in soils, where soil retains more carbon and nitrogen when it is applied in the form of manure, rather than mineral fertilizer. Manure is a very important part of nutrient management on dairy farms; good manure management leads to increased nutrient uptake by plants, and therefore, less nutrient loss to the atmosphere and more productive cropping.

3. **Genetic improvements and genomics** have led to each generation of cows being healthier, more productive and more efficient in their production of milk than the preceding one. Understanding the genome of the cow has had tremendous impact on our understanding of many productivity traits, and now allows for the identification of bulls that have the best genetic potential for such traits. Genomic research has the potential to significantly improve feeding efficiency in cows, which directly contributes to a reduction in greenhouse gases. As an example, the Efficient Dairy Genome Project (http://genomedairy.ualberta.ca/), led by two Canadian researchers based in Guelph and Calgary, is an international collaboration success story with eight countries participating. The research aims to better understand the genome of the cow, so that we are able to select for higher feed efficiency and decreased methane emissions. This means that emissions would be reduced and less land would be needed to produce the same litre of milk. Feed-efficient cows better digest their food into milk, wasting less feed, and consequently emitting less methane. **Preliminary estimates from this research show that breeding dairy cattle with increased feed efficiency and reduced methane emissions can**

reduce feed costs by $108/cow/year and decrease methane emissions by an estimated 11-26%.

4. **Anaerobic digestion**. Despite the significant cost, dairy farmers were among the first adopters of on-farm anaerobic digesters in Canada. This is a win-win technology that captures methane gas from manure storage and produces biogas for use to produce heat or electricity. Notably, the significant capital investment required has stunted the rate of adoption. However, in March, the first packaged mini-digester in Canada was installed and connected to the grid on a dairy farm in Ontario. This project was part of a study to assess the financial feasibility of small-scale digesters, and this particular digester was pre-fabricated; once it arrived on the farm, it was installed in less than a week. While it is still early, there is a lot of potential, and interest, for adoption of this type of digester on farms of 50 to 240 head of cattle.

The Impact of Carbon Pricing on the Canadian Dairy Sector

While DFC is supportive of the goal of reducing greenhouse gas emissions and other environmental impacts, and can demonstrate that Canadian dairy farmers have already made progress here, we do have some concerns related to carbon pricing and the way the Bill proposes it to be enacted in provinces without their own pricing program.

A price on carbon will impact Canadian dairy farmers, whether they are in a province that has implemented a carbon tax or cap-and-trade system, or whether they are in a province where the federal backstop is applied. Below are some general ways DFC expects dairy farmers will be impacted by the carbon price:

1. **The cost of inputs increases**. A recent AAFC presentation about the financial impacts of the federal carbon pricing program showed only minor impacts on farm expenses and incomes. However, their analysis did not include the indirect costs of the pricing or an analysis of the effect on margins and profitability. Indirect costs will affect the price of all services on a dairy farm, such as the invoice from the veterinarian who has to pay more for their fuel, and the higher cost of transportation and production of any goods purchased off-farm, such as fertilizer, seeds or animal feed. It is likely that any extra costs borne by suppliers will be passed downstream to farmers. Since the farm has little control over these inputs, and pay transportation costs for things they buy as well as in shipping their product to market, they will simply have to absorb the extra costs. Because the profit margin on farms is quite small, any increase in costs significantly reduces their profitability – impacting their ability to make important investments into energy efficient technologies.

2. **Milk transportation**. Farmers pay for the transportation of milk to processing plants. Because of the system of supply management that directs milk to processors on an as needed basis, the pick-up and delivery of milk has already been optimized to ensure the most direct and efficient routes are used. Farms are in rural locations and there is very little that can be done to decrease the kilometers travelled to and from farms to pick up milk. Milk transportation represents 3.3% of the total cost of production of dairy farmers. The extra cost from carbon pricing will increase farmer expenses.

3. **Increased costs throughout the value chain**. Although not directly related to dairy farmers, carbon pricing could also increase the costs borne by the rest of the agri-food value chain (by both processors, and retailers). This is likely to impact the costs for consumers at the retail level on products from across the entire sector.

4. **Opportunities for revenue recycling and/or offset credits are not fully developed**. While this submission is primarily related to Part 5 of C-74, in addition to the federal program, the lack of access to opportunities for farmers to benefit from climate change policies appears also to be a problem in some of the provinces that already have instituted a price on carbon. Notably, both Quebec and Ontario are still in the development phase for many of their offset programs, particularly those related to agriculture. DFC recognizes the recently released Low Carbon Economy Challenge, and that agricultural projects to reduce GHG emissions or increase carbon storage are eligible for this program. However, the funding is open to many other stakeholders, and we expect very little will trickle down to the agricultural sector. DFC recommends investment in programs that are specific to agriculture, as these will have higher visibility among farmers and are likely to have greater uptake. These programs are needed in order to provide opportunities for farmers to recover some of the extra expense from the price on carbon. We will note, however, that revenue recycling programs and offset programs need to be structured in a way that will facilitate farmer-participation. Farms, and especially small farms, will be turned away from participating in programs that add significantly to their administrative burden.

Specific impacts of Part 5 of Bill C-74

In addition to the impacts noted above related to a carbon tax generally, DFC has also identified the following potential impacts from the *Greenhouse Gas Pollution Pricing Act* on dairy farmers:

1. **Only some farm fuels are exempt**, with natural gas being a notable exception that will still be subject to the carbon price. Many dairy farmers grow their own crops and dry their grains using natural gas. What is already a hefty expense each year will only increase. For those farms that purchase grains from off-farm, the price will also increase. Grains provide an important energy source for cows, and including grains in the cows' feed generally decreases enteric methane production.

2. **Provinces where the grid mix includes fossil fuels will see an increase in electricity prices.** The Act does not include rebates on electricity used by farms. While we understand that developing a rebate structure could be complex, DFC encourages the government to consider introducing a rebate program to offset some of these costs.

3. **The definitions of "eligible farming activity" and "farming" in the Act should be clarified.** The definition of farming includes tillage of the soil and dairy farming. In order to avoid any confusion or omission of activities such as manure spreading or fertilization, we recommend including cropping within this definition. Similarly, it is not clear from the definition of eligible farming activity whether custom operators, employed for specific activities such as fertilizing, spraying, manure hauling and harvesting, would be included, or whether they would be included only if they are farmers themselves. While we do not know of any studies that consider custom work from either an economic or environmental perspective, we can say anecdotally that custom work allows for lower costs at the farm by reducing the need for farms to own and maintain a wide range of farm machinery. We recommend ensuring that the definition be

expanded to include the on-farm work completed by custom operators, whether they are farmers themselves or not.

DFC would note that information presented by AAFC based on GHG emissions data from Environment and Climate Change Canada and GDP data from Statistics Canada show a continuing decrease in GHG emissions intensity from the agricultural sector over the past 20 years, consistent with what the dairy industry has experienced. Therefore, we question the value of applying a price on carbon to the sector, since it is unclear that it will increase mitigation. We commend the government for exempting some fuels for agricultural use from the price on carbon, but we recommend going further and exempting all farm fuels and ensuring that the cost of food production is impacted as minimally as possible.

Finally, as noted in the submission made by DFC to this committee last year, supply management may make it possible for the Canadian dairy sector to recover some of the extra costs related to increases in the price of fuel, fertilizers, pesticides, milk transportation, electricity rates, and other items, stemming from the carbon price. **However, it must be stated clearly that DFC does not believe it is fair to add and distribute these extra costs throughout the supply chain, as the end result may be an increase in retail prices for Canadians.**

Milk is a nutritious staple for Canadian families, and milk and dairy products are an excellent source of good quality, sustainable protein and up to 16 other essential nutrients. Furthermore, scientific evidence demonstrates that milk products reduce the risk of chronic non-communicable diseases, including: cardiovascular disease, certain cancers, type 2 diabetes, and musculoskeletal disease. Milk products are the most important contributor of Canadians' potassium intake, and contribute approximately 54% of calcium intake, 43% of vitamin D intake, 29% of vitamin A intake, 18% of zinc intake and 12% of magnesium intake. Moreover, Canadians do not consume enough of the following eight nutrients: **vitamin D**, **calcium**, **magnesium**, **zinc**, **potassium**, **vitamin A**, vitamin C and fibre. Notably, milk products are a key source of six of these nutrients (in bold).

Furthermore, dairy products are part of a sustainable diet. As defined by the Food and Agriculture Organization of the United Nations, a sustainable diet should meet the following conditions: nutritionally adequate, safe and healthy; culturally acceptable; protective and respectful of biodiversity and ecosystems; accessible, economically fair and affordable. Though we would be happy to submit more information to this committee at a later date as to how dairy fits within each of these conditions, we will focus here specifically on the ecological component, and the contributions to carbon footprint. As mentioned already, the carbon footprint of milk has been decreasing over time and will continue to do so thanks to research, innovation and the adoption of beneficial practices and technologies on farms. An Australian study[1] looked at the contribution of different food categories to the diet, and found that in both average diets and recommended diets, the greenhouse gas contributions of dairy, grains, and fruit and vegetables were roughly equal. In other words, in a healthy diet, dairy's GHG emissions are more or less equal to those from plant-based food groups. Other studies of European and Mediterranean diets have found similar results, though we are not aware of any studies of this kind in Canada.

Nutritious dairy products are sustainably produced, and are a key component of a healthy diet. Their consumption should be encouraged, not discouraged.

[1] Hendrie GA et al. Nutrients 2016.

Recommendations

1. Exempt all farm fuels, i.e. including natural gas, from paying a carbon price. Ensure that on-farm operations such as manure hauling, harvesting, etc. undertaken by custom operators are included in the definition of eligible farming activities. Create a rebate or exemption for electricity, where it is produced with fossil fuels.

2. Ensure that opportunities for revenue recycling and participation in offsets programs are easily accessible for all farms, despite their size. It will be important to create incentives toward reducing on-farm GHGs by returning the revenue from the carbon price to farms so that added costs are not a hindrance to further reductions of GHG emissions, and so farmers can increase their opportunities for sequestration.

3. Continue to invest in research in GHG mitigation and climate change adaptation. DFC has been investing in research aimed at improving various aspects of farm sustainability since the 1990s, in cost-sharing agreements with the federal government. The first Dairy Research Cluster, the current format for cost-sharing research investments, was put in place in 2010. The research financed through this collaboration has led to much of the improvement in genetics and animal nutrition, as well as the identification of beneficial practices.

4. Increase support for knowledge translation and transfer (KTT) initiatives. As noted in DFC's submission to this committee last year, one of the challenges to the continued reduction of the industry's carbon footprint is meaningfully sharing research findings with farmers. Two main areas that we think show potential for increased KTT and which could help to mitigate emissions without significant investment, are cropping or manure management practices that reduce losses of nitrogen, and practices or technologies that reduce methane from enteric fermentation or manure management.

Conclusion

Canadian dairy farmers believe that the sustainability of our environment is of critical importance – not only for the success of their businesses, but for their country, for the world, and for the humans and animals inhabiting it. Canadian dairy farmers have always recognized that continuously improving their practices has beneficial long-term impacts. We take great pride in our responsibility as stewards of the land, water and air, and seek to continuously reduce the environmental impacts of our farms over time. Preserving the environment matters to all Canadians; with the support of the Canadian government, Canadian dairy farmers can continue to build on their success story.

DFC must also point out that dairy farmers are already facing a series of domestic and international challenges that are related to government work and policy. From the uncertainty of what NAFTA could bring, which would add to the impacts of previous trade deals such as CPTPP and CETA; to front-of-package labelling and the Healthy Eating Strategy, which are already eroding consumer perception of nutritious dairy products. The cumulative impact of these policies is significant and runs counter to the Government's publically stated desire to see the agri-food sector – and dairy specifically – thrive.

Thank you for the opportunity to make this submission. Please feel free to contact Dairy Farmers of Canada should you have any questions related to this document or the Canadian dairy sector.