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Financial Instruments Branch  
Ontario Ministry of Environment, Conservation and Parks  
40 St. Clair Avenue West, Floor 8  
Toronto, ON  
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**RE: CF Industries Comments on Proposed Regulatory Amendments for Emissions Performance Standards Program 2023-30**

CF Industries Holdings, Inc. ("CF Industries" or "CF") welcomes the opportunity to provide feedback on the proposed Emission Performance Standard ("EPS") regulatory amendments that were published on the Environmental Registry of Ontario on August 26, 2022. We offer the following comments on how the EPS system can be designed for the 2023-30 period to achieve positive outcomes for Ontario related to greenhouse gas emission reductions, industry competitiveness, and food security.

**About CF Industries**

At CF Industries, our mission is to provide clean energy to feed and fuel the world sustainably. With our employees focused on safe and reliable operations, environmental stewardship, and disciplined capital and corporate management, we are on a path to decarbonize our ammonia production network – the world's largest – to enable green and blue hydrogen and nitrogen products for energy, fertilizer, emissions abatement and other industrial activities.

Headquartered in Deerfield, Illinois, CF operates manufacturing complexes in the United States, Canada, and the United Kingdom, with an unparalleled storage, transportation and distribution network in North America, and logistics capabilities enabling a global reach. Through its wholly owned subsidiary, Terra International Canada, CF owns and operates the Courtright Complex ("Courtright") near Sarnia – Ontario's only nitrogen fertilizer manufacturing facility.

As the world's largest producer of ammonia, our business over the last 75 years has primarily revolved around how the nitrogen in ammonia helped the world meet the challenge of feeding a growing population. Ammonia, as the building block for nitrogen fertilizer products, is essential to feeding the world by providing crops with nitrogen in a useable form. Nearly half of the global food supply is made possible only through fertilizer use. With the world's population expected to exceed 10 billion people by 2050, fertilizers will become even more essential to increasing yields on existing farmland to feed a growing population.

**CF's Clean Energy Commitment**

CF has committed to reducing our own CO<sub>2</sub>-equivalent emissions by 25% per ton by 2030 and achieving net zero carbon emissions by 2050. As part of that commitment, CF announced plans for our first green ammonia project in Donaldsonville, Louisiana, and is advancing blue ammonia projects across our network. CF's efforts to produce, distribute and deliver clean hydrogen in the form of green and blue ammonia can unlock hydrogen's potential as a clean energy source and accelerate North America's

energy transition through decarbonization in manufacturing, transportation, power generation and other sectors of the economy.

CF's network-wide decarbonization commitment includes our Canadian manufacturing facilities. We are actively investigating opportunities at the Courtright facility as well as our facility in Medicine Hat, Alberta. Opportunities may include the production of blue ammonia through carbon capture and sequestration ("CCS") and/or green ammonia using zero-carbon electricity. This type of investment would transform CF's emissions profile and make a meaningful contribution to Canada's climate goals.

### **Sustainably Providing Essential Crop Nutrients to Ontario Farmers**

For more than 50 years, CF's Courtright facility in southwestern Ontario has been an essential part of Ontario's agricultural and industrial supply chain and an important contributor to the provincial economy. Courtright produces nitrogen-based products such as ammonia and urea ammonium nitrate ("UAN") for agricultural and industrial use, as well as industrial products such as diesel exhaust fluid ("DEF"). At CF, we have also actively managed our network to reduce our carbon emissions intensity through choice of feedstock; investing in safety, efficiency, and reliability; and maximizing capacity utilization. As result of investments made at Courtright, it is one of the most efficient facilities of its kind in the world.

Nitrogen fertilizers are global commodities, manufactured by hundreds of producers in more than 60 countries and sold around the world as essential inputs to food production. Over the past year and a half, a combination of supply disruptions (including foreign government export restraints), increased fertilizer demand, and higher nitrogen fertilizer and distribution costs have contributed to challenging market conditions not just in Ontario but globally. Concerns about global food security have been exacerbated in recent months, particularly in connection with Russia's invasion of Ukraine (which has directly and indirectly, through natural gas price increases and volatility in Europe, limited fertilizer supply) leading to increased interest in growing more resilient and sustainable domestic sources of key fertilizer products.

In Ontario, farmers rely heavily on nitrogen fertilizer imports to deliver crop yields. Approximately 660,000-680,000 tonnes of nitrogen fertilizer are imported from Russia into Eastern Canada annually, accounting for 85-90% of total use in the region<sup>1</sup>. The Courtright facility faces substantial direct competition in particular from Russian fertilizer imports that benefit from artificially low and subsidized natural gas prices and are not subject to any carbon costs (or even market pressures to reduce emissions).<sup>2</sup> These market dynamics pose a three-fold risk to Ontario under the current and proposed EPS:

- 1) Carbon leakage from Ontario's domestic fertilizer industry to foreign producers as the cost of carbon rises and more carbon-intensive imports out-compete Canadian production;
- 2) Increased dependence of Ontario farmers on unreliable fertilizer supply from Russia and other imports; and
- 3) Reduced economic activity in Ontario.

CF's Courtright facility offers a stable domestic supply of fertilizer that reduces the reliance of Ontario farmers on imports. From 2019-2021, approximately one third of the UAN sold in Ontario was produced by CF at Courtright. UAN is a liquid fertilizer produced by combining urea, nitric acid and ammonia, and is widely used by Ontario farmers.

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<sup>1</sup> Grain Farmers of Ontario. *Farm Groups and the Fertilizer Industry Call on Government to Support Farmers After Impact of Russian Tariffs*, available [here](#).

<sup>2</sup> Notably, the Russian oil and gas sector is more than twice as methane emissions intensive than the Canadian oil and gas sector, contributing significantly to upstream emissions as well. Canadian Energy Centre, *International Comparison Shows Canada is Doing Its Part to Reduce Methane Emissions*, available [here](#). Tomas de Oliveira Bredariol and Rebecca Schulz, *Methane Emissions from Oil and Gas*, IEA, (November 2021), available [here](#).



Ontario farmers are looking ahead to the 2023 growing season and once again are concerned about accessing sufficient supplies of nitrogen fertilizer. CF's Courtright facility can continue to be a reliable supplier of crop nutrients to Ontario farmers but requires a flexible long-term carbon pricing policy that supports the competitiveness of domestic production of essential nitrogen fertilizer products such as UAN.

## Recommendations:

CF provides the following recommendations to enable the EPS system to continue to deliver emission reductions while promoting the competitiveness of Ontario manufacturers and supporting food security.

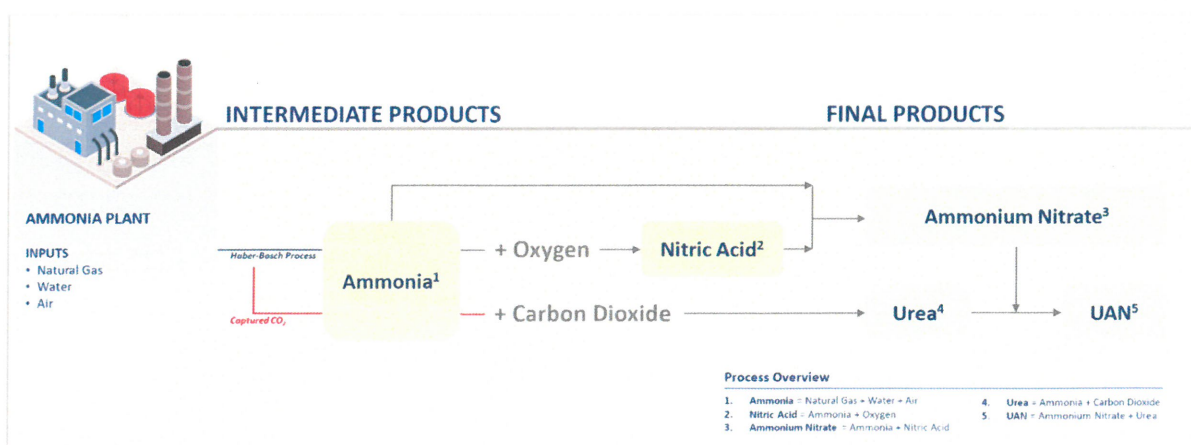
1. **Remove the CO<sub>2</sub> essential for urea and UAN production from a facility's total annual emissions so it is not subject to carbon pricing.**

Ontario's current and proposed EPS regulations require changes to appropriately account for CO<sub>2</sub> that is used during fertilizer manufacturing to produce urea, an essential crop nutrient. This change is fundamental to safeguarding future domestic nitrogen fertilizer supply for Ontario farmers in the face of steeply rising carbon costs and unreliable imports from unfriendly jurisdictions.

### Key features of the urea manufacturing process

There are several unique features of the urea manufacturing process that affect how the CO<sub>2</sub> associated with its production should be treated under carbon pricing systems.

Urea is produced from ammonia and CO<sub>2</sub> through the process illustrated below. At Courtright, approximately 30-35% of the gross ammonia manufactured at the facility is used to make urea, which is then further upgraded into other value-add products such as UAN. The second key input to the urea manufacturing process – CO<sub>2</sub> – is a byproduct of ammonia production. CF uses approximately 170,000 to 180,000 tonnes annually of the fixed process CO<sub>2</sub> it generates through ammonia production at Courtright as a feedstock to make urea. This CO<sub>2</sub> is not emitted by the facility and therefore should not be subject to carbon pricing under the EPS system. Because the CO<sub>2</sub> is used in the production of urea, the only way to reduce this CO<sub>2</sub> is to first reduce urea production.



### Impacts of Ontario's policy treatment of urea

Under the current EPS regulations, CO<sub>2</sub> used for urea production is included in Courtright's total reported emissions as fixed process emissions. Under the proposed updates, this CO<sub>2</sub> would be subject to an annual stringency factor of 2.4% in 2023 and 1.5% thereafter. This stringency factor effectively becomes a steep and unavoidable tax on CF's Ontario urea and UAN production because this CO<sub>2</sub> is not CF's emission and there is no way to reduce it to lower our compliance obligation, except by reducing

production of an essential crop nutrient. To put it another way, CF cannot reduce these emissions because there are no emissions to reduce.

As Ontario's carbon price rises through 2030 to meet the federal benchmark, it will at some point become more economic to permanently sequester that CO<sub>2</sub> underground than to pay the carbon compliance costs associated with using CO<sub>2</sub> as a feedstock to make urea. Ontario's carbon policy will be inadvertently incentivizing the loss of domestic fertilizer production with no corresponding emission gain as the lost production is replaced by more carbon intensive imports.

The CO<sub>2</sub> emissions for urea and UAN occur when these fertilizers are applied on the farm. These emissions from the application of fertilizer are widely classified as Scope 3, or indirect, emissions<sup>3</sup> and should therefore be accounted for through on-farm emission reduction programs, not through industrial carbon pricing regulations that are designed to cover only Scope 1 and 2 emissions.<sup>4</sup> Based on this internationally recognized categorization of downstream emissions, it does not make sense to price that CO<sub>2</sub> as if it is emitted by the facility when it is not. In fact, CF is not aware of any other sector that must account for its downstream emissions through the EPS system in the way that a urea producer does.

#### *A solution to safeguard Ontario urea production*

A relatively narrow change to the EPS performance standard methodology would address the current and proposed punitive treatment of Ontario-made urea-based products. CF requests that process CO<sub>2</sub> that is used for urea production is removed from the facility's reported emissions, thus exempting the feedstock CO<sub>2</sub> from carbon compliance costs. With only one urea manufacturer in the province, we view this as a low-impact adjustment that will not materially alter the overall emissions balance in the updated EPS program. In fact, because the CO<sub>2</sub> in question is not emitted, the proposed change will have no impact on Ontario's actual emissions profile. It will, however, help safeguard the only made-in-Ontario source of nitrogen fertilizers at a time of heightened concern about fertilizer supply and food security.

### **2. Confirm that nitrogen fertilizer manufacturing will continue to be classified under the EPS system as being at high risk of competitiveness and carbon leakage impacts.**

CF understands that all sectors currently covered under the EPS system, except natural gas distribution, are designated to be at high risk of competitiveness impacts and carbon leakage. This designation is highly appropriate for nitrogen fertilizer manufacturing, which is widely regarded as one of the most emissions-intensive and trade-exposed ("EITE") sectors globally,<sup>5</sup> due to its high percentage of unavoidable process emissions and its status as a widely traded global commodity. Given the commodity nature of ammonia, the high costs associated with decarbonizing ammonia production cannot be passed on to customers without risking the competitiveness of the domestic industry to the benefit of more carbon-intensive imports. The vast majority of Ontario's fertilizer imports are not incurring carbon costs, resulting in a significant competitive disadvantage for Ontario's only nitrogen fertilizer manufacturer.

CF requests the Ministry of Environment, Conservation and Parks ("MECP") to confirm and specify in regulation that nitrogen fertilizer manufacturing will continue to be designated as a high-risk sector through 2030. As outlined below, CF also requests that MECP undertake further modelling of EITE risk to identify those sectors in the broad high-risk category that are most exposed to competitiveness and carbon leakage risk.

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<sup>3</sup> [The Greenhouse Gas Protocol](#) outlines 15 categories of Scope 3, or indirect, emissions. These include "the end use of goods and services sold by the reporting company in the reporting year."

<sup>4</sup> [The Greenhouse Gas Protocol](#) defines Scope 1 emissions as direct emissions from owned or controlled sources and Scope 2 as indirect emissions from the generation of purchased electricity, steam, heating and cooling consumed by the reporting company.

<sup>5</sup> Canada's Ecofiscal Commission, *Provincial Carbon Pricing and Competitiveness Pressures* at pages 8, 9 (2015); International Institute of Sustainable Development, *Enabling Climate Ambition* at pages 1, 23, 24.



**3. If an annual stringency factor must be applied to fixed process emissions to meet the federal benchmark, implement a less stringent factor (e.g., 0.5%) for sectors with the highest sensitivity to competitiveness impacts and the rising cost of carbon.**

CF believes fixed process emissions from our Courtright facility should not be subject to an annual stringency factor. CO<sub>2</sub> is an unavoidable byproduct of the ammonia manufacturing process that cannot be abated through current processes. CF has already significantly reduced its emissions intensity at Courtright. Nevertheless, the proposed annual stringency factor on fixed process emissions, combined with the rising federal carbon price, will impose unsustainable new costs on the facility before it can implement capital-intensive emission-reduction technologies such as CCS. CF will be at a significant disadvantage to our international competitors, who do not face similar costs. As a result, uncompetitive domestic production could simply shift to other jurisdictions with lower costs and weaker environmental frameworks, resulting in greater global emissions and a loss of economic activity in Ontario.

MECP's proposed annual stringency factor on fixed process emissions does not distinguish between industries that are at low, medium or high EITE risk and therefore provides no accommodation for those facilities that face the most immediate and direct threat of lost competitiveness and carbon leakage. By designating virtually all covered sectors as high risk, Ontario's current risk modelling is overly broad and does not accurately reflect a given sector's sensitivity to the rising cost of carbon and the wide range of competitiveness impacts it experiences. This undermines Ontario's stated intent to minimize the risk of carbon leakage.

If a stringency factor must be applied to fixed process emissions to meet federal criteria, CF urges MECP to undertake additional modelling of EITE risk to identify only those sectors at highest risk and develop a separate lower annual stringency factor (e.g., 0.5%) for those sectors. There are several global examples of this type of EITE classification framework in carbon pricing systems. California's cap and trade system, the EU Emissions Trading System ("ETS") and the UK ETS all identify a small number of sectors that are afforded additional safeguards to reduce carbon leakage risk. In each case, nitrogen fertilizer manufacturing is included in this high-risk category and is subject to lower stringency rates.

**4. Allow CO<sub>2</sub> that is captured and permanently sequestered underground to be applied against a facility's total emissions.**

CF supports MECP's proposal to allow CO<sub>2</sub> that is captured and permanently sequestered to be deducted from a facility's total reported emissions.

Although CCS has significant potential to reduce emissions, it also has very high capital and operating costs and must be supported by market-based and regulatory tools that drive emission reductions in a cost-effective manner. This is a significant gap in the current EPS system which deters investment in carbon sequestration technologies.

The ability to reduce a facility's compliance obligation and potentially generate tradeable emission performance units through carbon sequestration will help incentivize the considerable capital investment required for this technology and will provide much-needed certainty for companies contemplating such long-term investments. The proposed change also will support implementation of *Ontario's Low-Carbon Hydrogen Strategy* as well as efforts to develop regional CCS hubs in southwestern Ontario and elsewhere.

The inclusion of CO<sub>2</sub> sequestration in the EPS program is a very important first step but more work needs to be completed on Ontario's overall CCS regulatory framework before the technology becomes a viable option for Ontario emitters. CF looks forward to the removal of the current prohibition against the

underground sequestration of CO<sub>2</sub> in Ontario and further development of a provincial CCS regulatory framework.

**5. Implement a mechanism to address errors and anomalies in data used to establish EPS performance standards, including the anomalous double stringency factor applied to current ammonia, urea and nitric acid performance standards.**

CF supports development of a mechanism specifically to adjust existing EPS performance standards to address errors or anomalies.

CF has identified to MECP an anomaly in the calculation of the EPS performance standards for ammonia, nitric acid and urea that materially and adversely affects Courtright's compliance position under the current EPS regulations. These performance standards appear to be calculated using the sector average emissions intensities established under the federal Output-Based Pricing System ("OBPS"). These averages, however, are then reduced by the OBPS's stringency factor (either 5% or 10%) and the EPS program's 2% annual stringency factor on combustion emissions.

There is no justification for applying a reduction factor from federal regulations to the provincial performance standards. Neither is it clearly laid out in the EPS methodology and guidance documents as an established method for setting sectoral standards in Ontario. CF requests the following amendments be made to the ammonia, nitric acid and urea performance standards starting in the 2023 compliance year:<sup>6</sup>

Activity	2014-2016 Canadian Average Fertilizer Baseline Emissions Intensity (BEI)
Per tonne ammonia	1.916
Per tonne of urea	0.180
Per tonne of nitric acid	0.348

**6. Aggregate public reporting for single-facility sectors, such as nitrogen fertilizer, to avoid public disclosure of commercially sensitive facility-level data.**

CF welcomes MECP's proposal to increase public reporting on the key features, outcomes and impacts of the EPS program. Sector-level reporting, however, must only be undertaken if the commercially sensitive data of individual facilities is suitably masked. As a publicly traded company, we follow rigorous public disclosure practices. CF does not disclose emissions, production, and compliance data at the facility level. Because Courtright is the only facility operating under Ontario's fertilizer sector performance standards, there is a risk that CF's commercially sensitive data could be disclosed.

Where a sector has one or a very small number of facilities, CF requests that data for this sector is aggregated with other similar activities for reporting purposes. Reporting data using the first three digits of the NAICS classification would provide reasonable granularity while protecting the data of individual facilities.

## Conclusion

We look forward to continuing to engage the Ontario government on the design of the EPS system to enable Ontario to meet emission reduction goals, participate in emerging clean energy opportunities and safeguard secure nitrogen fertilizer supply for Ontario's farmers.

<sup>6</sup> The baseline emission intensities are calculated using the unreduced OBPS sector average emissions intensities. The EPS's historic and proposed annual stringency factors would then be applied to the baselines in the table above.

Please feel free to contact me for further information.

Sincerely,

A handwritten signature in black ink, appearing to be 'G. Kennette', written over the word 'Sincerely,'.

Greg Kennette  
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Cc: Hon. David Piccini, Minister of Environment, Conservation and Parks  
Hon. Lisa Thompson, Minister of Agriculture, Food and Rural Affairs  
Hon. Victor Fedeli, Minister of Economic Development, Job Creation and Trade  
Hon. Todd Smith, Minister of Energy