NORTHSTAR'S EMPOWER ASPHALT SHINGLE REPURPOSING FACILITY FOUND TO REDUCE CARBON DIOXIDE (CO2) EMISSIONS OF LIQUID ASPHALT PRODUCTION BY 60%

Independent Life Cycle Assessment of the Empower Facility confirms carbon dioxide emissions benefits vs. landfilling asphalt shingles and use of virgin production

VANCOUVER, British Columbia – November 9, 2021 – Northstar Clean Technologies Inc. (TSXV: ROOF) ("Northstar" or the "Company") is pleased to announce the positive results of the independent carbon dioxide ("CO2") footprint Life-Cycle Assessment (the "LCA") completed by Burgess Environmental Ltd. ("Burgess") of selected performance indicators for Northstar's Empower Facility in Delta, British Columbia. The Global Reporting Initiative ("GRI") Standards were used as the framework for reporting on sustainability performance metrics. These performance metrics assessed the impacts and benefits of repurposing liquid asphalt shingles and compared them to the impacts and benefits of simply disposing of discarded or defective asphalt shingles.

Highlights from the Empower Facility LCA:

- Confirms the Empower Facility is a "circular", renewable industry solution with lower carbon dioxide emissions
- Net estimated greenhouse gas ("GHG") emission savings of 121.94 kg of carbon dioxide equivalent per 1 tonne of feedstock[(1)] through diverting shingles from landfills and replacing virgin production asphalt production from the Empower Facility
- Net estimated carbon dioxide emission savings in the range of 1,500,000 kg to 3,000,000 kg of carbon dioxide equivalent per year[(1)] dependent on steady state production volume

Empower Facility's Carbon Dioxide Emissions:

- 77.21 kg of carbon dioxide equivalent produced per 1 tonne of feedstock[(1)]

Virgin Production and Landfill Disposal Carbon Dioxide Emissions:

- 44.09 kg of carbon dioxide equivalent produced from 1 tonne of feedstock routed to landfills[(1)]
- 155.06 kg of carbon dioxide equivalent produced from 1 tonne of virgin asphalt, including transportation to the Vancouver market[(1)]
- 199.15 kg of carbon dioxide equivalent per 1 tonne of feedstock

Net Savings:

- **121.94 kg of carbon dioxide equivalent per 1 tonne of feedstock**

Aidan Mills, CEO of Northstar, states, "We are extremely excited about the positive results of the independent LCA. The LCA not only confirms the merits of our proprietary Bitumen Extraction & Separation Technology ("BEST") and the positive impact on the environment that we believe it will have, but it also measures the benefits of our production process when compared to sending asphalt shingles to landfills and using asphalt from virgin production. This analysis quantifies how our operations can support our customers and industry partners in delivering circular and "green" renewable asphalt produced with

significantly lower carbon intensity. The global context for reducing industry carbon footprints is forcing companies to identify alternative renewable avenues. With the reduced carbon footprint solution for repurposing asphalt shingles, we believe we can support our customers and industry partners on their sustainability journey."

Mr. Mills, also said, "Our long-term mission is to be an environmentally responsible, sustainable clean technology company delivering renewable products with a significantly lower carbon intensity. In addition to the full diversion of asphalt shingles from landfills, we now know our production process can deliver a meaningful difference to our climate by reducing carbon dioxide emissions in both degradation of asphalt shingle tiles in landfills and virgin asphalt production. We are committed to long-term sustainability of our operations. The first step on the journey towards carbon neutrality is to quantify corporate emissions accurately and the LCA quantifies exactly that."

Additionally, depending on the regulatory and legislative framework, carbon dioxide emissions benefits may allow Northstar to potentially generate future revenue and margins from carbon credit sales, in addition to the expected revenue streams from incoming tipping fees and from the sale of its end-use products: liquid asphalt, fiber, and aggregate.

LCA Results Summary

The LCA compared the following performance indicators for the Empower Facility to virgin asphalt production and landfill disposal of used discarded or defective asphalt shingles in accordance with the Global Reporting Initiative Standards:

- GHG / Carbon Dioxide Emissions
- Land Disturbance
- Water Consumption

GHG emissions, also known as carbon dioxide emissions, from the Empower Facility are expected to be 60% lower than the emissions related to virgin production and landfill disposal of the asphalt shingles, emitting 77.21 kg of carbon dioxide equivalent per tonne of feed stock compared to 199.15 kg of carbon dioxide equivalent per tonne of feedstock for virgin production and landfill disposal. This implies a net carbon emission savings of 121.94 kg of carbon dioxide equivalent per tonne of feedstock. Assuming that the Empower Facility operates five days per week and 52 weeks per year, and has a production range of between 50 and 100 tonnes per day ("tpd"), net estimated carbon dioxide emission savings are expected to be in the range of 1,500,000 kg to 3,000,000 kg of carbon dioxide equivalent per year. GHG emission reductions increase to over 220 kg of carbon dioxide equivalent per tonne of wood-based shingle feed and to over 240 kg of carbon dioxide equivalent per tonne when asphalt is sourced exclusively from oil sands.

Of the 199.15 kg of carbon dioxide equivalent per tonne of feedstock, the breakdown is the following:

- 151.81 kg of carbon dioxide equivalent per 1 tonne of feedstock is from virgin production,
- 3.25 kg of carbon dioxide equivalent per 1 tonne of feedstock is from transportation of replacement facility products to market,
- 44.09 kg per 1 tonne of feedstock is from degradation of asphalt shingles in a landfill.

Findings related to the other performance indicators also pointed to quantifiable benefits from the operation of the Empower Facility including:

- Reduction of water consumption by more than 650 litres per tonne of asphalt processed(1)
- Reduction of land disturbance by more than 0.44m^2 per tonne of asphalt processed(1)

Methodologies Used for Quantifying Emissions

The 2017 British Columbia Best Practices Methodology for Quantifying Greenhouse Gas Emissions was used to calculate emissions associated with fuel and electricity consumption. The U.S. Environmental Protection Agency ("EPA") Documentation for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model ("WARM") was used to quantify emissions associated to asphalt and aggregate production. A program published by Environment Canada in 2009 was used to predict landfill gas emissions associated with disposal of asphalt shingles. GHG analyses included carbon dioxide, methane, and nitrous oxide.

The full detailed Life-Cycle Assessment can be downloaded on our website at the following link: https://www.northstarcleantech.com/environmental.

Footnotes:
(1) Assuming the Empower Facility operates five days per week and 52 weeks per year.

About Northstar
Northstar Clean Technologies Inc. is a Vancouver-based clean technology company focused on the recovery and repurposing of single-use asphalt shingles. Northstar has developed a proprietary design process for taking discarded asphalt shingles, otherwise destined for already over-crowded landfills, and extracting the liquid asphalt, aggregate and fiber for usage in new hot mix asphalt, construction products and other industrial applications. Northstar's mission is to be the leading shingle material recovery provider in North America.

For further information about Northstar, please visit www.northstarcleantech.com. The Company's final prospectus dated June 18, 2021, among other documents, is available on the Company's profile page on SEDAR at www.sedar.com.

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