



A-B: Projects which use trenchless technology, like those pictured, will now count towards municipalities' carbon offsets in British Columbia.

BC APPROVES REVOLUTIONARY CARBON TRADING SYSTEM FOR MUNICIPALITIES

After 12 years of trials, testing and development, a carbon trading tool that helps local governments meet climate action goals has finally been approved by the Province of British Columbia, Canada. The system, which was conceived by three leading trenchless professionals, provides carbon credits to municipal bodies for favouring more environmentally friendly trenchless methods over traditional open cut operations.

In 2007, three trailblazers of trenchless technology in North America – Michael Aldritt, Preston Creelman and David O'Sullivan – decided to pursue an idea being encouraged by the Government of British Columbia (BC), Canada: a way for local municipalities to trade carbon credits for choosing trenchless technology over open cut for the installation and rehabilitation of their pipeline infrastructure. At the time, BC joined the Government of California in promoting the concept of a low carbon society.

The three men met during the annual Union of BC Municipalities meeting in Vancouver and decided to initiate the development of an approved system to account for the carbon savings from the use of the various trenchless methods. Little did Mr Aldritt, Mr Creelman and Mr O'Sullivan know, but it would take 12 years before the system was finally approved.

CARBON COMMITTEE

In 2011, BC's Green Communities Committee (GCC) established the Carbon

Neutral Framework for the province's local governments, which included four steps (measure, reduce, offset/balance and report) and two types of projects (Option 1 and Option 2) that local governments could undertake to reduce emissions within their communities.

Option 1 projects are predefined and approved GCC, while Option 2 projects are projects proposed and undertaken by the





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local government and validated and verified by third parties. GCC has previously developed and approved five Option 1 carbon emissions reduction projects.

Mr Aldritt, Mr Creelman and Mr O'Sullivan's carbon trading tool would subsequently be classified as an Option 1 project and would henceforth be referred to as: Option 1 Trenchless Technology Project.

RESEARCH AND DEVELOPMENT

With the support of the National Research Council's Industrial Research Assistance Program, the group commissioned a University of British Columbia (UBC) student to work with Professor Mark Knight at the University of Waterloo to develop a simple and initial tool.

They promoted an early iteration of the tool at the North American Society for Trenchless Technology's No-Dig Shows in 2011 and 2012, at the British Columbia Water & Waste Association Conferences in 2013 and 2016, as well as to other organisations in the province, as well as in Canada.

"We naively thought this would be an easy process, as it was so obvious to us; however, according to the British Columbia Government it was much more complicated," says Mr Sullivan, the President of contractor PW Trenchless.

"In the early part of this decade we teamed up with Mahbod Rouhany, who was working at UBC at the time, as he had worked on another calculator for hot in place asphalt. He was willing to work with us to move our calculator to a higher level.

"At this stage, this was the third calculator we had developed. Mr Rouhany then suggested that we work with Metro Vancouver (MV) and ask its air quality people to help us with developing the system."

INDUSTRY COLLABORATION

In July 2013, Mr O'Sullivan and his colleagues presented the idea to the Regional Engineers Advisory Committee on behalf of

MV. The organisation's staff continued to work with Mr Rouhany until December 2018 when the tool was finally approved by GCC.

"The city of New West did seek an approval of Option 2 in June 2017, which helped to prove the viability of the process to the province; however, it took the British Columbia Government a further 18 months to finalise the approval of Option 1 for trenchless technology," says Mr O'Sullivan.

CARBON CALCULATOR

The genesis of the project is the GCC Carbon Calculator, which enables local governments that undertake eligible capital projects that use trenchless technology to replace utility pipes (general maintenance projects are not eligible) and estimate the amount of emission reductions that are realised throughout.

The tool encompasses trenchless methods such as horizontal direction drilling, sliplining, pipe bursting, cured-in-place pipe lining, point repair and grouting. It outlines the emissions of a trenchless method in contrast to open cut and the difference between the two can be used as a carbon credit in BC.

While the tool has only been approved for use in the province, Mr O'Sullivan says there is scope to adapt the tool for other regions.

"The tool is set up so that it is adaptable to other provinces and states with little adjustment," he says.

"We hope this will lead to major advances in the future with how ageing utility infrastructure is replaced." ①

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