

GLOBE PERFORMANCE SOLUTIONS



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Green Procurement and ETV

Public authorities around the world are showing increased commitment to procuring goods, services and works with a reduced environmental impact throughout their life cycle. GLOBE Performance Solutions is collaborating with Environment Canada to further develop this concept in Canada.



The key objectives of the Canadian initiative are:

- (a) Inclusion of the Canadian ETV Program as part of the Green Procurement Policy of the Government of Canada
- (b) Broader recognition and acceptance of the principle of 'value-for-money' within the procurement process, reaching beyond lowest cost
- (c) Early adoption and use of innovative technologies with verified performance.

The examples below illustrate the link between ETV and Green Procurement Policy (GPP). They show how the ETV process is being used to enable value-added procurement, beyond simply lowest cost procurement.

The European Union (EU) is establishing new rules that will contribute to the implementation of the Europe 2020 strategy objectives for a greener, more social, innovative and inclusive economy. It is envisaged that the EU Environmental Technology Verification Pilot Programme (EU ETV) will play an important role as part of the public procurement process.



A new directive will encourage public authorities to consider the full life-cycle of products in their purchasing decisions. This will include both internal costs and costs imputed to environmental externalities (including the CO² footprint) linked to the product, service or works during its/their life cycle.

Criteria linked to the production process of the works, services or supplies to be purchased (e.g., the use of non-toxic substances) may be taken into account in award decisions, and contracting authorities may require specific labels certifying environmental, social or other characteristics.

Of particular relevance to ETV, contracting authorities may require a test report or certificate from a conformity assessment body as of conformity with requirements or criteria set out in the technical specifications, in the award criteria or in the contract performance conditions.

ETV can be a valid tool to demonstrate the compliance with the contract performance conditions, especially related to environmental and life cycle aspects. To boost the market uptake of innovative environmental technologies, EU ETV provides companies with a new, EU-wide means to prove the technology performance of their products or services, which can be used as part of the procurement process.

For additional information on how Europe is encouraging the use of ETV as part of Green Procurement, see also - www.etvexperience.org/

Korea has two types of ETV programs: New Excellent Technology (NET); and Technology Verification. NET consists of on-site inspection (for 1 day) and document review. Technology Verification consists of on-site verification and document review, and can take from 6 to 12 months. The certified or verified technologies benefit from extra points at public project biddings, the recognition of construction record, advertisement on the program website and at conferences. The Ministry of Environment (MOE) is providing support of up to 50% of the verification costs for promoting the commercialization of developed environmental technologies. See also - <http://www.koetv.or.kr/eng/index.html>



Street sweepers provide an excellent example of local government using the ETV process to enable value-added procurement beyond simply lowest cost.



Air quality modeling conducted by the City of Toronto to assess neighbourhood air quality revealed a problem with fine particulate matter at the street level. At the same time, both Toronto and the City of Hamilton were seeking to acquire new street sweepers to help minimize surface water contamination from storm sewer runoff, while reducing particulate loadings in the air.

Based on this, and supported by Toronto's combined air quality and climate change-related policy, the City initiated the development of a technology performance testing and verification protocol to support the procurement process of new street-sweepers. As a result of Canadian ETV Program performance testing and verification, the City of Toronto purchased 49 "dustless" regenerative air sweepers and the City of Hamilton purchased 16. Other municipalities throughout North America are following this lead.

"The Canadian ETV Program is great for buyers of street sweepers, not only in Canada, but also internationally. The ETV Program provides a mechanism to confidently verify a street sweeper's environmental performance when testing using the City of Toronto's PM₁₀ and PM_{2.5} Street Sweeper Efficiency Test Protocol. The Canadian ETV Program raises the bar for street sweeper environmental standards." (TYMCO, Inc. (<http://www.tymco.com/>))

Engine and vehicle after-market retrofit technologies, while having the potential to make significant reductions in particulate matter (PM) emissions, had been difficult for municipalities to evaluate in their purchasing decisions.



In Ontario, Hamilton, Mississauga and Markham have adopted policies on how to respond to the vendors of various engine and vehicle aftermarket products. In 2005, Hamilton City Council accepted the following recommendation of the Public Works, Infrastructure and Environment Committee:

"That the environmental benefits of any fuel-saving device or fuel additive be certified by ETV Canada ...as a requirement before any offer to the City by prospective vendors of these products is considered." (Source: Public Works, Infrastructure and Environment Committee, Minutes 05-011, City of Hamilton, 2005).

Similarly, in Mississauga, all fleet managers (corporate, transit and fire) have agreed on a consistent response: vendors of aftermarket products are now referred to the purchasing department or to ETV Canada. Toronto Fleet Services also refers vendors to ETV.

"When Global Emissions Systems Inc. was introducing our market leading emission control technologies to the market, we needed a way to stand out from all of the 'green washing' that was out there, (and a means to substantiate our product performance claims. ETV has helped us expand our business. We're now targeting to get ETV on two additional technologies that were developed in our research and development lab." (Global Emissions Systems Inc. (<http://www.gesi.us/>))



Stormwater management technologies need to meet the needs of regulatory agencies and permitting authorities with different requirements and performance criteria for stormwater treatment devices for specific applications and operating conditions.

To assist municipalities, developers and permitting authorities in evaluating treatment technology options, the Canadian ETV Program has established a performance monitoring, testing and verification procedure for oil-grit separators. The Program is now examining options for the establishment of a procedure for testing and verifying other stormwater filtration devices. This initiative builds technology vendor credibility and buyer confidence by providing assurance that technology performance claims are valid, credible and supported by high quality, independent test data and information.



The City of Markham, Ontario recently adopted the procedures for laboratory testing of OGS, and now requires proof that any OGS technologies have, at a minimum, completed application for Canadian ETV verification to be used in any new projects.

Community Biogas Stakeholder Workshop – Final Report Published by GLOBE Performance Solutions

GLOBE Performance Solutions has completed a final report for Environment Canada on the Community Biogas Stakeholder Workshop that took place in Hamilton, Ontario in March 2014.



The outcomes of the workshop provide options for potential R&D funding under the U.S.-Canada Clean Energy Dialogue (CED), as well as future Canadian and U.S. technology performance evaluation and verification efforts, thereby enabling the advancement and deployment of community-based biogas technologies.

Conclusions and recommendations arising from the workshop are presented in relation to the four workshop objectives.

1. Dialogue amongst Canadian and U.S. stakeholders –

Workshop participants identified a number of options to encourage further North American dialogue on community-based biogas technologies. Most importantly, workshop participants suggested linking to existing initiatives underway through various associations, such as efforts to develop and elaborate a roadmap for the development and implementation of community biogas projects and technologies.

2. Technology performance expectations and verification needs –

Recognizing that community biogas represents a flexible source of renewable energy, workshop participants provided valuable input directed towards a better understanding of the needs and expectations of affected stakeholders. It was suggested that this discussion continue considering the benefits of community biogas. It was also noted that biogas represents optimized energy generation and utilization for wastewater facilities and projects.

3. Opportunities and barriers –

Opportunities and barriers to the advancement and deployment of community biogas technologies were discussed during the workshop. Numerous challenges were identified related to: awareness and understanding; research and development; investment and financing; and technology risk and market acceptance. Examples provided were the need for financial incentives and appropriate regulatory frameworks, as well as access to reliable feedstocks and appropriate process equipment.

4. Assessment and performance verification –

With respect to the Canadian Environmental Technology Verification (ETV) Program, it was noted ETV can offer a platform for obtaining quality-assured, verifiable data on biogas technology and/or project performance. Options for possible development of a procedure or protocol to assist in the assessment and performance verification of anaerobic digestion (AD) and/or combined heat and power (CHP) technologies were discussed:

- One option would be to combine both AD and CHP performance evaluation decision-support tools as an integrated package (i.e., an integrated AD-CHP performance evaluation tool, procedure or protocol)
- Another option would be to address the two technology domain areas of AD and CHP separately (considering that existing decision-support tools and stakeholder engagement processes are available).

Arising from this, most workshop participants preferred the second option and emphasized the importance of linking to existing initiatives and utilizing existing decision-support tools. Following from this it was suggested that the ETV process could provide a foundation for an integrated decision-support framework. If developed, such a decision-support framework could be adopted by, and promoted through, the Canadian ETV Program.

Next Steps

The Community Biogas Stakeholder Workshop represented an initial engagement with knowledgeable stakeholders in a process to help guide future activities to advance community biogas technologies. It is expected that the workshop report will be used to generate further interest in community biogas technologies and serve to further clarify technology assessment and performance evaluation requirements.

Environment Canada and GLOBE Performance Solutions (GPS) are interested in additional comments from stakeholders on how to advance community biogas technologies. Accordingly, GPS has established a [stakeholder forum link](#) on its website and is in the process of identifying a discussion moderator.

Moving forward, the effective implementation and deployment of community biogas technologies would benefit from the establishment of a performance verification decision support framework. Next steps will require engagement with industry association representatives in Canada and the U.S., as well as with provincial government representatives.

Streamlining Approvals of New Technologies – New Protocols for Performance Testing and Verification of Drinking Water and Domestic Wastewater Treatment Technologies

[GLOBE Performance Solutions \(GPS\)](#) and the [Bureau de normalisation du Québec \(BNQ\)](#) have entered into an agreement to harmonize procedures for verifying the performance of drinking water and domestic wastewater treatment technologies. This includes the development of two new protocols to provide guidance and a common approach for independently testing and verifying the performance of these technologies under controlled conditions. The independent verification of the performance data will be a valuable tool for regulatory authorities and other affected stakeholders to objectively evaluate treatment technology options.

The [Protocol for Performance Testing of Drinking Water Treatment Technologies](#) was posted on the [Canadian ETV Program](#) website at the beginning of October 2014. In order to provide stakeholders with sufficient opportunity to submit comments and feedback, a 60-day notification period was established, commencing October 2, 2014, after which time the Protocol will be formally recognized as “guidance” under the Canadian ETV Program.

For more information on this recent agreement, be sure to read a feature article by Jim Ferrero, BNQ's Standards Development Coordinator, and John Neate, GPS' President, in the November/December 2014 issue of [Water Canada](#) magazine. The online issue was released in early November 2014.

Stormwater Testing and Evaluation for Products and Practices (STEPP) at WEFTEC 2014

WEFTEC took place in New Orleans this year and it is clear that stormwater is gaining traction within the wider water treatment community. Both the Stormwater Congress and the Stormwater Pavilion were even bigger and better attended than last year.



Greg Williams, Managing Director of [Good Harbour Laboratories \(GHL\)](#) in Mississauga, Ontario and a Member of the GPS Consortium, attended WEFTEC and participated in a special workshop on Stormwater Testing and Evaluation for Products and Practices (STEPP) convened by the Water Environment Federation (WEF). The objective of the workshop was to investigate the prospects for establishing a North American program to evaluate manufactured stormwater treatment devices. The workshop was well-attended by industry and government representatives including members of the Stormwater Equipment Manufacturers Association (SWEMA).



STEPP has already published a white paper that concluded that a national program is feasible and necessary. STEPP has also concluded that public domain technologies (i.e. green infrastructure) also need to be tested.

The US EPA worked on a Stormwater Rule for four years and is now working through WEF and the STEPP initiative. During WEFTEC, EPA announced \$250K in funding to support the STEPP initiative.

STEPP is now in the process of working with the Association of Clean Water Administrators (ACWA) to survey the states to find out what they would like included in a protocol. The Department of Commerce is also involved, as it sees the lack of a standard as a market barrier. The Department has considerable experience in developing standards through the National Institute of Standards and Technology (NIST).

The STEPP workshop reached the following conclusions:

- Build consensus at the lowest level possible
- Get end users involved
- Aim for verification instead of certification
- Broaden the scope to include all perspectives
- Include operations and maintenance.

It is expected that STEPP will achieve some tangible outcomes over the next 1-2 years.

International Standards Organization (ISO) Standard on ETV

Canada is leading the development of an International Standards Organization (ISO) Standard on ETV. Key milestones and anticipated timelines are as follows:



- February 2013 – ISO-ETV standard was approved as a *New Work Item Proposal*
- July 2014 – Completion of Committee Draft
- November 2014 – ISO member countries meet in Korea to follow-up on Committee Draft comments
- July 2015 – First Draft International Standard to be completed
- November 2015 - Final International Standard to be completed
- 2016 – Publication of ISO 14034 to be completed

Spotlight on ETV Clients

Vida Holdings Corp Ltd. – Verification of Cleanalytic™ Technology

October 8, 2014 – GLOBE Performance Solutions is pleased to announce the verification of Cleanalytic™ Technology under the Canadian ETV Program, which was completed by GPS Consortium member [PAMI \(Prairie Agricultural Machinery Institute\)](#) of Saskatoon, SK. PAMI is an ISO 9001:2008-registered and ISO/IEC 17025:2005-accredited applied research, development, and testing organization serving agriculture and industry in Western Canada and beyond. PAMI's diversified engineering expertise has direct application for agriculture, transportation, military, aeronautics, forestry, and mining. Services include: design, development, fabrication and evaluation of vehicles, machinery and components as well as value-added process reviews, pilot plant design, and optimization.

Developed by [Vida Holdings Corp. Ltd.](#) of Mississauga, ON, Cleanalytic™ Technology is an Engine and Vehicle Aftermarket Device that is designed to address a number of inherent catalytic converter shortcomings – cost, catalytic efficiency and backpressure. Cleanalytic™ treated substrates achieve improvement in these three areas by segmenting the ceramic substrate into two or more zones using a patented technology.

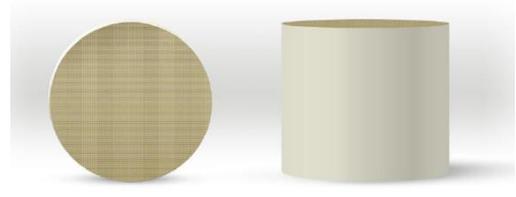


Figure 1 - Substrate without insulation

Cleanalytic™ treated ceramic substrates better manage heat flow within the catalytic converter when compared the current standard of ceramic substrates. The ability of the Cleanalytic™ substrate to retain heat when the engine is at lower RPM (i.e. idle, coasting, stops) results in reduced emissions particularly at lower speeds. [This feature is intended to] provide a significant opportunity for hybrid electric vehicles and gas-fuelled vehicles where the engine shuts down when the vehicle pauses during engine off times.

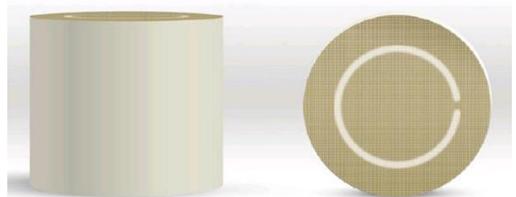


Figure 2 - Substrate with insulation in place

Additionally, the presence of the Cleanalytic™ insulation layer (see Figure 2) results in the redirection of the exhaust gas more evenly throughout the catalytic converter. This redirection of exhaust gases aids in a fundamental improvement in the catalytic conversion process and generally lowers the catalytic converter backpressure, which has potential to enhance fuel efficiency.

Cleanalytic™ equipped catalytic converters [are expected to] help meet or exceed 2016 emission control standards while using less catalyst. In addition, 400 CPSI Cleanalytic™ substrates can replace more expensive 900 CPSI ceramic substrates in some cases.

The Cleanalytic™ insulation layer can be directly installed in existing catalytic converter systems without any significant changes to the fundamental catalytic converter system envelope. Cleanalytic™ treated substrates achieve all of these improvements with no change to the overall catalytic converter dimensions or location making the Cleanalytic™ technology a plug-and-play replacement, allowing for simple incorporation into existing vehicle platforms.

Source: <http://www.vidahc.com/cleanalytic/>



Midwest Industrial Supply, Inc. – Dust Suppression Technology

As a longtime client of the Canadian ETV Program, [Midwest Industrial Supply, Inc.](#) is recognized globally for providing Earth-conscious technology solutions to manage and overcome dust, erosion, ice, or unstable soil conditions. Since 1999 Midwest's Canadian ETV verification of [Soil-Sement®](#) technology has provided the company with a solid basis for gaining market acceptance and building confidence in the technology's performance among private and public organizations throughout North America and around the world.



In light of the clear value realized through ETV verification, Midwest is currently eyeing another one of its innovative dust suppression technologies – EnviroKleen® -- for the Canadian ETV Program.

EnviroKleen is chemically engineered with a synthetic fluid and a polymeric binder system that enables it to quickly penetrate and coat road surface materials, capture critical road materials called fines, and keep them locked into the surface so they cannot escape as dust. As fines are generated by new traffic, they too are captured and interlocked with the surface through both cohesive and adhesive mechanisms. It is this process of Fines Preservation® that maintains road quality and eliminates dust for longer periods of time than other products.

EnviroKleen's BNQ Certification in 2013 and US Environmental Agency's ETV Certification in 2005, proved to be a sure benefit for deployment at the [Hagerman National Wildlife Refuge in Grayson County, Texas](#). Fugitive road dust and erosion had been taking a heavy toll and maintaining Hagerman's natural ecology requires active care of the refuge's roads. To find the best solution, Hagerman participated in a study in conjunction with the United States Geological Society. EnviroKleen was trialed on a road with heavy tourist traffic. When the test was complete EnviroKleen showed a nearly 63% CBR increase in road strength.



<http://www.midwestind.com/>

Nelson Environmental Remediation Ltd.

Building credibility in the market place and helping companies with innovative technologies advance the deployment of their products and services, are just some of the key benefits achieved through verification under Canadian ETV Program.



Another longstanding client of the Canadian ETV Program who has realized the direct benefits of ETV verification is [Nelson Environmental Remediation \(NER\)](#). NER specializes in On-Site Thermal Desorption – an environmentally sound method of eliminating toxicity in contaminated soils – and has been active in thermal remediation work around the world. The company's [Thermal Desorption Process](#) has been verified under the Canadian ETV Program since 2004.

In June 2014 Nelson Environmental Remediation commenced remediation work on the Tesoro pipeline spill near Tioga, North Dakota, in what is being referred to as one of the largest land-based oil spills

in US history. NER is performing all aspects of the project including excavation, thermal desorption remediation and site reclamation. This is NER's fourth project in the United States and the company is proud to be undertaking one of the largest remediation projects ever undertaken in the oil industry.



<http://www.nerglobal.com/>

Industry Events

World Water-Tech North America – Toronto 2014



[Register](#) | [Agenda](#) | [Site Tours](#)

GLOBE Performance Solutions is pleased to invite you to join us at this year's **World Water-Tech North America Summit**, taking place in Toronto on November 12-14. This event will gather together a truly outstanding group of international water industry leaders to present new approaches to innovation in resource recovery, decentralized wastewater treatment and smart network solutions. We also look forward to the chance of welcoming you to the *Technology Showcase* sessions which will be moderated by John Neate, President of GLOBE Performance Solutions.

Download the full agenda [here](#).

[Register today](#) and quote GLOBE2014 to receive a 20% discount.
We look forward to seeing you there!



Symposium sur les eaux usées et Atelier sur l'eau potable 2014 – October 9 & 10

GLOBE Performance Solutions was pleased to participate in another outstanding industry event hosted by [Réseau Environnement](#)

At the recent [Symposium sur les eaux usées et Atelier sur l'eau potable 2014](#) (*Wastewater Symposium and Drinking Water Workshop*) in Québec City, our Technical Advisor, Sophie Paré, was encouraged by the strong interest in stormwater technology related issues, and the focus on best practices in the area of Low Impact Development Stormwater Management.



In addition to offering participants an excellent overview of the latest cutting-edge innovations and technological advancements, the event proved to be a great nexus for Quebec stakeholders in the area of waste water and drinking water.

The Symposium was well attended with nearly 500 participants and over 25 exhibiting organizations, and is one several high-profile environmentally-focused events organized by Réseau Environnement.

