November 17, 2018

Shelley Hyatt
Senior Policy Advisor
Ministry of the Environment and Climate Change
Climate Change and Environmental Policy Division
Air Policy Instruments and Programs Design Branch
77 Wellesley Street West, Ferguson Block, 10th Floor
Toronto, Ontario M7A 2T5

The Ontario Society of Professional Engineers' (OSPE) comments on Ontario's Offset Credits Regulation and Incorporated Protocol (EBR 013-1460)

Ms. Hyatt,

The Ontario Society of Professional Engineers is pleased to offer comments to Ontario's Ministry of the Environment and Climate Change regarding the proposed Ontario Offset Credits Regulation and Incorporated Protocol.

OSPE's comments present recommendations concerning eighteen key elements of these proposals:

1. Definitions
2. Minimum Mitigation
3. Sunset Clause
4. Equivalency Factors
5. Oversight Capacity
6. Landfill Size
7. Oxidation Factor
8. Double-Counting of Initiative Emissions
9. Recording Rate
10. Moisture Content
11. Operational Status
12. Off-Site Reporting
13. Calibrated Range
14. Instrument Troubleshooting
15. Instrument Over-Reporting
16. Field Calibration
17. Leak Test
18. Destruction Efficiency

This response was prepared by OSPE's Environment Task Force with special contributions from Marcus Scrimgeour, P.Eng., John Henkelman, Ray Huff, and OSPE Environment Task Force Chair Yannick Trottier, P.Eng..

DEFINITIONS

1. **OSPE recommends that the terms "sequestration initiative" and "non-sequestration initiative" in the draft regulations be replaced by the terms "removal initiative" and "mitigation initiative", respectively, and that the word "captures" be deleted from the definitions.** The remainder of this document uses OSPE's recommended terminology.

Reasoning: Without these edits, the definition of "sequestration" in the draft regulations does not conform to the common usage of this term in the scientific literature. In climate science, it refers to storage of any greenhouse gas, regardless of whether it was removed from the atmosphere or captured from fossil emissions.[1] OSPE could not determine the intended meaning of the word "capture" as used in the draft regulation.

MINIMUM MITIGATION

2. **OSPE recommends raising the lower limit of eligibility to 5 tonnes of CO2e for any reporting period.**

Reasoning: Draft regulation subsection 5(1) paragraph 5 sets a lower limit of eligibility of just 1 tonne of CO2e for any reporting period. This represents a single credit per year as defined in O.Reg. 144/16 section 10. This is a very low threshold that could plausibly be met by the methane produced by composting a single individual's food waste. The technical and bureaucratic hurdles to establishing an eligible landfill are within the reach of committed hobbyists willing to absorb a net financial cost, so the construction of projects near the regulation's lower limit seems plausible.

Low barriers to entry are economically progressive, maximize coverage, and might encourage a multitude of projects that additionally serve a public education purpose. However, OSPE is doubtful that the benefits of individual hobby projects would be worth the costs of oversight, for either the province or the sponsor. When misstatements are found, reversal of the offset initiative might not be possible as they would likely fall below the minimum limits of section 18. If the intent was to enable a wide proliferation of citizen participation, regulation should be applied at the level of consumer equipment design, rather than at the level of individual sponsor.

A minimum of 5 tonnes per reporting period would largely rule out individual hobby projects while still allowing community projects with more plausible educational reach. This limit is still low enough to pose no threat to the eligibility of small farm anaerobic digesters, which are perhaps the most granular project type to have a significant global mitigation potential.

SUNSET CLAUSE

3. **OSPE recommends placing a sunset clause on each offset protocol for mitigation initiatives, to trigger a review of the effectiveness of offsets versus emissions pricing every ten years or so.**

Reasoning: Offsets credits are a suboptimal policy tool for reducing greenhouse gas emissions. The introduction of offsets creates risks to the stringency of the carbon pricing system by opening up opportunities for fraud and perverse incentives. These risks will grow proportionally

[1] IPCC Assessment Report 5, Working Group I, Annex 3: Glossary.

with the price of emission allowances, and will become increasingly problematic as the emissions cap is constrained towards zero. Mitigation offsets are only useful as targeted measures to temporarily fill gaps that are otherwise difficult to cover with emission pricing policies.

For a discussion of fraud risks, see OSPE's comments on oversight capacity below. For an example of perverse incentives, consider the case in China where a landfill began stacking waste higher specifically to produce more methane and earn more offset credits.[2] When considering higher carbon prices likely to occur in the future, landfills could start competing for organic waste and paying to receive it. This demand would encourage food waste and discourage reuse of organic materials. The purchase of organic waste could be controlled by regulation, but the eventual formation of a black market seems unavoidable as the provincial emission cap is driven towards zero. The best way to stop perverse incentive would be to replace offsets credits by a carbon price on all landfill emissions, either as an expansion of the cap-and-trade system or as a supplementary carbon tax.

Ultimately, Ontario needs a comprehensive GHG emissions pricing policy to cover 100% of Ontario's emissions. The recently implemented cap-and-trade system covers 82% of Ontario's emissions.[3] OSPE recognizes that most of the remaining gap is difficult to cover given the current limits of science, technology, and oversight capacity. There exist appropriate opportunities for offsets to help augment policy coverage. But any offsets for mitigation initiatives should be implemented with the expectation that they will be replaced later by an expansion of cap-and-trade. For example, the landfill gas offset protocol should be replaced by mandatory top-down monitoring and pricing of all landfill gases once the enabling technology becomes readily available.

Draft regulation section 11 defines 10-year crediting periods for removal initiatives and subsection 15(8) imposes a sunset after three crediting periods. This signals a clear time horizon to sponsors, but there is no explicit signal to the government to keep the issue on the regulatory agenda.

Offsets credits for removal initiatives, as opposed to mitigation initiatives, are also susceptible to fraud and perverse incentives. However, their beneficial impact goes beyond what can be achieved with emission pricing alone, even after cap-and-trade achieves 100% coverage. Carbon dioxide removal from the atmosphere is a service to society that deserves to be rewarded and included as negative emissions in greenhouse gas inventories. There is no need for a sunset clause on offset protocols for removal initiatives.

EQUIVALENCY FACTORS

4. OSPE recommends divorcing the CO2 equivalency factors used for offset credit calculation and emission allowances from the UNFCCC GWPs used for emission reporting.

[2] "How Additional is the Clean Development Mechanism?" Dr. Martin Cames et. al, Öko-Institut, Berlin. March, 2016: CLIMA.B.3/SERI2013/0026r

[3] "Introduction to Cap and Trade in Ontario," Environmental Commissioner of Ontario, Appendix A to the ECO's Greenhouse Gas Progress Report, 2016

5. **OSPE recommends basing equivalency factors on IPCC assessment report 5, working group I, chapter 8, table 8.7; or for halocarbons, on chapter 8 supplementary material, table 8.SM.16.**

6. **OSPE recommends using equivalency factors that include the effect of climate feedback.**

Reasoning: Much of the emissions to be addressed by offsets are expected to be gases other than carbon dioxide. This gives new importance to the choice of equivalency factors, particularly that of methane. The draft LFG Protocol references the global warming potential (GWP) of methane from O.Reg. 143/16 schedule 1. This regulation appears to copy the UNFCCC values used to report national inventories of GHGs. However, the UNFCC values are based on the IPCC's obsolete second assessment report published in 1995. These equivalency factors may be useful for comparable reporting, but obsolete values are not a sound basis for mitigation policy. For methane in particular, the 100-year GWP with climate change feedback is now estimated at 34, much higher than the staid regulatory value of 21.

The latest IPCC assessment report now provides a number of different metrics to calculate equivalent emissions. Some have little value, but others could enable policymakers to finely tune mitigation measures to align with the most important concerns. Metrics include GWP and the newer Global Temperature Potential (GTP), on time scales of 20, 50 and 100 years, with and without climate feedback. In the case of methane, Appendix 8.A, table 8.A.1 shows a slight difference between biogenic and fossil methane.

This last distinction between biogenic and fossil methane exists because biogenic methane breaks down to biogenic carbon dioxide, which has no effect on global temperatures. The difference between biogenic and fossil methane is smaller than the uncertainty in either value, and could be ignored without significant consequence. The Landfill Gas Protocol needs both types in equations 6.2 and 6.14.

The inclusion of climate feedback is a new but straightforward improvement in metrics (Source AR5 WGI Section 8.7.1.4 page 714.).

The choice between GWP or GTP and the choice of timescale are very important for methane, and these choices must come down to political value judgements.[4] At opposite extremes the 100-year GTP is 11, while the 20-year GWP is 86. Either extreme would be defensible from a scientific standpoint. Concern for the abrupt reduction of arctic sea-ice might drive the use of 20-year GWP, while concern for 22nd Century droughts might drive the use of 100-year GTP. Different valuation of the welfare of present versus future generations could drive the choice of timescales.

A natural inclination would be to declare that we must address all of the above: hurricanes and droughts, present and future generations. But within a cap-and-trade system, the only way to address all climate concerns simultaneously is to further constrain the cap. The creation of emission offsets for methane encourages methane reductions while necessarily relieving pressure on carbon dioxide reductions. The equivalency factor only changes the relative incentives to reduce these two gases. The unification of different gases under a single emissions cap forces policymakers to define an explicit exchange rate, or discount rate, between different kinds of harm.

[4] IPCC AR5 WG I, Chapter 8, Box 8.4

Methane is a powerful but short-lived greenhouse gas that will have much more impact on those living today than on those living in the next century. The choice of a higher equivalency factor for methane (consistent with a shorter time horizon) would generally mitigate climate impacts on us while aggravating the burden on future generations. On the other hand, a higher equivalency factor could mitigate the risks of abrupt non-linear effects ("tipping points") and provide extra time for adaptation by reducing the rate of change of our environment and containing peak temperature. If the risks of abrupt change were to coalesce, or if human adaptation capacity were overwhelmed, the impact to future generations would be catastrophic. Therefore, the same CO2 equivalency factor may be seen to favour or disfavour future generations depending on assessments of risk, adaptation capacity, and discount rate.

The factors used for offsets and allowances should be the product of a methodical and transparent evaluation, since this is a policy decision that will have differential incidence on the public welfare. The government may consider setting regulatory values that are not directly tethered to published scientific values, so long as these regulatory values are still bounded by and justified in terms of the science. That exercise might well circle back to justifying a number similar to the current value of 21.[5] This decision cannot simply be left to the bureaucratic ossification of obsolete data.

OVERSIGHT CAPACITY

7. **OSPE questions whether the Ontario government has adequate authority and resources in place to ensure oversight of offset projects, especially outside of Ontario?**

Reasoning: Offset credits allow alternative ways of reducing greenhouse gas emissions in a cap-and-trade system. This increases coverage of GHG emissions without improving the overall stringency. Although offset credits provide a new incentive for emissions reductions that were previously outside the cap-and-trade system, their entry into the emission allowance market will dilute the incentive to mitigate emissions that were already capped. If the allowable alternatives are real and additional, then offset credits can help contain the price growth of emission allowances without undermining emission targets. But if the reality and additionality of alternative emission reductions were overestimated, then the stringency of the cap-and-trade program would be undermined.

Past experience with other offset programs have shown that additionality is elusive. For example, an analysis of the Kyoto Protocol's Clean Development Mechanism (CDM) by Öko-Institut found that only 2% of projects had a high likelihood of ensuring that emission reductions are additional and are not over-estimated.[6]

An analogous system of biofuel credits in the USA has found $220M of fraudulent credits sold by fake facilities that did not exist or did not operate.[7] Most of these cases were only uncovered by site visits, not from records submitted to the government. This system lacked a third-party

[5] Note: for example, if it was decided to average the 100-year GTP and 100-year GWP together with equal weight.
[6] "How Additional is the Clean Development Mechanism?" Dr. Martin Cames et. al, Öko-Institut, Berlin. March, 2016: CLIMA.B.3/SERI2013/0026r
[7] Mario Parker, Jennifer A. Dlouhy, and Bryan Gruley. "The Fake Factory that Pumped Out Real Money," Bloomberg Business, July 13, 2016

audit protocol. By contrast, the draft Ontario regulations require thorough third-party verification with mandatory site visits.

Although curious as to how the oversight process will perform, OSPE has no recommendation for improvements at this time. The province is prudent to start with landfill gas, which is perhaps the safest kind of offset credit project. The sale of offsets is the dominant revenue source for these projects, the flow of baseline emissions is easily measured, sponsors have little incentive to interrupt the process, and fraudsters have few opportunities to falsify records convincingly. The same Öko-Institut report that found widespread problems in CDM offsets also found that landfill gas projects have a high likelihood of being additional.[8]

LANDFILL SIZE

8. OSPE questions the eligibility requirements in Protocol sections 4.2.1, 4.2.2, and 4.2.3?

Reasoning: The policy purpose of section 4.2 is not explicit, so OSPE is uncertain how to evaluate its effectiveness. The landfill eligibility requirement in Section 4.1 is sufficient to restrict the Protocol to methane reductions that are additional relative to existing regulations. Section 4.2 does mitigate the risk that revenue from Ontario offsets might discourage the development of regulations in other jurisdictions.

The heat input capacity restriction of 3GJ/hr from methane appears to be derived from a California rule designed to distinguish the lowest heat input capacity that can support a continuous flare. Other methane destruction technologies are not financially viable with such low methane generation rates if offset credits match the current price of emission allowances. The future price of emission allowances remains speculative and contested.

The footnotes in Section 4.2 lacked clarity. The basis for the density and decomposable percent in footnote 2 could not be determined. The term “manufactured products” is not defined in this Protocol and allows ambiguity.

In Section 4.2.2, the distinction between subparagraphs (a)(2) and (a)(3) could not be determined.

Limits on non-methane organic compounds were noticeably absent from Section 4.2.

OXIDATION FACTOR

9. OSPE recommends that the oxidation factor determination in draft LFG Protocol section 7.2.7 be reviewed periodically.

Reasoning: The draft Protocol is consistent with the prevailing consensus on landfill methane oxidation.[9]

---

[8] “How additional is the Clean Development Mechanism?” Dr. Martin Cames et. al, Öko-Institut, Berlin. March, 2016: CLIMA.B.3/SERI2013/0026r

[9] IPCC (2006): “2006 IPCC Guidelines for National Greenhouse Gas Inventories: Prepared by the National Greenhouse Gas Inventories Programme,” Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (eds). IGES, Japan. Available at http://www.ipccnggip.iges.or.jp/public/2006gl/index.html

Recent research suggests that this prevailing consensus may be underestimating oxidation.[10]

This new data has garnered attention, but a revised consensus has not yet formed. An immediate revision of the Protocol's oxidation rate would be premature at this time, but OSPE anticipates that revised guidelines might be forthcoming.

Unlike the methane equivalency factors discussed above, the oxidation factor does *not* have a significantly differential incidence on the public welfare. It is only a matter of accurately directing activity towards the most economically efficient means of emissions reduction. As such, the oxidation factor used in the LFG Protocol is no more important than the oxidation factor used in GHG inventories, and consistency between these is desirable.

DOUBLE-COUNTING OF INITIATIVE EMISSIONS

10. OSPE recommends that initiative emissions be deemed zero for any equipment installed in Ontario before the LFG Protocol came into effect.

11. OSPE recommends modelling of the effect of initiative emission pricing on new LFG equipment installed in Ontario, to check if this policy detail has a complementary effect.

12. OSPE recommends that initiative emissions for any LFG equipment installed outside of Ontario be preserved as written in the draft protocol

Reasoning: “Initiative emissions” in draft LFG Protocol section 6.2 receive a double-penalty if they are subject to cap-and-trade. Conversely, a reduction in initiative emissions would receive a double reward: the project or fuel distributor would buy less cap-and-trade allowances, and could sell more offset credits into the same market. In other words, the carbon price on initiative emissions would be twice that of any other offset or cap-and-trade emissions. This could slightly reduce the attractiveness of LFG offsets and hamper their effect on emissions reductions.

This enhanced carbon pricing on new initiative emissions may be justified on the grounds that it would influence purchase decisions on new equipment that is likely to outlive its financial planning horizon. This could be a signal-boosting policy that may encourage process-switching over evolutionary improvements in efficiency. But if this was the intent, then the protocol is not precisely targeted to that purpose. There are no conditions on the age, longevity, or location of the equipment. Legacy LFG equipment in Ontario would receive an exaggerated reward for early retirement. Landfills outside of Western Climate Initiative (WCI) jurisdictions would face different incentives from landfills in Ontario.

The double penalty on initiative emissions from legacy equipment is counter-productive and should be eliminated. But on new equipment, a double penalty might have a complementary effect. This could be investigated by integrated modelling following criteria laid out in Canada's Ecofiscal Commission's June 2017 report, “Supporting Carbon Pricing.” The double penalty is

[10] Chanton, J., Powelson, D., and Green, R., 2009. “Methane Oxidation in Landfill Covers Soils, Is a 10% Default Value Reasonable? Journal of Environmental Quality,” vol. 38, pp. 654-663; Chanton, J.; Abichou, T.; Langford, C.; Spokas, K.; Hater, G.; Green, R.; Goldsmith, D. & Barlaz, M. (2011): “Observations on the Methane Oxidation Capacity of Landfill Soils,” Waste Management, 31(5), pp. 914–925. doi:10.1016/j.wasman.2010.08.028

only a concern for landfills located in Ontario. Québec, the other WCI jurisdiction in Canada, is excluded by section 5 of the regulation.

RECORDING RATE

13. OSPE recommends clarifying the wording of Section 7.1 paragraph (c)(1).

Reasoning: What constitutes “continuous” is not clear. Plant operators rely on SCADA data recorded in real time for automatic monitoring and process control. Therefore, it is vital the quality of data recorded is accurate, trustworthy and reliable. On-line continuous monitoring instruments have the capability of taking up to thousands of signals every minute (millisecond). Transmitting every signal data back every millisecond burdens the transmission channel and creates noise. Storing and retrieving the millisecond data is complex. In view of the complexity of onsite data collection, management and relying on this data for calculating GHG reduction, what constitutes “continuous” must be clarified in terms of minimum recording frequency for all on-line monitoring instruments.

The words “Initiatives with continuous CH4 analyzers may record at frequencies other than every 15 minutes…” and “all baseline scenario and initiative continuous monitoring devices shall record values every 15 minutes…” have the potential of ambiguity. Are these minimums, maximums, or nominals? Where will the daily averages be used? Variable ‘t’ can be continuously, daily, or weekly according to Table 7.1, so does that mean that equation 6.5 can be calculated daily based on daily averages?

The Ministry may wish to consider limiting acceptable flowmeters to specific types.

MOISTURE CONTENT

14. OSPE recommends requiring the monitoring of moisture content and application of a moisture correction factor when flow and methane content are not measured on the same wet/dry basis.

Reasoning: Protocol section 7.2.4 paragraph (d) attempts to define an acceptable configuration for wet basis CH4 analysis and dry basis flow metering. This appears to imitate a footnote in the Climate Action Reserve protocol. OSPE is not aware of equipment that can conform to this requirement. Continuous CH4 analyzers typically require gas to be dried prior to introduction to the device. A small sample chiller is typically placed between the LFG header sample connection and the analyzer. This arrangement would not be compliant with the language in 7.2.4(d), and will represent a problem for any site looking to use a continuous CH4 analyzer.

OPERATIONAL STATUS

15. OSPE recommends rewording section 7.2.5 paragraph (a) to “… such that <u>measured LFG flow sent to the eligible destruction device</u> is not released …”

Reasoning: LFG will always be released from the landfill as surface emissions and subsurface migration. This should not force the monitoring of operational status, so long as the flow counted towards the offset cannot escape.

OFF-SITE REPORTING

16. OSPE recommends off-site gas recipients to have a separate duty to record and report.

Reasoning: Section 7.2.5 paragraphs (c), (d) and (e) are unusual. The typical approach is to either assume perfect combustion at the off-site facility, or to apply average off-site facility destruction efficiency against methane flow to facility as recorded by the offset sponsor. As written, the Protocol potentially holds the sponsor responsible for noncompliance of a third party. It may be more reasonable for recipients of gas to have separate responsibilities to record and report.

CALIBRATED RANGE

17. OSPE recommends that the term "measurable range" in LFG Protocol section 7.2.6 paragraph (a)(3)(i) be replaced with the term "calibrated range".

Reasoning: Many flowmeters provide unreliable measurements at low flow rates. These can be "measured" but not calibrated.

INSTRUMENT TROUBLESHOOTING

18. OSPE recommends limiting LFG Protocol Section 7.3(c) subparagraphs 1 to 3 to performance requirements, e.g. "must show that these monitoring devices provide a reading […] that is within a ± 5% accuracy threshold."

Reasoning: draft LFG Protocol Section 7.3(c) subparagraphs 1 to 3 are both too prescriptive and inadequate. They appear to disallow common solutions, such as replacing the instrument or temporarily suspending operations during adverse weather conditions. Strict adherence to the simple re-check of subparagraph (c)(2) could also obscure common problems such as an intermittent failure of the instrument. Troubleshooting advice may be included, but only as non-mandatory guidance.

The requirements of this Protocol appear to be a response to the excessive stringency of the Climate Action Reserve (CAR) Protocol's calibration requirements, which require that, if a meter falls outside the 5% threshold under the CAR protocol, the only available next step is calibration by the manufacturer or a certified service provider. The Ontario Protocol's requirements allow "appropriate corrective actions" to be taken before requiring a manufacturer or certified calibration. This greater flexibility is more a more realistic approach to the variety of problems that can occur in the field, but the explicit approval of a simple clean and re-check procedure opens opportunities for abuse.

INSTRUMENT OVER-REPORTING

19. OSPE recommends limiting LFG Protocol section 7.3(d)(2) to "When the inaccuracy of the device indicates a <u>consistent and linear</u> over-reporting of flow rates or CH4 concentration."

20. OSPE recommends specifying in LFG Protocol section 7.3 that if neither subparagraph (1) nor (2) apply, then the data should be deemed missing per section 7.4.

Reasoning: When instrument error exceeds specifications, this is often because of an instrument failure that produces variable error. For example, a flowmeter may become stuck at a high value following a pulse of gas. The Protocol must envision such cases where data is known to be inaccurate but cannot be corrected.

FIELD CALIBRATION

21. OSPE recommends adding a requirement for field calibration of portable CH4 analyzers on the day of use in accordance with manufacturer's instructions.

Reasoning: Together with the existing requirements of LFG Protocol section 7.3 paragraph (e), this is sound practice for this type of equipment.

LEAK TEST

22. OSPE recommends adding requirements to the LFG Protocol for leak tests of components located at the landfill site between the flowmeter and destruction equipment:

- **a. an annual wintertime methane sniffer test of all nonmetallic seals and flexible hoses while under positive pressure,**
- **b. a one-time helium leak test or pressure decay test of all joints except metallic welds, and**
- **c. an ad hoc helium leak test or pressure decay test of any joint that has been disassembled and reassembled.**

Reasoning: A methane leak between the flowmeter and destruction equipment would produce offsets that are not fully real. The test regimen recommended above is good practice to mitigate leaks, comparable to what might be used for an ozone-depleting gas. A number of optical detection techniques are coming onto the market, but these lack the field experience to prove their reliability.

Leaks are more likely to occur at cold temperatures as non-metallic seals harden and couplings contract. The coldest temperatures tend to correlate with negative landfill gauge pressures that inhibit leaks and invalidate sniffer tests. Sniffer tests must be done while the landfill probe gauge pressure is positive for a valid test. Opportunities for a valid test commonly arise on moderate winter afternoons.

A pressure decay test can be performed, for example, by holding 5 psi for at least one hour, corrected for changes in pipe gas temperature. The required precision of the pressure measurement depends on the volume of gas under pressure and the maximum acceptable leak rate.

DESTRUCTION EFFICIENCY

23. OSPE recommends allowing the use of the methane destruction efficiency as determined by an annual source test.

Reasoning: The destruction efficiencies listed in Table A.1 represent a conservative lower bound estimate of the destruction efficiencies for each device type. Source test values would be more representative of actual destruction efficiencies.

Questions & Comments:

For any questions or comments regarding this document, please contact Patrick Sackville, Lead, Policy and Government Relations at (416) 223-9961 ext. 225 or patrick@ospe.on.ca.

About OSPE:

The Ontario Society of Professional Engineers (OSPE) is the voice of the engineering community in Ontario. We represent 80,000 professional engineers and over 250,000 engineering graduates who contribute to the most strategic sectors of Ontario's economy.

OSPE elevates the profile of engineers by advocating with governments, offering career building services, and providing opportunities for ongoing learning, networking, and community building.

Engineers are trained, innovative problem solvers who develop solutions by considering costs and benefits, sustainability, public safety, and the complete lifecycle and integration of projects. Engineers are also on the frontlines of developing, safeguarding, and maximizing Ontario's investments.

OSPE was formed in 2000 after members of Professional Engineers Ontario (PEO) voted to separate regulatory and advocacy functions into two distinct organizations.