

APPENDIX D

STAFF REPORT: INITIAL STATEMENT OF REASONS

**Proposed Amendments to the California Cap on Greenhouse Gas Emissions and
Market-Based Compliance Mechanisms Regulation**

Summary of the Cap-and-Trade Program in Ontario, Canada

State of California

AIR RESOURCES BOARD

Release Date: August 2, 2016

APPENDIX D:

Summary of the Cap-and-Trade Program in Ontario, Canada

This appendix includes a summary of the main components of Ontario's program and compares these components to the California cap-and-trade program. Ontario has passed legislation and several regulations to put a cap-and-trade program in place. At the time their final cap-and-trade design was announced, Ontario indicated some revisions to those regulations as well as additional regulations to support rigorous GHG reporting, cap-and-trade, and a compliance offset program would be forthcoming in the fall of 2016. As a result of the many years of coordination within the Western Climate Initiative (WCI) and the development of the WCI design documents, the California and proposed Ontario programs are expected to be very similar. To support a regional cap-and-trade program, there will be provisions in each jurisdiction's regulations that must be exactly the same and other areas where the intent and approach needs to be consistent. In a few cases, there may not need to be a similar approach, and each jurisdiction has chosen its own approach to implement or develop a specific policy. An example of where the programs are not required to be similar is the process and timing of allowance allocations.

As the current California Cap-and-Trade Program is already linked with Québec, the proposed Ontario program is being assessed jointly by California and Québec to ensure harmonization to support a linked California, Québec, and Ontario cap-and-trade program. In general, the existing California and Québec linked and Ontario programs provide the same level of stringency and environmental integrity while providing equivalent coverage of emissions in all three jurisdictions. For example, even though most electricity generators in Ontario will not bear a direct compliance obligation in the first period, and the compliance obligation rests upstream with fuel distributors, the fuel distributors are not provided allowances. They must acquire allowances either at auction or in the secondary market and the carbon price is reflected in fuel costs borne by the generators. This appendix reflects ARB staff's assessment of the Ontario program, while the actual document reviews and meetings with Ontario staff were conducted jointly by both California and Québec staff.

A. Background

The Government of Ontario has taken several actions to address climate change. The Climate Change Mitigation and Low-carbon Economy Act (Act; Government of Ontario 2016a) sets out greenhouse gas reduction targets for 2020, 2030 and 2050 relative to 1990 emissions. Whereas California's 2020 GHG emissions target is set at the 1990 GHG emissions level, Ontario has a 2020 emissions target set at 15 percent below 1990 GHG emissions levels.

The Act also authorizes and outlines a cap-and-trade program and allows for Ontario to link its cap-and-trade program with corresponding cap-and-trade programs in other jurisdictions. In general, Ontario's cap- and-trade program is consistent with the

recommendations in the Design Recommendations for the WCI Regional Cap-and-Trade Program (Western Climate Initiative 2010a). Due to differences in the rulemaking process between California and Ontario, readers must review the Act, the Ontario Cap and Trade Program Regulation (Government of Ontario 2016b), and the Ontario Quantification, Reporting and Verification of Greenhouse Gas Emissions Regulation (Government of Ontario 2016c) to get a comprehensive view of the requirements of the Ontario cap-and-trade program.

Ontario's cap-and-trade program is anticipated to cover approximately 300 companies, based on previous GHG emissions data reports of industrial reporters and new sectors that were added for the 2016 reporting year (fuel suppliers and distributors, electricity importers). All large emitters with annual emissions equal to or greater than 25,000 tonnes CO₂e, fuel suppliers that supply over 200 liters per year, natural gas distributors (including emissions from natural gas fired electricity generators), other electricity providers and electricity importers will be required to surrender compliance instruments for GHG emissions attributed to them by the reporting regulation, consistent with the Design Recommendations for the WCI Regional Cap-and-Trade Program (Western Climate Initiative 2010a) and section 95812 of the California Cap-and-Trade Regulation. GHG emissions from these sources are covered beginning in 2017. The scope of covered emissions in Ontario's program is similar to California's program, and the emissions thresholds for inclusion are identical with the exception of Ontario's stricter 200 liter per year fuel supplier threshold.

Ontario's program also covers the same seven GHGs listed in AB 32: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃). In terms of total GHG emissions, California's GHG emissions budgets for its Cap-and-Trade Program are larger than Ontario's GHG emissions budgets. The process by which California set its allowance budgets and caps through 2020 is included in Appendix E of the Initial Statement of Reasons for the proposed Cap-and-Trade Regulation, October 2010 (ARB 2010). To help inform their setting of the allowance budgets and cap, Ontario developed a reference case emissions forecast based on:

- The historical emissions from Environment Canada's 2015 National Inventory Report for fuel suppliers and distributors (Environment Canada 2015);
- Large final emitters GHG emissions data collected from the existing reporting regulation (Government of Ontario 2009) that applied to entities that emit more than 25,000 MTCO₂e; and
- The 2013 Long-Term Energy Plan (Ontario Ministry of Energy 2013) for domestic emissions from electricity generation and historical data for electricity imports.

By incorporating actual reported data, California and Ontario have established allowance budgets in a similar manner to ensure they are accurate and designed to avoid over-allocation in each program. Table D-1 provides the annual allowance budgets for California, Québec, and Ontario through 2020.

Table D-1. Annual Allowance Budgets for California, Québec, and Ontario through 2020.

Year	Annual Allowance Budget (million metric tons CO ₂ e)		
	California ¹	Québec ²	Ontario ³
2013	162.8	23.7	
2014	159.7	23.3	
2015 [#]	394.5	63.6	
2016	382.4	61.0	
2017	370.4	58.5	142.3
2018	358.3	56.0	136.4
2019	346.3	53.4	130.6
2020	334.2	50.9	124.7

¹ Section 95841 of the Cap-and-Trade Regulation.

² Government of Québec 2012.

³ Government of Ontario 2016c.

[#]In California, transportation fuel and distributed natural gas are covered beginning in 2015.

B. Market Mechanisms and Policies

In order for California, Québec, and Ontario to implement a joint market program, there are key mechanisms in the programs that must be identical. Staff from all three jurisdictions worked together to identify areas of alignments of these elements of the programs while ensuring that any proposed changes in jurisdiction programs continue to support an efficient and enforceable market program for their respective regulated entities. Many of the market elements are consistent with the Design Recommendations for the WCI Regional Cap-and-Trade Program (Western Climate Initiative 2010a).

One feature that must be identical in all programs is the quarterly auction. This will enable joint auctions in the regional cap-and-trade program. Staff from the jurisdictions worked together to ensure that the proposed revisions to the California Cap-and-Trade Regulation and proposed Ontario program include provisions that are identical in policy and practice. These provisions cover requirements regarding eligibility for auction participation, publication of auction-related information, process for tie breaks in an auction, settlement for an auction, purchase limits by auction participant type, bidding process, dates for auctions, and financial requirements. Staff envisions that a single auction provider will facilitate a joint auction for California, Québec, and Ontario so it is important for all jurisdictions to have identical processes in this area.

The three programs are also proposing to use the same holding limits across all three jurisdictions to ensure that no entities in any program are disadvantaged relative to their counterparts in the other jurisdictions, and that each program has similar design elements in place to prevent the potential for any individual or set of individuals from

engaging in any exertion of market power.

Since a single compliance instrument tracking system will support the regional program, Ontario's program has included requirements identical to those in the California Cap-and-Trade Regulation for moving compliance instruments from one account to another. It will take two individuals to initiate a trade and one individual from the counter-party to confirm a trade to initiate the movement of compliance instruments in the Compliance Instrument Tracking Services System (CITSS). This essentially means that it will take both the selling party and the purchasing party, or counter-party, to complete a transaction in the system. The timing requirements to report the transaction and then complete the transfer in the CITSS are also identical in the programs.

As have California and Québec, Ontario's program also incorporated the concept of an Allowance Price Containment Reserve (Reserve). This feature allows regulated entities to purchase allowances at quarterly sales at set prices. The allowances that comprise each Reserve are pulled from the annual allowance budgets from each jurisdiction; each jurisdiction is proposing that only regulated entities from its own jurisdiction could purchase from its Reserve.

C. Compliance Requirements

In Ontario's program, covered entities will have a compliance obligation for their GHG emissions starting on January 1, 2017. Unlike California's program, but like Québec's program, Ontario's program only requires a compliance obligation surrender after each compliance period instead of both a partial annual compliance obligation surrender and then a triennial compliance obligation surrender after each compliance period (Government of Ontario 2016b, and Cap-and-Trade Regulation sections 95853, 95855, and 95856). This difference does not affect the ability to link the programs; it only requires California entities to provide evidence of periodic acquisition and surrender of compliance instruments during the compliance period.

The length of Ontario's compliance periods does not match California's. Ontario's first compliance period runs four years, from 2017 to the end of 2020. Ontario chose the longer compliance period so that it could begin the period in 2017 yet still matches the end of California's third compliance period. Ontario considered having a single-year compliance period in 2017 together with a three-year compliance period that would have matched California's third compliance period. However, rather than starting with an initial one-year compliance period, Ontario proceeded with a four year compliance period so that capped emitters could benefit from the compliance flexibility offered by a multi-year compliance period.

Ontario intends to implement three-year compliance periods beginning in 2021. ARB staff has concluded a difference between the last compliance period pre-2021 will have no adverse impacts on a linked program. Since the California program is proposing three-year compliance periods post 2020 in the absence of the U.S. EPA's Clean Power Plan (CPP), this aligns with the Ontario intended post-2020 compliance period schedule. If under CPP, California decides to match the (mostly) two-year compliance

periods in U.S. EPA's Clean Power Plan beginning in 2021, California, Québec, and Ontario will have to coordinate on how to align compliance periods, as that is the desired outcome for implementing a linked program.

Every entity that is covered by Ontario's cap-and-trade program is required to surrender compliance instruments equal to its covered GHG emissions. As with California's program, compliance instruments can be either an allowance or an offset credit. As in California's program, a covered entity in Ontario can only meet eight percent of its compliance obligation surrender using offset credits. Ontario intends to issue its own offset credits. Under these proposed amendments, Ontario issued offset credits could be used by California entities to meet their compliance obligation, up to the 8 percent limit. Similar to Québec, Ontario is also proposing to issue early reduction credits based on the WCI methodology up to a limitation of 2 million MT. Final rules on early reduction credits are expected in the fall of 2016.

The compliance obligation will be based on the reported and verified emissions that are required to be reported under Ontario's new GHG reporting regulation (Government of Ontario 2016c). This appendix also includes a description of Ontario's GHG reporting and verification program. In the event a covered entity in Ontario fails to provide a timely compliance obligation surrender, consistent with the Design Recommendations for the WCI Regional Cap-and-Trade Program (Western Climate Initiative 2010a) and the California program, there is a three-to-one allowance obligation for each compliance instrument that was not turned in as required. If capped emitters fail to comply with the 3-to-1 rule, Ontario can issue an order to pay the equivalent monetary amount and to collect that amount as a civil claim. To ensure environmental integrity of the cap, Ontario would retire the original shortfall amount from the pool of allowances set aside for auction.

D. Enforcement

As a regulatory authority, Ontario's Ministry of Environment and Climate Change has legal authority to enforce its Act and regulations. This authority stems in part from Ontario's Climate Change Mitigation and Low-carbon Economy Act (Government of Ontario 2016a), which includes provisions for offences and penalties for violations of the Act and its regulations as well as the ability to apply administrative penalties in accordance with a regulation. Ontario is proposing to put in place by the end of 2016 a regulation which would apply administrative penalties for violations of both the reporting regulations and cap and trade program regulation, including offsets. In addition, the Act sets out significant penalties that may be imposed by a Court for violations of the Act and regulations. Similar to California's program, the counsel representing the Ontario Attorney General make the decision on whether to proceed with charges that have been investigated and laid by Ministry of the Environment and Climate Change investigators. Additional criminal statutes that may be applicable in the context of GHG reporting and cap-and-trade would be Canada's Competition Act (1985) (section 52 applies to false or misleading representations) and Canada's Criminal Code (1985).

In addition, Ontario's Act specifies the range of penalties, for offenses of the Act or

regulations which may be imposed on a per-day basis pursuant to section 51 of Ontario's Climate Change Mitigation and Low-carbon Economy Act (Government of Ontario 2016a). Moreover, and consistent with California's approach to enforcement, the Ministry would commence an enforcement proceeding based on the type of offense, taking into account its specific facts. Ontario also has broad powers of inspection and investigation under the Act and power to order persons (e.g., capped emitters) to take steps to comply with any non-compliance and to prevent any future non-compliance with the requirements of the Act and regulations.

An additional key feature of an enforceable cap-and-trade program is to identify and locate an individual that may be subject to enforcement action. To this end, and based on discussions between ARB staff and Ontario staff, Ontario's cap-and-trade regulation includes provisions for know-your-customer checks and prohibitions from registration for individuals who have been convicted of serious crimes within the last five years. Both California and Ontario will require a process agent or account representative of covered entities to reside in the jurisdiction where the entity is registered. Only individuals that have an account with a financial institution located in Canada and have had their identity verified by the financial institution will be eligible to apply for recognition as an account agent in CITSS through Ontario.

E. Ontario's Offset Program

1. Background

Ontario's cap-and-trade program allows for the use of offset credit (compliance offsets) issued by the government for compliance as provided for by the Act and the regulation. Currently, Ontario's cap-and-trade regulation does not include provisions for offset credits. Ontario will be posting proposed rules for their offsets program on this summer and expect to finalize the rules by the end of 2016. ARB will add these regulations to the rulemaking file pursuant to the provisions of the Administrative Procedure Act and will make these documents available for a 15-day formal comment period once these new regulations are available. Ontario has also been an active participant in the WCI offset discussions. Ontario staff has indicated that its regulation is intended to be consistent with the criteria included in the WCI Offset System Essential Elements Final Recommendations Paper (Western Climate Initiative 2010c).

2. Offset Criteria

Both California and Ontario participated in discussions with other WCI Partner jurisdictions to develop and approve the WCI Offset System Essential Elements Final Recommendations Paper (Western Climate Initiative 2010c). This document incorporates the AB 32 offset criteria and is consistent with how California's program has defined and chosen to implement those criteria. Staff believes Ontario's offset program will be consistent with the WCI recommendations and, therefore, consistent with California's compliance offset program.

Similar to the California and Québec programs, staff anticipates that Ontario's offset program will require that only GHG reductions that are achieved for activities beyond those required by regulation will be eligible for offset issuance, as agreed upon within the WCI Offset System Essential Elements Final Recommendations Paper (Western Climate Initiative 2010c). Furthermore, it is expected Ontario will establish additionality performance standards for projects in the way that California has done for its compliance offset protocols. These performance standards will establish a benchmark above common practice for activity specific to each offset project type.

Staff also anticipates that Ontario's offset program will require GHG reductions to be accurately and conservatively quantified, so that only real and quantifiable reductions are issued compliance offset credits. This concept is identical to how California has established its requirements and will be implemented through the development of well-researched and prescriptively quantified compliance offset protocols.

In discussions with Ontario staff, it is clear that any Ontario-issued offsets must also be permanent. This is consistent with both the California program and with the WCI recommendations.

Ontario also anticipates having provisions to require third-party verification of any GHG reductions or assertions thereof, including requirements for clear monitoring and documentation of information related to the offset project within the revised cap- and-trade regulation and the compliance offset protocols.

All of the characteristics staff anticipates to be included in Ontario's program are further identified within the WCI offset recommendations (Western Climate Initiative 2010c). Once the Ontario offset regulation is made publicly available, staff will provide an update of these findings and how they are addressed in the regulation.

3. Offset Process

The California Cap-and-Trade Regulation has prescriptive requirements for the process that offset project developers must follow to submit specific information to the ARB and the process they must follow to be eligible to receive compliance offset credits (sections 95970 through 95988 of the Cap-and-Trade Regulation). This approach is consistent with the WCI Offset System Process Final Recommendation Paper (Western Climate Initiative 2012). In discussions with Ontario's staff, ARB staff anticipates that their offset process for compliance offset issuance will be consistent with the WCI Offset System Process Final Recommendations paper (Western Climate Initiative 2012). Once the Ontario offset regulation is available later this year, ARB will add those materials to rulemaking record and make them available for public review and comment. Staff will also provide an update of this section and how the Ontario offset regulation will support a similar, rigorous offset issuance process.

4. Enforcement

The same enforcement provisions for offences, penalties, and administrative penalties from Ontario's Climate Change Mitigation and Low-carbon Economy Act (Government of Ontario 2016a) are also intended to apply to violations of offset provisions within Ontario's cap and trade regulation.

5. Compliance Offset Protocols

Based on Ontario's regulatory proposal, offset project developers will have to use Ontario-approved compliance offset protocols to develop offset projects under Ontario's program. It is anticipated that at the time the Ontario offset provisions for its cap-and-trade regulation are drafted and approved, at least three compliance offset protocols will be developed and approved. These protocols are expected to be a mine methane protocol, a small landfill project protocol, and an ozone depleting substances protocol for the destruction of substances with high global warming potentials used for refrigeration and foam.

While there may be some differences related to emission factors and other equation inputs that are region-specific, in general, these protocols are anticipated to be comparable in rigor and effect to the ARB protocols and meet the AB 32 criteria and WCI offset criteria recommendations. Once Ontario has adopted its protocols, Ontario would issue offsets in Canada, except for projects located in Québec. And, Québec would continue to issue offsets in Canada, but no longer for projects located in Ontario.

F. Ontario's Greenhouse Gas Reporting Program

An important requirement for linking two jurisdictions' cap-and-trade programs is a consistent and rigorous basis for the reported emissions data. Initially using California's 2007 Regulation for the Mandatory Reporting of Greenhouse Gas Emissions¹ as a prototype, WCI partners worked together to develop a standardized set of reporting requirements called the Essential Requirements for Mandatory Reporting (ER) (Western Climate Initiative 2009). First published in July 2009, the ER serves as guidance for WCI Partner jurisdiction to develop reporting programs in their respective jurisdictions. WCI Partner jurisdictions which adopt GHG reporting programs based on the ER will have consistent and comparable data quality while recognizing regional differences in regulatory approaches and industrial sector makeup.

In December 2010, WCI published Final Harmonization of Essential Reporting Requirements in Canadian Jurisdictions (Western Climate Initiative 2010b). Ontario's GHG reporting regulation (Government of Ontario 2016c) and Guideline for Quantification, Reporting and Verification of Greenhouse Gas Emissions (Government of Ontario 2016d) is based on this version of the ER, with certain reporting elements customized to Ontario's specific circumstances. Since the publication of the harmonized ER for Canadian jurisdictions, California amended its GHG reporting

¹ <http://www.arb.ca.gov/regact/2007/ghg2007/frofinoal.pdf>.

regulation² to harmonize with the United States Environmental Protection Agency's (U.S.EPA) Final Rule on Mandatory Reporting of Greenhouse Gases (U.S. EPA 2009). As a result, California, Québec, and Ontario used the ER as the foundation for their reporting programs and are harmonized in overall program design, although some differences exist between the jurisdictions due to their unique circumstances. Although some differences exist between the California and Ontario jurisdictions due to their unique circumstances, the GHG reporting methods and results of both reporting programs are expected to be consistent.

1. General Reporting Requirements

A greenhouse gas reporting program consists of several key elements that are essential for collecting high-quality data, ensuring consistency and equity in the compliance process for affected stakeholders, and providing sufficient coverage to support GHG reduction programs.

2. Emissions Threshold for Rule Applicability

Ontario and California each adopted two levels of emissions thresholds: 25,000 MTCO₂e and 10,000 MTCO₂e. For evaluating the 10,000 ton threshold, the Ontario regulation allows exclusion of biomass CO₂ emissions, while California does not. Facilities with 10,000 to 25,000 MTCO₂e of annual emissions are required to report their emissions under both programs, to monitor for leakage of facilities that are close to the cap-and-trade threshold requirements.

For evaluating the 25,000 ton emissions threshold, Ontario includes emissions specified in the Ontario Guideline for Greenhouse Gas Emissions Reporting (Government of Ontario 2015), which ostensibly includes all six Kyoto Protocol gases, plus nitrogen trifluoride (NF₃). However, only those emissions with defined estimation methods in the Ontario Guideline are quantified. California includes CO₂, CH₄, and N₂O emissions from sources explicitly specified in the GHG mandatory reporting regulation.

In evaluating the 25,000 ton threshold, Ontario allows the exclusion of emissions of biomass, geothermal emissions, and certain natural gas supplier emissions, which California does not. Both jurisdictions allow exclusion of emissions from coal storage and certain fugitive HFC emissions when determining the 25,000 ton threshold. For the purposes of cap-and-trade program consistency, these reporting threshold differences are not relevant because there is consistency between emissions that trigger applicability for the cap-and-trade requirements.

At the level of 25,000 MTCO₂e emissions per year or greater, each jurisdiction requires reporting entities to meet rigorous reporting requirements (e.g., annual reporting, specific reporting methods, third party verification, and accuracy requirements). Ontario also includes a reporting threshold of 200 liters for a petroleum product supplier, unlike the California 10,000 ton threshold. This threshold is substantially lower than

² <http://www.arb.ca.gov/regact/2010/ghg2010/mrrfro.pdf>.

California's 10,000 ton threshold. Electric power entities are subject to reporting for all imported electricity, which is the same for both programs.

3. Emissions Sources Covered by the Reporting Regulation

Both Ontario and California require GHG reporting from the largest GHG emitters. Due to regional differences in the industrial sector makeup between California and Ontario, there are some minor differences in the coverage of smaller sources which have a negligible effect on reported emissions and emissions included in the cap-and-trade program.

Ontario's reporting regulation is also consistent and requires combustion, process, fugitive, and vented emissions associated with facilities to be reported. Ontario's regulation also includes reporting of the emissions of high global warming potential (GWP) gases in both its reporting and cap-and-trade regulations. California has adopted separate and direct emission reduction regulations for high-GWP gases, which require the collection of information and the reduction of emissions from these sources; these regulations are the SF₆ Emissions Reductions from Gas Insulated Switchgear Regulation³ the Mobile Air Conditioning regulation,⁴ and the Refrigerant Management Program.⁵ As such, both California and Ontario require the reporting and reduction of emissions from high-GWP sources, although the regulatory programs are not identical.

Currently, Ontario does not cover biomethane in its GHG reporting regulation. In Ontario, the regulated entity retains this information instead of providing it as part of the annual emissions data report. As such, the emissions resulting from the combustion of biomethane are not covered by Ontario's Cap-and-Trade Program. These exempt sources of fuel are required to be reported under the California reporting regulation but are exempt from California's Cap-and-Trade Program.

4. Reporting Entity Boundary

Overall, Ontario and California have similar requirements for determining the boundaries of their reporting entities. Each jurisdiction uses its own specific terms to describe the boundaries based on the common usage of terms in each jurisdiction. The reporting entity's emission sources included under the applicability sections of **both** Ontario's and California's reporting regulations are determined by the boundary of the reporting entity. California has several facility definitions to address the differences between certain industry sectors, such as for oil and gas production facility versus more traditional facilities such as power plants. In the Ontario regulation "facility" is defined to mean all buildings, equipment, structures and stationary items, such as surfaces and storage piles that, are owned or operated by the same person, and are located, on a single site, on two or more adjacent sites that function as a single integrated site, or in the case of a pipeline transportation system, a transmission system or a distribution

³ <http://www.arb.ca.gov/regact/2010/sf6elec/completesf6.pdf>.

⁴ <http://www.arb.ca.gov/regact/2009/hfc09/resubfro.pdf>.

⁵ <http://www.arb.ca.gov/cc/rmp/rmp.htm> and <http://www.arb.ca.gov/regact/2009/qwprmp09/finalfro.pdf>.

system, on two or more sites that are not adjacent. A separate Ontario facility definition is included for a “fractionation facility” (Government of Ontario 2016b). There is overall compatibility and comparability between the Ontario and California reporting entity boundary definitions.

5. Third-Party Verification

Both California and Ontario require that reporting entities use independent third-party verifiers to ensure the data quality in the submitted emission data reports. The verification programs in the two jurisdictions are both based on International Organization for Standardization (ISO) standards, are consistent with WCI Essential Requirements recommendations, and are expected to have consistent outcomes.

For its third-party verification, Ontario relies on verification bodies accredited by outside organizations—the Standards Council of Canada (SCC) and the American National Standards Institute (ANSI)—both of which are members of the International Accreditation Forum which are in compliance with the ISO 17011 program.⁶ Third-party verification is conducted in accordance with ISO 14064-3 (ISO 2006). Ontario also relies on SCC and ANSI for oversight of their verification program.

Currently the Ontario program establishes mandatory site visits for verifiers, and includes requirements for site visits to be conducted at a specific frequency. As Ontario’s reporting program allows for the regulated entities to not have to report certain types of emissions (biomethane) and allows the upstream natural gas suppliers to determine their own emissions value minus what is delivered to regulated end users, the requirement to have a verifier onsite to assess the data collection systems, interview key personnel involved in the data collection process, and review original underlying reporting data is critical to the overall integrity of the reporting program. Staff will continue to coordinate with Ontario to ensure both reporting programs, with verification, result in similarly rigorous data to support a linked cap-and-trade program.

6. Measurement Accuracy Standard

Despite some differences in the measurement accuracy standards between the **jurisdictions**, both approaches are expected to maintain the same degree of confidence in the reported GHG emissions.

California’s reporting regulation specifies a ± 5 percent meter accuracy standard for all measurement devices collecting data for use in emissions calculations, in addition to rigorous calibration and inspection requirements. Ontario’s reporting regulation contains calibration requirements for primary fuel use and product data as well, and specifies an accuracy standard of plus or minus 5 percent for product data measurements, including Complexity Weighted Barrel (CWB) data reported by refineries. In Ontario, it is understood that meeting calibration requirements, as defined in the ER (Western Climate Initiative 2010b), should lead to an acceptable accuracy

⁶ http://www.iso.org/iso/home/store/catalogue_tc/catalogue_detail.htm?csnumber=29332

level. Ontario's program contains language requiring meters to be calibrated prior to first year of reporting according to manufacturer recommendations for product data meters, and/or methods published by Measurement Canada for fuel use meters. This is similar to the requirements for frequency of calibration in California's regulation, only California requires the meters be calibrated once every three years and clearly specifies a 5 percent meter accuracy standard for all meters. Currently the Ontario regulation does not specifically require a ± 5 percent meter accuracy standard for fuel meters. Specifying ± 5 percent meter accuracy for emissions meters will ensure greater accuracy and Ontario will review these requirements prior to 2018. Ontario also indicates that most of their large emitters are certified to ISO quality management standards; therefore, maintaining accurate measurement devices is an incentive for facility operators to keep the ISO certification.

Accounting for emissions from imported electricity is required under both regulations. There are some differences in the way the emissions from imported electricity are calculated specifically for specified sources of electricity. As part of Ontario's ongoing regulatory process they will continue to evaluate specified source reporting requirements to accurately account for emissions from imported electricity to ensure similar rigor for data used in California's program. Moreover, Ontario will include additional details for reporting requirements related to specified power imports.

7. Missing Data Substitution Procedures

Ontario's missing data substitution procedures are based on WCI's harmonized ER for Canadian jurisdictions (Western Climate Initiative 2011). These procedures are consistent with U.S. EPA requirements, which call for substitution with—before and after values for missing high heat value, carbon content, and molecular weight numbers; and using best-available estimates for missing fuel consumption, sorbent quantity, CO₂ concentration, and stack gas flow rate data (U.S. EPA 2009). Because large emitters are certified to the ISO quality management standard, facilities must adhere to periodic audits that assure their practices are complete.

California revised its reporting regulation⁷ to be similar to WCI's and U.S. EPA's procedures, but determined that based on the needs of California's program and circumstances, it would need to be more prescriptive in its missing data substitution requirements and added additional stringency based on the amount of data missing. California's missing data substitution procedures take a tiered approach, such that the more data that are missed, an increasingly more conservative (higher) value must be used for substitution. Ontario uses a similar tiered approach to that used by California, however with slightly different "bins," following those used by Québec, which are considered to adequately align with WCI stringency requirements.

⁷ <http://www.arb.ca.gov/regact/2010/ghg2010/mrrfro.pdf>

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