

**Verification Report – 2017
Greenhouse Gas Assertions and
Environmental Performance
Metrics**

General Motors
Sustainable Workplaces
Global Operations



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VERIFICATION REPORT – 2017 GREENHOUSE GAS ASSERTIONS AND ENVIRONMENTAL PERFORMANCE METRICS

GENERAL MOTORS – SUSTAINABLE WORKPLACES

OCTOBER 19, 2018

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Executive Summary

Stantec Consulting Ltd. (Stantec) was contracted by General Motors Company (GM) to conduct an independent third-party verification of a selection of greenhouse gas (GHG) Assertions and Environmental Performance Metrics for their Global Facilities, including:

- Total Scope 1, 2, and 3 GHG emissions;
- Total energy consumption;
- Total water withdrawal;
- Total waste; and
- Year over year performance.

In this work, GM was responsible for the collection of activity data used in the calculations, data management, and completion of the calculations.

Stantec was responsible for planning and executing the verification to deliver an opinion to a limited level of assurance as to whether the GHG assertions and environmental performance metrics are presented fairly and in accordance with the verification criteria. Stantec is accredited with the American National Standards Institute (ANSI), a member of the International Accreditation Forum (IAF), in accordance with ISO 14065 (Accreditation ID #0805 issued to Stantec Consulting Ltd. for greenhouse gas (GHG) verification and validation).

Based on the processes and procedures completed, there is no evidence that GM's stated GHG Assertions and Environmental Performance Metrics for the 2017 calendar year are not, in all material respects, fairly stated in accordance with the criteria noted herein.

The final sampling plan, results and identified discrepancies are summarized in this report.

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1.0 Introduction

Stantec Consulting Ltd. (Stantec) was contracted by General Motors Company (GM) to conduct an independent third-party verification of a selection of greenhouse gas (GHG) Assertions and Environmental Performance Metrics for their Global Facilities, including:

- Total Scope 1, 2, and 3 GHG emissions;
- Total energy consumption;
- Total water withdrawal;
- Total waste; and
- Year over year performance.

GM global reports on these environmental metrics under the following voluntary programs (the Reporting Programs):

- The Carbon Disclosure Project (CDP); and
- The Global Reporting Initiative (GRI).

The GM Global facilities are located in various regions around the world and operate under the following operational boundaries: GM International Operations (GMIO), GM South America (GMSA), and GM North America (GMNA). In 2017, GM divested of its European operations and these facilities have been appropriately excluded from the reporting boundary.

In this work, GM was responsible for the collection of activity data used in the calculations, data management, and completion of the calculations.

Stantec was responsible for planning and executing the verification to deliver an opinion to a limited level of assurance as to whether the GHG assertions and environmental performance metrics are presented fairly and in accordance with the verification criteria. Stantec is accredited with the American National Standards Institute (ANSI), a member of the International Accreditation Forum (IAF), in accordance with ISO 14065 (Accreditation ID #0805 issued to Stantec Consulting Ltd. for greenhouse gas (GHG) verification and validation).

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2.0 Verification Fundamentals

The verification objectives, criteria, standards, level of assurance, materiality threshold, and period are presented in Table 1.

Table 1 Verification Fundamentals

Parameter	Description
Intended User	The results of the verification will be used by GM for internal and external sustainability reporting, and for reporting to CDP and GRI. The users of the verification report and statement are GM, shareholders and the public.
Verification Objectives	The objective of the verification was to assess whether the GHG Assertions and Environmental Performance Metrics (as presented in Table 2) for GM's 2017 operations are accurately prepared in accordance with appropriate criteria.
Verification Boundaries	The boundaries of the verification include GM owned and operated facilities within General Motors North America (GMNA), General Motors South America (GMSA) and General Motors International Operations (GMIO). A subset of these facilities have been excluded from the GHG Assertion and Environmental Performance Metrics due to unavailability of data, and a list of these excluded facilities is provided in Appendix A.
Reporting Period	The verification was conducted for the period of January 1, 2017 to December 31, 2017.
Verification Criteria	<ul style="list-style-type: none"> • ISO 14064 Greenhouses Gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals, 2006; • World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD), <i>The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard</i> (Revised Edition), March 2004; • WRI/WBCSD, Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard; • WRI/WBCSD, GHG Protocol Scope 2 Guidance: An Amendment to the GHG Corporate Standard; • CDP Guidance for the 2017 reporting year (CDP Guidance); and • GRI Sustainability Reporting Guidelines (2011).
Verification Standards	The verification was conducted in accordance with ISO14064:3, the AA1000 AccountAbility Principles Standard (2008) and Stantec's Standard Operating Procedures developed for accreditation to ISO 14065.
Level of Assurance	Limited
Materiality Threshold	Following best practice, the quantitative materiality threshold has been set at 5%. The materiality will be assessed on the absolute values of discrepancies. The aggregate total of individual discrepancies (understatements and overstatements of emissions reported) is compared against the 5% materiality threshold. Material qualitative discrepancies are at the discretion of the Verification Body.

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2.1 VERIFICATION SCOPE

The GHG Assertions and Environmental Performance Metrics are provided in Table 2.

Table 2 GM Global Facilities – 2017 GHG Assertions and Environmental Performance Metrics

Parameter	Assertion	Metric
Scope 1 & 2 GHG Emissions	6,231,850	tonnes of carbon dioxide equivalent (tCO ₂ e)
Scope 1 Direct	1,659,116	tCO ₂ e
Scope 2 Indirect	4,572,733	tCO ₂ e
Scope 3 GHG Emissions	271,796,259	tCO ₂ e
Category 1 Purchased Goods & Services	46,174,073	tCO ₂ e
Category 2 Capital Goods	4,596,326	tCO ₂ e
Category 3 Fuel & Energy Related Activities	354,560	tCO ₂ e
Category 11 Use of Sold Product	220,671,300	tCO ₂ e
Total Energy Consumption	17,425,068	MWh
Total Water Withdrawal	37,493,216	m ³
Total Waste	2,441,163	US tons
Year over year performance Scope 1 & 2 GHG emissions	11.7% decrease between 2016 and 2017	%
Year over year performance Total Energy Use	4.3% decrease between 2016 and 2017	%
Year over year performance Total Water Use	0.4% decrease between 2016 and 2017	%
GRI 302-1 Total Energy Use	17,425,068	MWh
GRI 303-1 Total Water Use	37,493,216	m ³
GRI 305-1 Total Scope 1 GHG Emissions (Location-Based)	1,659,116	tCO ₂ e
GRI 305-2 Total Scope 2 GHG Emissions	4,572,733	tCO ₂ e
GRI 305-3 Total Scope 3 GHG Emissions	271,796,259	tCO ₂ e
GRI 306-2 Total Waste	2,441,163	US tons

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3.0 Verification Activities

3.1 VERIFICATION PLANNING AND DESKTOP REVIEW

Once Stantec was provided with GM's documentation, a desktop review of the emissions, reporting data, and supporting documentation was conducted. From this review, a preliminary risk assessment was conducted and summarized in the Verification Plan. A detailed Verification Plan and a Sampling Plan were developed based on the outcome of the preliminary risk assessment; the initial Verification Plan was provided to GM on March 6, 2018. The initial Verification Plan included Stantec's preliminary risk assessment and a list of additional documentation required from GM to complete the verification. The initial Verification Plan is provided in Appendix B. The final Sampling Plan is outlined along with the final results in Section 6.0 (Summary of Findings) of this report.

3.2 TELECONFERENCE IN LIEU OF SITE VISIT

Since there was no planned site visit, following the desktop review, Stantec held teleconference calls with GM. The purpose of the calls was to provide an opportunity for Stantec to conduct verification procedures with GM staff that were involved with the collection and compilation of data and quantification of the environmental metrics, as well as to review GM's data collection systems. Stantec also assessed consistency with the program requirements and previous year's Environmental Performance Reports and appropriateness of the methods applied. Gizem Gunal-Akgol led the teleconferences on behalf of Stantec.

3.3 RECORDS REVIEW

The Verification Team reviewed, recalculated, and re-aggregated data where deemed necessary, and reviewed the calculation methodologies for consistency with the program requirements. Stantec reviewed supporting documentation and records for those identified sources considered to be potentially material. The quality management protocol applied to data streams was also reviewed.

3.4 REPORTING AND CLOSE OUT

Upon completion of the tasks described above, Stantec summarized the initial findings and completed an internal peer review and quality management assessment of our work. A Draft Verification Report was prepared to present our findings to GM.

Outstanding discrepancies were addressed by GM where possible prior to finalizing the report.

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4.0 Verification Team: Qualifications, Roles and Responsibilities

4.1 VERIFICATION TEAM

The members of the Verification Team are identified in Table 3.

Table 3 Verification Team

Name	Role	Responsibilities
Gizem Gunal-Akgol, P.Eng.	Lead Verifier	Gizem oversaw the completion of the procedures and deliverables and will issue the verification statements. She led the teleconferences and undertook all project management duties using Stantec's 10-point project management framework.
Nicole Flanagan, M.A.Sc., P.Eng.	Quality Reviewer	Nicole reviewed all deliverables for technical soundness and compliance with Stantec's standard operating procedures and the Verification Criteria.
Daniel Hegg, M.Sc., CEM	Independent Peer Reviewer	Dan reviewed verification documentation to confirm all verification activities were completed and are sufficient for the required level of assurance. He independently concluded on whether the Assertions are materially correct as the independent peer reviewer in accordance with ISO 14064-3 and ISO 14065
Toni Zbieranowski, M.Sc.	Verifier	Toni was identified in the initial Verification Plan as a verifier, but did not complete any verification activities as part of this work.
Catherine MacFarlane, M.A.Sc.	Verifier	Catherine assisted Gizem with the sampling plan execution and drafting of reports.
Orasa Webber, M.Eng.	Verifier	Orasa assisted Gizem with the sampling plan execution and drafting of reports.
Christina Varner, P.Eng.	Verifier	Christina assisted Gizem with the sampling plan execution and drafting of reports.

Each member of the Stantec Verification Team has the required technical knowledge of GHG emissions quantification methodologies and substantial experience in the completion of emissions inventories for any number of pollutants. The Verification Team members have completed the CSA training on ISO 14064-3 GHG Verifications as well as Stantec's internal exam on CDP/GRI requirements. The members also have experience in completing third party reviews and audits in connection with emission inventories. Profiles for the team members are presented in the Verification Plan (Appendix B of this Verification Report).

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5.0 Verification Risk

The verification team assesses the overall verification risk and determines whether the risks are material and have been appropriately disclosed. The verification team assessed risk throughout the verification and adjusted our sampling plan as required to meet the assurance requirements of the verification and maintain an acceptable level of risk.

Overall risk assessment is a process conducted by the Stantec verification team based on an assessment of inherent risk, control risk, and detection risk. In this case, our initial assessment of the risk for this project was **medium**¹, based on our preliminary assessment. After reviewing the documentation and performing recalculations, our assessment of the final risk for this project remained the same. The initial and final risk assessment is provided in the final Verification Plan, appended in Appendix B.

¹ Possible risk ratings are “high”, “medium” and “low”. These are based on inherent, control and detection risks as evaluated by the project team prior to engaging in verification activities.

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6.0 Summary of Findings

A summary of the key findings from this verification are shown in Table 4.

Table 4 Sampling Plan and Results

General Procedures			
Item Number	Criteria	Verification Procedures	Findings
1.	<p>Assess the environmental information system and its controls for potential sources of error, omissions and misrepresentations. (p.9 ISO 14064-3)</p> <p>Consider:</p> <ul style="list-style-type: none"> • Selection and management of data and information; • Processes for collecting, processing, consolidating and reporting data and information; • Systems and processes that ensure the accuracy; • Design and maintenance of the information system; • Systems and processes that support the information system; • Results of previous assessments if available and appropriate. <p>Does the system track all GHG emissions from all source types? Are there several GHG systems in place?</p>	<p>Desktop Assessment</p> <p>NA – to be discussed during the teleconference</p>	<p>Overall Findings</p> <p>Satisfactory – the environmental and other data information systems and their controls are appropriate for their use (GM2100, GMR2 and data management system used for Scope 3 Categories 1 & 2).</p>
		<p>Site Visit Procedures</p> <p>Review and assess GM's information system for GM2100 and GMR2 during teleconference with appropriate staff. Assess:</p> <ol style="list-style-type: none"> 1. How data is collected, processed, and consolidated. 2. Systems and process in place to ensure data is accurately entered. 3. QAQC procedures. 4. Missing data and backfilling procedures. 5. Procedures for updating parameters (emission factors, HHV, references, etc.) 6. Procedures for updating data. 7. Controls and restrictions to the system. <p>Assess whether the data management system used for capital and purchased goods spending for Scope 3 emissions is appropriately vetted.</p>	
2.	<p>Are documents generated to support the GHG information system (e.g., manuals, audit</p>	<p>Desktop Assessment Procedures</p>	<p>Overall Findings</p> <p>Satisfactory – Data retention procedures are sufficient.</p>
		<p>Not applicable (n/a)</p>	

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General Procedures			
Item Number	Criteria	Verification Procedures	Findings
	reports, calibration certificates) created and retained at the facility? How long is this information retained for, and where is it kept?	Site Visit Procedures Discuss data retention procedures.	
3.	Determine whether an appropriate protocol/criteria was used for the GHG assertion.	Desktop Assessment Procedures Determine if GM has followed an appropriate protocol for quantifying GHG emissions (check their inventory management plan, or quantification methodology document). Determine whether a consistent and appropriate set of GWPs were used for GHG assertions.	Overall Findings Satisfactory – Appropriate and consistent protocol and criteria were used to determine the environmental assertions.
		Site Visit Procedures n/a	
4.	Has the Member reported all emissions and data within the established boundary or excluded GHG / activities been sufficiently documented (rationale & transparency)? Has the verification team been provided with evidence to support the assertion that the reporting boundary is complete or appropriately excluded (sources)?	Desktop Assessment Procedures Review GM's established boundary and determine whether all emissions and data within the boundary have been included, and whether excluded GHGs/activities have been sufficiently documented.	Overall Findings Satisfactory – The established boundary includes appropriate sources for: <ul style="list-style-type: none"> • Scope 1 GHG emissions; • Scope 2 GHG emissions; • Scope 3 GHG emissions, with the note that refrigerants from Use of Sold Product is included in emissions but excluded from verification; • Energy use; • Water use; and • Waste, with the transparent exclusion of waste from construction, demolition and remediation activities.
		Site Visit Procedures n/a	
5.	Has the Reporter reported emissions of all six GHGs (CO ₂ , CH ₄ , N ₂ O, SF ₆ , PFCs, HFCs,) reported emissions separately in appropriate units (i.e. tonnes or tons)?	Desktop Assessment Procedures Determine if GM has reported emissions of all six GHGs (review calculation spreadsheet).	Overall Findings Satisfactory – CO ₂ , CH ₄ , N ₂ O, SF ₆ , PFCs and HFCs have been included in the emissions calculations in Scopes 1, 2 & 3 categories as applicable.
		Site Visit Procedures n/a	

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General Procedures			
Item Number	Criteria	Verification Procedures	Findings
6.	Has the Reporter broken down its Scope 1 and Scope 2 emissions by facility (at a minimum), and have all Scope 1 emissions been broken down by source type?	Desktop Assessment Procedures	Overall Findings
		Review the calculation spreadsheets to determine whether emissions have been broken down by scope and source type.	Satisfactory – Scopes 1 and 2 emissions are calculated at the appropriate level of detail.
		Site Visit Procedures	
		n/a	
7.	Have any mergers, acquisitions, or divestitures occurred during the current emissions year? Further, has the entity insourced (acquired) or outsourced (contracted out) any facilities? Does the Reporter have a base year emissions recalculation policy that articulates the basis and context for base year recalculation? Has the Reporter reviewed the policy based on changes.	Desktop Assessment Procedures	Overall Findings
		Review the provided documentation and search online to determine if any mergers, acquisitions, or divestitures occurred in 2017.	Satisfactory – GM has recalculated its baseline and subsequent years for GHG emissions Scopes 1 & 2, energy and water; and for reporting its 2017 metrics for all items above as well as for GHG emissions Scope 3 and waste to exclude its European operations which were divested in 2017.
		Site Visit Procedures	
		n/a	
8.	For Reporter's using the equity share approach, does the emission report include all processes and facilities for which the Reporter holds an equity share?	Desktop Assessment Procedures	Overall Findings
		n/a	n/a – GM does not use equity share approach.
		Site Visit Procedures	
		Confirm the approach used for the verification – operational control or financial control?	
9.	For Reporter's using the operational control approach, does the emission report include all processes and facilities under the operational control of the Reporter?	Desktop Assessment Procedures	Overall Findings
		n/a	Satisfactory – GM bases its environmental reporting on operational control parameters, and excludes facilities accordingly. A list of excluded facilities is provided in Appendix A for transparency.
		Site Visit Procedures	
		Discuss with GM how facilities are included or excluded from reporting. How does GM keep this list up to date and how are the impact of excluding these emissions assessed?	
10.	If the Entity has leased assets have emissions been correctly included or excluded from the boundary?	Desktop Assessment Procedures	Overall Findings
		n/a	Satisfactory – leased assets have been appropriately included in the boundary.
		Site Visit Procedures	

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General Procedures			
Item Number	Criteria	Verification Procedures	Findings
	Finance or capital lease = report emissions Operating lease = only if operational control boundary is chosen.	How has GM dealt with leased properties? Does GM have a policy with regard to how environmental metrics from leased properties are included or excluded from the reporting boundary?	
Scope 1: Direct Emissions			
Item Number	Criteria	Verification Procedures	Findings
11.	<p>With respect to emissions from direct sources, has the member appropriately calculated direct emissions?</p> <ul style="list-style-type: none"> Is there sufficient and appropriate information to support the justification for the use of the methodology? (<i>i.e.</i>, has the reporter met the requirements to use the methodology?) Does the methodology deployed result in the most conservative GHG assertion? Assess how the member calculated direct emissions and assess if the method applied is appropriate. Have the calculations been performed correctly (<i>i.e.</i>, recalculate the emissions and compare)? 	<p>Desktop Assessment Procedures</p> <p>Identify from provided spreadsheets how the emissions are being calculated and determine if the methodology is reasonable.</p> <p>Recalculate natural gas combustion emissions for all facilities with natural gas consumption reported. Emissions from natural gas make up 95% of the total Scope 1 emissions.</p> <p>Recalculate coke combustion emissions for all facilities with coke consumption reported. Emissions from coke make up 4% of the total Scope 1 emissions.</p> <p>Check that emissions from sources that are less than 0.5% of the total Scope 1 emissions are reasonable (oil, diesel, LPG, limestone, landfill gas).</p>	<p>Overall Findings</p> <p>Satisfactory - The methodology was identified and it is reasonable.</p> <p>Satisfactory – total Scope 1 emissions are accurately aggregated and reported.</p> <p>Satisfactory - The natural gas and coke emissions were successfully recalculated.</p> <p>Satisfactory – The emissions from oil, diesel, LPG and limestone are calculated correctly and are reasonable.</p> <p>Resolved Immaterial Quantitative Discrepancy of 44 tCO₂e underreported (approximately 0% of Scope 1 & 2 emissions). Non-biogenic emissions from landfill gas combustion were not included in the total Scope 1 emissions. An updated version of the calculations included accurately quantified emissions from this source and therefore this item is resolved.</p>
		<p>Site Visit Procedures</p> <p>n/a</p>	
		<p>Desktop Assessment Procedures</p> <p>Trace natural gas invoices (3 months per year) for the following facilities for comparison to the total reported quantity.</p>	<p>Overall Findings</p> <p>Resolved Immaterial quantitative discrepancy of 0.4% of Scope 1 & 2 emissions. Emissions from natural gas</p>
12.	Are inputs into the Scope 1 – Direct Emissions calculations supported with sufficient and	<p>Desktop Assessment Procedures</p> <p>Trace natural gas invoices (3 months per year) for the following facilities for comparison to the total reported quantity.</p>	<p>Overall Findings</p> <p>Resolved Immaterial quantitative discrepancy of 0.4% of Scope 1 & 2 emissions. Emissions from natural gas</p>

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Scope 1: Direct Emissions			
Item Number	Criteria	Verification Procedures	Findings
	<p>appropriate evidence (<i>i.e.</i>, sufficient and adequate documentation)?</p> <p>Examples of things to check:</p> <ul style="list-style-type: none"> Invoiced/Metered fuel consumption volumes – are spreadsheet data supported by on-site data? Are the emission factors and methodology used in the GHG assertion accurate (<i>i.e.</i>, up-to-date)? Any other activity data used is supported by the Entity's system; 	<p>These facilities collectively make up approximately 50% of natural gas emissions.</p> <p>Confirm that the invoices sampled in above are within 2017.</p> <p>Review 3 months of scale and calibration data for the coke consumer against the total reported quantity.</p> <p>Assess whether the natural gas and coke HHVs are reasonable.</p> <p>Assess whether the emission factors are reasonable for natural gas and coke.</p> <p>Assess whether quantification and aggregation methodologies are consistent with previous periods.</p>	<p>combustion are supported by invoices but for immaterial differences in volumes at one facility. GM updated the quantities at the facility to reflect the correct values and this discrepancy is now resolved.</p> <p>Satisfactory – direct emissions were calculated using 2017 data.</p> <p>Satisfactory - emissions from coke combustion are supported by appropriately calibrated equipment.</p> <p>Satisfactory – HHVs and EFs for natural gas and coke are appropriate for their regions.</p> <p>Satisfactory – Quantification and aggregation methodologies are consistent with the previous period.</p>
		Site Visit Procedures	
		n/a	
Scope 2: Indirect Emissions			
Item Number	Criteria	Verification Procedures	Findings
13.	<p>With respect to emissions from indirect sources, has the member appropriately calculated indirect emissions?</p> <ul style="list-style-type: none"> Is there sufficient and appropriate information to support the justification for the use of the methodology? (<i>i.e.</i>, has the 	<p>Desktop Assessment Procedures</p> <p>Identify from provided spreadsheets how the emissions are being calculated and determine if the methodology is reasonable.</p> <p>Recalculate electricity consumption emissions for all facilities with electricity consumption reported. Emissions from electricity make up 99.8% of total Scope 2 emissions.</p>	<p>Overall Findings</p> <p>Satisfactory - The methodology was identified and it is reasonable.</p> <p>Satisfactory – total Scope 2 emissions are accurately aggregated and reported.</p>

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Scope 2: Indirect Emissions			
Item Number	Criteria	Verification Procedures	Findings
	<p>reporter met the requirements to use the methodology?)</p> <ul style="list-style-type: none"> Does the methodology deployed result in the most conservative GHG assertion? Assess how the member calculated indirect emissions and assess if the method applied is appropriate. Have the calculations been performed correctly (<i>i.e.</i>, recalculate the emissions and compare)? 	<p>Check that emissions from sources that are less than 0.5% of the total Scope 2 emissions are reasonable (steam, delivered heat).</p> <p>Site Visit Procedures</p> <p>n/a</p>	<p>Resolved Immaterial quantitative discrepancy of 752 tCO_{2e} over-reported (approximately 0.007% of Scope 1 & 2 emissions). The electricity emissions were successfully recalculated except for five facilities. GM updated the emissions calculations from electricity and the emissions from these five facilities are calculated correctly therefore this item is resolved.</p> <p>Satisfactory – The emissions from delivered heat and purchased steam are calculated correctly and are reasonable.</p>
14.	<p>Are inputs into the Scope 2 – Indirect Emissions calculations supported with sufficient and appropriate evidence (<i>i.e.</i>, sufficient and adequate documentation)? Example things to check:</p> <ul style="list-style-type: none"> Invoiced/Metered consumption – are spreadsheet data supported by on-site data? Are the emission factors and methodology used in the GHG assertion accurate (<i>i.e.</i>, up-to-date)? Any other activity data used is supported by the Entity’s system; Does the member calculate and report emissions from electricity use with the location-based methods? 	<p>Desktop Assessment Procedures</p> <p>Trace electricity invoices (3 months) for the following facilities and months for comparison to the total reported quantity. These facilities collectively make up approximately 50% of electricity emissions.:</p> <p>Confirm that the invoices sampled are within 2017.</p> <p>Identify the electricity emission factors used and determine if they are consistent for facilities within the same GM region.</p> <p>Assess whether quantification and aggregation methodologies are consistent with previous periods.</p> <p>Site Visit Procedures</p> <p>n/a</p>	<p>Overall Findings</p> <p>Satisfactory – indirect emissions are supported by invoiced quantities.</p> <p>Satisfactory – indirect emissions were calculated using 2017 data.</p> <p>Resolved Material Quantitative Discrepancy of 242,627 tCO_{2e} in the first three quarters of 2017, which is approximately 5% of total Scope 1 & 2 emissions – EFs used for electricity in GMNA were out of date. The EFs were updated to reflect the most recent version of eGrid and therefore this item is resolved.</p> <p>Resolved Immaterial Qualitative Discrepancy due to insufficient record maintenance on emission factors. Electricity emission factors for GMSA and GMIO are appropriate for their regions, however, documentation and retention procedures on emission factors were found to be insufficient for these regions. Updated EF lists were provided for these regions along with documentation supporting the EFs and therefore this item is now resolved.</p>

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Scope 2: Indirect Emissions			
Item Number	Criteria	Verification Procedures	Findings
			Satisfactory – Quantification and aggregation methodologies are consistent with the previous period.

Scope 3 Emissions			
Item Number	Criteria	Verification Procedures	Findings
15.	<p>With respect to emissions from Scope 3 sources, has the member appropriately calculated indirect emissions?</p> <p>The entity reports in these categories:</p> <ul style="list-style-type: none"> Category 1 – Purchase and Use of Goods and Services Category 2 – Capital Goods Category 3 – Fuel and Energy-Related Emissions Category 11 – Use of Sold Products (Mobile Fuel Combustion) <ul style="list-style-type: none"> Is there sufficient and appropriate information to support the justification for the use of the methodology? (<i>i.e.</i>, has the reporter met the requirements to use the methodology?) Does the methodology deployed result in the most conservative GHG assertion? Assess how the member calculated Scope 3 emissions and assess if the method applied is appropriate. 	<p>Desktop Assessment Procedures</p> <p>Identify from provided spreadsheets how the emissions are being calculated and determine if the methodology is reasonable for Category 1, 2 and 11 emissions. Rely on procedures in General, Scope 1 and Scope 2 tables to assess completeness, cut-off and consistency for Category 3 emissions.</p> <p>Recalculate Category 1 & 2 emissions for all facilities.</p> <p>Recalculate Category 3 emissions for all facilities.</p> <p>Recalculate Category 11 emissions for all facilities. Emissions from Category 11 make up more than 80% of the total Scope 3 emissions.</p> <p>Site Visit Procedures</p> <p>n/a</p>	<p>Overall Findings</p> <p>Satisfactory - The methodologies used for Categories 1, 2, 3 and 11 were identified and are reasonable.</p> <p>Satisfactory – The emissions calculation for Categories 1, 2, 3 and 11 were carried out correctly.</p> <p>Satisfactory – The emissions from Categories 1, 2, 3 and 11 are aggregated and reported correctly.</p>

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Scope 3 Emissions			
Item Number	Criteria	Verification Procedures	Findings
	<ul style="list-style-type: none"> Have the calculations been performed correctly (<i>i.e.</i>, recalculate the emissions and compare)? 		
16.	<p>Are inputs into the Scope 3 Emissions calculations supported with sufficient and appropriate evidence (<i>i.e.</i>, sufficient and adequate documentation)?</p> <p>Example things to check:</p> <ul style="list-style-type: none"> Invoiced/Metered consumption – are spreadsheet data supported by on-site data? Are the emission factors and methodology used in the GHG assertion accurate (<i>i.e.</i>, up-to-date)? Any other activity data used is supported by the Entity’s system; Is the member using life cycle emission factors to calculate emissions (except for Category 3)? Is the member using 3rd party quantification tool? Assess if it is reliable. Has the tool been used appropriately, and is data entry accurate? 	<p>Desktop Assessment Procedures</p> <p>Confirm that the inputs to Category 1 & 2 come from an appropriate source (\$ value of goods, services and capital goods).</p> <p>Rely on procedures in General, Scope 1 and Scope 2 tables to assess accuracy of inputs to Category 3 emissions.</p> <p>Confirm that the inputs to Category 11 come from an appropriate source (total vehicles, vehicle lifetime, vehicle km). Does the vehicle lifetime represent an appropriate lifecycle for the calculations?</p> <p>Vouch the 3rd party quantification tool used for the calculation of Category 1 & 2 emissions (USEEIO v1). Are appropriate life-cycle EFs used?</p> <p>Vouch the EFs used for the calculation of Category 11 and Category 3 emissions.</p> <p>Assess whether quantification and aggregation methodologies are consistent with previous periods.</p> <p>Confirm that the data is within 2017.</p> <p>Site Visit Procedures</p> <p>n/a</p>	<p>Overall Findings</p> <p>Satisfactory – the data inputs for the calculation of Category 1, 2, 3 and 11 emissions under Scope 3 are from an appropriate source.</p> <p>Satisfactory – the third-party model used to calculate Category 1 & 2 emissions was found to be acceptable. The exclusion of negligible quantities in the model results in an immaterial quantitative discrepancy of not more than 0.004% (under-reported) of the total Scope 3 emissions.</p> <p>Satisfactory – emission factors used in Category 3 and Category 11 emissions are appropriate for their use.</p> <p>Satisfactory – Quantification and aggregation methodologies are consistent with the previous period for Categories 3 and 11.</p> <p>Immaterial Qualitative Discrepancy – due to lack of consistency in methodology used to calculate Category 1 and Category 2 emissions.</p> <p>Satisfactory – data from 2017 is used for the calculation of Scope 3 emissions.</p>

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Energy Use			
Item Number	Criteria	Verification Procedures	Findings
17.	With respect to energy use, has the member reported appropriately? <ul style="list-style-type: none"> Is there sufficient and appropriate information to support the justification for the use of the methodology? (<i>i.e.</i>, has the reporter met the requirements to use the methodology?) Assess how the member calculated energy use and assess if the method applied is appropriate. Have the calculations been performed correctly (<i>i.e.</i>, recalculate the usage and compare)? 	Desktop Assessment Procedures	Overall Findings
		Rely on procedures in General, Scope 1 and Scope 2 tables to assess completeness, cut-off and consistency.	Satisfactory - The methodology was identified and it is reasonable. Satisfactory – total Energy Use is accurately aggregated and reported.
		Reaggregate annual energy use.	
		Site Visit Procedures	
n/a			
18.	Are inputs into the Energy Use calculations supported with sufficient and appropriate evidence (<i>i.e.</i> , sufficient and adequate documentation)? Examples of things to check: <ul style="list-style-type: none"> Invoiced/Metered fuel consumption volumes – are spreadsheet data supported by on-site data? Any other activity data used is supported by the Entity’s system 	Desktop Assessment Procedures	Overall Findings
		Rely on procedures in General, Scope 1 and Scope 2 tables to assess accuracy.	Resolved Immaterial quantitative discrepancy of 1.3% of total Energy Use. Energy use is supported by invoices but for immaterial differences in usage at one facility. GM updated the quantities at the facility to reflect the correct values and this discrepancy is now resolved. Satisfactory – energy use from 2017 is used for the aggregation. Satisfactory – HHVs for natural gas and coke are appropriate for their regions. Satisfactory – Quantification and aggregation methodologies are consistent with the previous period.
		Site Visit Procedures	
		n/a	

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Water Use			
Item Number	Criteria	Verification Procedures	Findings
19.	<p>With respect to water use, has the member reported appropriately?</p> <ul style="list-style-type: none"> Is there sufficient and appropriate information to support the justification for the use of the methodology? (<i>i.e.</i>, has the reporter met the requirements to use the methodology?) Assess how the member calculated water use and assess if the method applied is appropriate. Have the calculations been performed correctly (<i>i.e.</i>, recalculate the usage and compare)? 	Desktop Assessment Procedures	Overall Findings
		Identify from provided spreadsheets how the water use is being aggregated and determine if the methodology is reasonable.	<p>Satisfactory - The methodology was identified and it is reasonable.</p> <p>Satisfactory – total Water Use is accurately aggregated and reported.</p>
		Reaggregate water consumption for all facilities.	
		Site Visit Procedures	
n/a			
20.	<p>Are inputs into the Water Use calculations supported with sufficient and appropriate evidence (<i>i.e.</i>, sufficient and adequate documentation)?</p> <p>Examples of things to check:</p> <ul style="list-style-type: none"> Invoiced/Metered water consumption volumes – are spreadsheet data supported by on-site data? Any other activity data used is supported by the Entity’s system; 	Desktop Assessment Procedures	Overall Findings
		Trace water invoices (3 months) for the following facilities and months for comparison to the total reported quantity. These facilities collectively make up approximately 50% of total water use:	<p>Satisfactory – water usage is supported by invoiced or metered data.</p> <p>Satisfactory – water use from 2017 is used for the aggregation.</p> <p>Satisfactory – Quantification and aggregation methodologies are consistent with the previous period.</p>
		Confirm that the invoices sampled are within 2017.	
		Assess whether quantification and aggregation methodologies are consistent with previous periods.	
Site Visit Procedures			
n/a			

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Waste			
Item Number	Criteria	Verification Procedures	Findings
21.	With respect to waste, has the member reported appropriately? <ul style="list-style-type: none"> Is there sufficient and appropriate information to support the justification for the use of the methodology? (<i>i.e.</i>, has the reporter met the requirements to use the methodology?) Assess how the member calculated waste and assess if the method applied is appropriate. Have the calculations been performed correctly (<i>i.e.</i>, recalculate the waste quantities and compare)? 	Desktop Assessment Procedures Identify from provided spreadsheets how the waste is being aggregated and determine if the methodology is reasonable. Reaggregate waste for all facilities.	Overall Findings Satisfactory - The methodology was identified and it is reasonable. Satisfactory – total waste produced is accurately aggregated and reported.
		Site Visit Procedures n/a	
22.	Are inputs into the waste calculations supported with sufficient and appropriate evidence (<i>i.e.</i> , sufficient and adequate documentation)? Examples of things to check: <ul style="list-style-type: none"> Bills of lading, shipping records etc, – are spreadsheet data supported by on-site data? Any other activity data used is supported by the Entity’s system; 	Desktop Assessment Procedures Trace waste data (1 month) for the following facilities for comparison to the total reported quantity. These facilities collectively make up approximately 50% of total waste: Confirm that the waste data sampled are within 2017. Assess whether quantification and aggregation methodologies are consistent with previous periods.	Overall Findings Satisfactory with an Immaterial Quantitative Discrepancy of 0.003% – the total facility waste was not supported by onsite facility records. Immaterial Qualitative Discrepancy – data entry procedures for waste at the facilities are found to not be robust enough to support the data in GMR2. This has an immaterial effect on the waste assertion since the projected error for all facilities in 2017 is not expected to exceed 0.08%. Satisfactory – waste from 2017 is used for the aggregation.
		Site Visit Procedures n/a	

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Waste			
Item Number	Criteria	Verification Procedures	Findings
			Satisfactory – Quantification and aggregation methodologies are consistent with the previous period.

GRI 305 Emissions			
Item Number	Criteria	Verification Procedures	Findings
23.	The reporting organization shall report the following information: a. Gross direct (Scope 1) GHG emissions in metric tons of CO ₂ equivalent.	Desktop Assessment Procedures	Overall Findings Satisfactory – Scope 1 GHG emissions are accurate and complete for 2017.
		Rely on procedures in General, Scope 1 tables to assess accuracy, completeness, cut-off and consistency.	
		Site Visit Procedures	
		n/a	
24.	The reporting organization shall report the following information: a. Gross location-based energy indirect (Scope 2) GHG emissions in metric tons of CO ₂ equivalent. b. If applicable, gross market-based energy indirect (Scope 2) GHG emissions in metric tons of CO ₂ equivalent.	Desktop Assessment Procedures	Overall Findings Satisfactory – Scope 2 GHG emissions are accurate and complete for 2017.
		Rely on procedures in General, Scope 2 tables to assess accuracy, completeness, cut-off and consistency.	
		Site Visit Procedures	
		n/a	
25.	The reporting organization shall report the following information: a. Gross other indirect (Scope 3) GHG emissions in metric tons of CO ₂ equivalent.	Desktop Assessment Procedures	Overall Findings Satisfactory with an Immaterial Quantitative Discrepancy – Scope 3 GHG emissions are accurate and complete for 2017 except for the exclusion of negligible quantities in Category 1 Purchase and Use of Goods and Services & Category 2 Capital Goods emissions. This results in an immaterial quantitative discrepancy of not more than 0.004% under-reported of the total Scope 3 emissions.
		Rely on procedures in General, Scope 3 tables to assess accuracy, completeness, cut-off and consistency.	
		Site Visit Procedures	
		n/a	

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GRI 305 Emissions			
Item Number	Criteria	Verification Procedures	Findings
			Immaterial Qualitative Discrepancy – due to lack of consistency in methodology used to calculate Category 1 and Category 2 emissions.

GRI 302 Energy			
Item Number	Criteria	Verification Procedures	Findings
26.	The reporting organization shall report the following: a. Total energy consumption within the organization, in joules or multiples.	Desktop Assessment Procedures	Overall Findings Satisfactory – Total energy consumption is accurate and complete for 2017.
		Rely on procedures in General, Energy Use tables to assess accuracy, completeness, cut-off and consistency.	
		Site Visit Procedures	
		n/a	

GRI 303 Water			
Item Number	Criteria	Verification Procedures	Findings
27.	The reporting organization shall report the following information: a. Total volume of water withdrawn, with a breakdown by the following sources: i. Surface water, including water from wetlands, rivers, lakes, and oceans; ii. Ground water; iii. Rainwater collected directly and stored by the organization;	Desktop Assessment Procedures	Overall Findings Satisfactory – Quantity of water used is accurate and complete for 2017.
		Rely on procedures in General, Water Use tables to assess accuracy, completeness, cut-off and consistency.	
		Site Visit Procedures	
		n/a	

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GRI 303 Water			
Item Number	Criteria	Verification Procedures	Findings
	iv. Waste water from another organization; v. Municipal water supplies or other public or private water utilities.		

GRI 306 Waste			
Item Number	Criteria	Verification Procedures	Findings
28.	The reporting organization shall report the following information: a. Total weight of non-hazardous waste, with a breakdown by the following disposal methods where applicable: i. Reuse ii. Recycling iii. Composting iv. Recovery, including energy recovery v. Incineration (mass burn) vi. Deep well injection vii. Landfill viii. On-site storage ix. Other (to be specified by the organization)	Desktop Assessment Procedures	Overall Findings
		Rely on procedures in General, Waste tables to assess accuracy, completeness, cut-off and consistency.	Satisfactory with an Immaterial Quantitative Discrepancy of 0.003% – the total facility waste was not supported by onsite facility records. The reported quantity is aggregated correctly and complete for 2017. Immaterial Qualitative Discrepancy – data entry procedures for waste at the facilities are found to not be robust enough to support the data in GMR2. This has an immaterial effect on the waste assertion since the projected error for all facilities in 2017 is not expected to exceed 0.08%.
		Site Visit Procedures	
		n/a	

Year Over Year Performance			
Item Number	Criteria	Verification Procedures	Findings
29.	Global Energy – Year over Year Performance	Desktop Assessment Procedures	Overall Findings

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Year Over Year Performance			
Item Number	Criteria	Verification Procedures	Findings
	Is the statement accurate and transparent? Include check of previous year value for consistency for boundary.	Assess statement on energy use re: 2017 versus 2016. Check that boundaries are consistent between 2016 and 2017. Site Visit Procedures n/a	Satisfactory – the year over year performance value for total energy use is accurate. Satisfactory – the boundaries used for comparison to the 2016 reporting year is consistent with the boundaries for the 2017 reporting year.
30.	Water Use – Year over Year Performance Is the statement accurate and transparent? Include check of previous year value for consistency for boundary.	Desktop Assessment Procedures Assess statement on energy use re: 2017 versus 2016. Check that boundaries are consistent between 2016 and 2017. Site Visit Procedures n/a	Overall Findings Satisfactory – the year over year performance value for total water use is accurate. Satisfactory – the boundaries used for comparison to the 2016 reporting year is consistent with the boundaries for the 2017 reporting year.
31.	GHG Emissions – Year over Year Performance Is the statement accurate and transparent? Include check of previous year value for consistency for boundary.	Desktop Assessment Procedures Assess statement on energy use re: 2017 versus 2016. Check that boundaries are consistent between 2016 and 2017. Site Visit Procedures n/a	Overall Findings Satisfactory – the year over year performance value for total GHG emissions is accurate. Satisfactory – the boundaries used for comparison to the 2016 reporting year is consistent with the boundaries for the 2017 reporting year.

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6.1 DISCREPANCIES

Several discrepancies were discovered during the verification. The identified discrepancies, resolutions, and remaining discrepancies are provided in Table 5.

Table 5 List of Discrepancies Identified During Verification Activities

Parameter	Description of Discrepancy	Discrepancy (tCO ₂ e)	Resolution
Scope 1 – Direct Emissions	Resolved Immaterial Quantitative Discrepancy of 44 tCO ₂ e under-reported (approximately 0% of Scope 1 & 2 emissions). Non-biogenic emissions from landfill gas combustion were not included in the total Scope 1 emissions.	44 tCO ₂ e (under-reported)	An updated version of the calculations included accurately quantified emissions from this source and therefore this item is resolved.
Scope 1 – Direct Emissions	Resolved Immaterial Quantitative Discrepancy of 0.4% of Scope 1 & 2 emissions. Emissions from natural gas combustion are supported by invoices but for immaterial differences in volumes at one facility.	n/a - qualitative	GM updated the quantities at the facility to reflect the correct values and this discrepancy is now resolved.
Scope 2 – Indirect Emissions	Resolved Immaterial Qualitative Discrepancy due to insufficient record maintenance on emission factors. Electricity emission factors for GMSA and GMIO are appropriate for their regions, however, documentation and retention procedures on emission factors were found to be insufficient for these regions.	n/a - qualitative	Updated EF lists were provided for these regions along with documentation supporting the EFs and therefore this item is now resolved.
Scope 2 – Indirect Emissions	Resolved Immaterial quantitative discrepancy of 752 tCO ₂ e over-reported (approximately 0.007% of Scope 1 & 2 emissions). The electricity emissions were successfully recalculated with the exception of five facilities.	752 tCO ₂ e (over-reported)	GM updated the emissions calculations from electricity and the emissions from these five facilities are calculated correctly therefore this item is resolved.
Scope 2 – Indirect Emissions	Resolved Material Quantitative Discrepancy of 242,627 tCO ₂ e in the first three quarters of 2017, which is approximately 5% of total Scope 1 & 2 emissions – EFs used for electricity in GMNA were out of	242,627 tCO ₂ e (over-reported)	The EFs were updated to reflect the most recent version of eGrid and therefore this item is resolved.

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Parameter	Description of Discrepancy	Discrepancy (tCO ₂ e)	Resolution
	date.		
Scope 3 – Category 1 Purchase and Use of Goods and Services and Category 2 Capital Goods	Immaterial Quantitative Discrepancy of 10,207 tCO ₂ e under reported (approximately 0.004% of Scope 3 emissions). The third-party model used to calculate Category 1 & 2 emissions was found to be acceptable. The exclusion of negligible quantities of Category 1 & 2 emissions in the model results in an immaterial quantitative discrepancy of not more than 0.004% under-reported of the total Scope 3 emissions.	10,207 tCO ₂ e (under-reported)	Not resolved
Scope 3 – Category 1 Purchase and Use of Goods and Services and Category 2 Capital Goods	Immaterial Qualitative Discrepancy – due to lack of consistency in methodology used to calculate Category 1 and Category 2 emissions. A different model was used to calculate these emissions in previous reporting periods.	n/a - qualitative	Not Resolved
Waste; and GRI Effluents and Waste	Immaterial Qualitative Discrepancy – data entry procedures for waste at the facilities are found to not be robust enough to support the data in GMR2. This has an immaterial effect on the waste assertion since the projected error for all facilities in 2017 is not expected to exceed 0.08%.	n/a - qualitative	Not Resolved
Waste; and GRI Effluents and Waste	Immaterial Quantitative Discrepancy of 0.003% – the total facility waste was not supported by onsite facility records.	0.003% of total waste (over-reported)	Not Resolved
Energy Use	Resolved Immaterial quantitative discrepancy of 1.3% of total Energy Use. Energy use is supported by invoices but for immaterial differences in usage at one facility.	1.3% of total energy use (under-reported)	GM updated the quantities at the facility to reflect the correct values and this discrepancy is now resolved.

The unresolved discrepancies identified in Table 5 are below the materiality threshold of 5% within each category. Qualitatively and in conjunction with quantitative discrepancies, there are no material discrepancies.

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7.0 Conclusion

Based on the processes and procedures completed, there is no evidence that GM's stated GHG Assertions and Environmental Performance Metrics for the 2017 calendar year are not, in all material respects, fairly stated in accordance with the criteria noted herein. A copy of the verification statement is provided in Appendix C.

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8.0 Closure

Stantec provides this conclusion as an independent verifier. Prior to entering into an assurance agreement Stantec assesses for any real, potential, or perceived conflict. Stantec continues to monitor for compromised impartiality throughout the engagement.

Stantec provides this report to GM in accordance with our terms of agreement. We consent to its public release. Because of the inherent limitations in any verification, Stantec accepts no responsibility by use of a third party. Stantec has undertaken all assignments in its role as an environmental engineering consulting firm using professional effort consistent with ISO 14064:3. Stantec has assessed the 2017 GHG Assertion and Environmental Performance Metrics for GM Global Facilities using reasonably ascertainable information. The assessment represents the conditions in the subject area at the time of the assessment. Stantec did not conduct direct GHG emissions monitoring or other environmental sampling and analysis in conjunction with this verification report. Stantec will retain all project documents for a minimum of seven (7) years.

If you have questions or require clarification regarding the contents of the report, please contact the undersigned.

Respectfully submitted,

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Appendix A – List of Excluded Facilities

GM 2017 Sites Excluded from Reporting, as they are not currently tracked/reporting to GM2100 (Note that the majority of these sites are smaller, commercial office space. Many are leased spaces.)

ENERGY/GREENHOUSE GASES/Waste:

(w) indicates site is reported for Waste, but not reported for Energy/GHG's

(W) indicates site is not reported for Waste only

(H₂O) indicates that site is not reported for Water only

GMIO:

- **Australia**
 - **NON-MANUFACTURING**
 - 1036: GM Holden - Hallam CCA BDC, Hallam, Victoria
 - 1037: GM Holden - Queensland Zone Office, Brisbane, Queensland
 - GM Holden HSPO - Elizabeth CDC, Elizabeth,
 - 1726: GM Holden ATB - Reynella Warehouse, Old Reynella, South Australia
 - 1910: GMHANSC ATB - Woodville CCA PDC, Woodville, South Australia
 - 1992: GMHANSC - CVO & Engineering Garage, Port Melbourne, Victoria
 - 2117: GM Holden ATB - Gillman CCA PDC, Gillman, South Australia
 - 2277: GM Holden - Elizabeth CCA ACDC, Elizabeth South, South Australia
 - 8670: Carpark, Elizabeth, South Australia
 - 9024: GM Holden - New South Wales Zone Office, North Ryde, New South Wales
 - 9354: GM Holden - Design Fabrication Shop, Port Melbourne, Victoria
 - 9358: GM Holden - Elizabeth CCA ACDC 2, Elizabeth, South Australia
 - **Additional Sites Not Reporting for Waste and Water only**
 - 5422: North Ryde **(W)** **(H₂O)**
 - 5423: Cannon Hill **(W)** **(H₂O)**
 - 5430: Welshpool Warehouse **(W)** **(H₂O)**
 - 6294: Dandenong Warehouse **(W)** **(H₂O)**
 - 6295: Lang Lang Proving Ground **(W)**
 - 9226: Holden Corp HQ **(W)** **(H₂O)**
- **China**
 - **NON-MANUFACTURING**
 - 1012: Xiamen OnStar Call Center, Xiamen
 - 1076: GMAC-Shanghai, Shanghai
 - 1078: GM Financial Office - Fortune Plaza, Shanghai
 - 1189: GCC - Cienet Beijing Facility, Beijing
 - 1190: GPSC Office at Poly V Building Zhujiang, Guangzhou
 - 1444: GMWTC - Sinotrans Warehouse, Shanghai
 - 6293: PATAC Shop, Shanghai
 - 7195: GM China - PR Office, Beijing

- 7890: GMIO and China HQ & Ctr for Advanced Research and Science, Shanghai
- 8972: Shanghai OnStar Call Center, Shanghai

Additional Non-Mfg. Sites:

- PATAC Guangde Proving Ground, Guangde, Anhui **(w)**

- **MANUFACTURING**

- 9044 : FAW Hongta Assembly & Stamping, Qujing, Yunnan
- 9397: FAW-GM Harbin Assembly & Stamping, Harbin Heilongjiang

Additional Mfg. Sites:

- FAW-GM Changchun Assembly, Changchun Jilin

- **Egypt**

- **NON-MANUFACTURING**

- 1085: Sofitel Tower - GM NA HQ, Maadi
- 5252: GM Egypt – HQ, Maadi

- **India**

- **NON-MANUFACTURING**

- 1063: GM India - GMTCI AC Delco Bhiwandi PDC, Bhiwandi
- 1081: GM India - Bengaluru Regional Office, Bengaluru
- 1149: GM India - Chevrolet Training Center North, Gurgaon
- 1165: GM India - Kolkata Regional Office 2, Kolkata
- 1168: GM India - Mumbai Regional Office , Mumbai
- 1195: GM India HQ, Gurgaon **(w)**
- 1199: GM India - Chevrolet CCA North PDC, Gurgaon
- 1204 GM India - Chevrolet Training Center East, Kolkata
- 1238: GM India - Mumbai Export PDI Warehouse, Mumbai
- 1685: GM India - Ahmedabad Regional Office, Ahmedabad
- 1941: GM India - Registered Office, Ahmedabad
- 2076: GM India - Chandigarh VSSM Office, Chandigarh
- 5460: GM India - Technical Center, Bengaluru **(w)**
- 6434: GM India - Chennai Regional Office, Chennai, Tamil Nadu
- 9163: GM India - Chevrolet Training Center South, Bengaluru
- 9367: GM India - GMTCI Data Centre, Bengaluru

- **MANUFACTURING**

- **Note: 6323: GM India – Halol Assembly, Not Reported for 2017, Facility SOLD to SAIC, May 2017.**

- **Indonesia**

- **NON-MANUFACTURING**

- 1001: GM Indonesia - CCA PDC, Jakarta
- 1235: GM Indonesia NSC Office, Jakarta
- 1764: GM Indonesia Training Center, Jakarta

- **Israel**
 - **NON-MANUFACTURING**
 - 2098: Israel - Specialized Engineering Center, Herzliya
 - 2279: GM Israel - Vehicle Test Track, Herzliya
 - 9199: GM Israel - Advance Technical Center, Herzliya Pituach
- **Japan**
 - **NON-MANUFACTURING**
 - 1155: GM Japan - Training Center, Tokyo
 - 6772: GM Japan – Headquarters, Shinagawa Ku
- **Kenya**
 - **MANUFACTURING**
 - **Note: Kenya/Nairobi Assembly – Not Reported for 2017, Facility TRANSFERRED to ISUZU, May 2017**
- **Korea (South), Republic of**
 - **NON-MANUFACTURING**
 - 1062: GM Korea - Seoul Emergency AS Center, Seoul
 - 1123: GMK Company - PR & Fleet Office, Seoul
 - 1520: GM Korea - GMK Direct Sales Branch Office - Daegu, Daegu
 - 1521: GMK Direct Sales Regional HQ – Daejeon, Daejeon
 - 1522: GMK Direct Sales Regional HQ – Busan
 - 1523: GMK Direct Sales Regional HQ – Seoul
 - 1524: GMK Direct Sales Branch Office – Pyeongchon, Anyang City
 - 1688: GMK-Jeongja-#101
 - 1689: GMK-Jeongja-#103-A
 - 1690: GMK-Jeongja -#103-B
 - 1691: GMK-Jeongja-#104
 - 1692: GMK-Hanam
 - 1693: GMK-Yangpyeong
 - 1694: GMK-Pyeongchang Olympic
 - 1695: GMK-Sam Chuk
 - 1696: GMK-Kyungsan
 - 1698: GMK-Sasang
 - 1699: GMK-Gijang
 - 1700: GMK-Samchunpo
 - 1701: GMK-Gimhae Jaeil
 - 1702: GMK-Masan Hanil
 - 1703: GMK-Changwon Seobu (3, Hyanggyo-ro, Jinju-si)
 - 1704: GMK-Changwon Seobu (2-15, Ugok-ro, Uichang-gu, Changwon-si)
 - 1705: GMK-Tongyoug
 - 1706: GMK-Mapo Joongang
 - 1707: GMK-Wangshipli
 - 1708: GMK-Ungam
 - 1709/: GMK-Sinwondang
 - 1710: GMK-Uljangbu Joongang

- 1711: GMK-Ilsan Joongang-1
- 1712: GMK-Kundae
- 1713: GMK-Garak
- 1715: GMK-Oryun
- 1716: GMK-Maseok
- 1717: GMK-Yangjae 1
- 1718: GMK-Yeoksam 1
- 1719: GMK-Bucheon Sinil
- 1720: GMK-Ansan Hosoo
- 1721: GMK-Guro
- 1722: GMK-Youseong
- 1723: GMK-Cheongju Yongam
- 1742: GMK-Bundang Yatap
- 1745: GMK-Gosaek
- 1746: GMK-Buk-Suwon
- 1747: GMK-Dongtan
- 1748: GMK-Dong Suwon
- 1749: GMK-Hongcheon
- 1750: GMK-Daegu Sincheon
- 1751: GMK-Banyaworl
- 1753: GMK - Daegu Seobu
- 1754: GMK - Dong Andong
- 1755: GMK – Andong
- 1756: GMK – Geumjeong
- 1757: GMK – Yangsan
- 1758: GMK – Daeyeon
- 1777: GMK – Yongho
- 1778: GMK – Gupo
- 1779: GMK – Hadan
- 1780: GMK – Sinsigaji
- 1781: GMK – Geumsa
- 1782: GMK – Janglim
- 1783: GMK – Dongmasan
- 1843: GMK-Geochang
- 1844: GMK-Gaeumjeong
- 1845: GMK-Nowon
- 1846: GMK-Dongducheon
- 1847: GMK-Joongwha
- 1848: GMK-Myeongji
- 1850: GMK-Bukbu
- 1851: GMK-Millak
- 1852: GMK-Uijeongbu
- 1853: GMK-Ilsan Hosu-105
- 1854: GMK-Ilsan Hosu-104

- 1855: GMK-Dongseoul
- 1856: GMK-Gangnam-Nonhyun
- 1871: GMK-Cheonho
- 1872: GMK-Bangbae
- 1873: GMK-Jongno
- 1874: GMK-Toegye-ro
- 1875: GMK-Shin Bucheon
- 1876: GMK-Bucheon Sangdong
- 1877: GMK-Bupyeong Jungang
- 1888: GMK-Guro Oryu
- 1889: GMK-Gangseogu Office
- 1890: GMK-Gangseo Balsan
- 1891: GMK-Mokdong
- 1892: GMK-Yeouido
- 1893: GMK-Nam-Daejeon
- 1903: GMK-Daedeok Valley
- 1904: GMK-Daejeon Dunsan
- 1905: GMK-Daejeon Dunsan
- 1906: GMK-Asan Jungang
- 1907: GMK-Cheonan Bukbu
- 1909: GMK-Cheonan Jungang
- 1932: GMK-Gimhae Daedong
- 1933: GMK Guri (Showroom)
- 1934: GMK-Hongseong
- 1935: GMK-Shincheongju
- 1936: Gwangju Yongbong
- 1937: GMK-Mokpo Yudal
- 1964: GMK-Pyeongtaek
- 1965: GMK-Jeonga #102-A
- 1966: GMK-Jeonga #102B
- 1967: GMK-Seongnam Moran
- 1968: GMK-Boondang Ori 1
- 1969: GMK-Boondang Ori 2
- 1970: GMK-Seo-Suwon
- 1971: GMK-Suwon Jungang 1
- 1973: GMK-Yongin
- 1974: GMK-Songtan
- 1975: GMK-Osan
- 1981: GMK-Sokcho
- 1997: GMK-Daegu Susung
- 2149: Seoul PR, Seoul
- 5338: GM Korea - Jeju Warehouse, Jeju-si
- 6289: GM Korea - Gwangju CCA Warehouse, Gwangju
- 6305: GM Korea - Jeonju Aftersales Center, Jeonju

- 6321: GM Korea - Seoul Aftersales Center, Seoul
- 6322: GM Korea - Dong - Seoul Aftersales Center
- 6329: GM Korea - Wonju Service Center, Wonju-si
- 6668: GM Korea - Incheon PDC, Incheon (w)
- 6706: GM Korea - Sejong PDC, Sejong (w)
- 6924: GM Korea - Incheon CKD Center
- 7270: GM Korea - Bucheon Training Center, Bucheon
- 7311: GM Korea - Bupyeong Gajeong Dormitory
- 7830: GM Korea - KD Center. Gunsan
- 8190: GM Korea - Changwon Apartment and Dormitory
- 8251: GM Korea - Daegu Aftersales Office
- 8631: GM Korea - Daewoo Apartment
- 8633: GM Korea - Hyundai Apartment
- 9222: GM Korea - Seocho Showroom
- 9251: GM Korea - Sejong City Dormitory
- 8251: GM Korea - Daegu Aftersales Office, Daegu
- **Malaysia**
 - **NON-MANUFACTURING**
 - 1011: GM Thailand - Malaysia Rep Office, Kuala Lumpur
- **New Zealand**
 - **NON-MANUFACTURING**
 - 2123: Holden New Zealand - Training Center, Auckland
 - 6914: Holden New Zealand - Training Center, Wiri Auckland
 - 8871: Holden New Zealand - HQ & CCA PDC, Auckland
- **Philippines**
 - **NON-MANUFACTURING**
 - 1205: GBS - Manila Shared Services 2, Taguig City
 - 1376: CARS Manila Call Center at Cyber One Building, Quezon City
 - ~~1549: GM Philippines - Virtual Office, Makati City~~ (Removed from List, REPORTING BEGAN 1/1/2017)
 - 9061: GM Philippines - Rep Office, Makati City
- **Additional Sites Not Reporting for Waste only**
 - MANILA CUSTOMER ENGAGEMENT CEN (w)

Singapore

- **NON-MANUFACTURING**
 - 1143: GM International HQ – Singapore, Singapore
 - 1201: GMIT RNAP Colocation Space, Singapore
 - 9383: GMIT Singapore - Regional Data Centre – Primary, Singapore
- **South Africa**
 - **Note: South Africa Operations – Not Reported for 2017, Facilities SOLD to ISUZU, December 31, 2017**

- **Taiwan**
 - **NON-MANUFACTURING**
 - 9031: GM Taiwan – Headquarters, Xinbei
- **Thailand**
 - **NON-MANUFACTURING**
 - 5404: GM Thailand and Chevrolet Sales Thailand Ltd., Bangkok
 - 5507: GM Thailand - CST Vehicle Maintenance and Training Center, Nonthaburi
 - 8310: GM Thailand - CST Bangpra In CCA PDC, Bangpra In
- **United Arab Emirates**
 - **NON-MANUFACTURING**
 - 1033: GM MEO - MEDC Overflow CCA PDC, Dubai
 - 1728: GM MEO-Dubai CVO Warehouse, Dubai
 - 1763: GM MEO - Dubai Training Center, Dubai
 - 5404: GM MEO - Headquarters, Dubai
 - 7192: GM MEO – MEDC, Dubai
- **Uzbekistan**
 - **NON-MANUFACTURING**
 - 1152: GM Uzbekistan Tashkent Office, Tashkent
 - 1341: Uzbekistan Damas HAPO, Pitnak, Hozarasp District
 - **MANUFACTURING**
 - 9038: GM Uzbekistan Tashkent SKD Assembly, Tashkent
- **Vietnam**
 - **NON-MANUFACTURING**
 - 1099: GMV HCMC Office, Ho Chi Minh City

Opel-Vauxhall:

NOTE: The majority of GM's Opel-Vauxhall Operations were sold to PSA on August 1, 2017, and are not included in GM's reporting for 2017.

- **Germany**
 - **NON-MANUFACTURING**
 - 2108: Adam Opel Haus - Transition Management Team (TMT), Russelsheim
 - 7513: Meuspath/Nuerburging – Workshop, Meuspath
- **Ireland**
 - **NON-MANUFACTURING**
 - 1202: Dublin COLO/Data Center, Dublin
 - 1221: GMIT Limerick Office, Limerick
 - 1901: Dublin Long Mile Road (LMR)/Data Center, Dublin

- Italy
 - **NON-MANUFACTURING**
 - ~~8110: Torino GPS, Turin~~ (Removed from List: Energy, Water, GHG REPORTING BEGAN 1/1/2017)
 - 1225: Grugliasco Storage Warehouse, Grugliasco
 - 1615: Turin Corso Telesio, Turin
- Russia
 - **NON-MANUFACTURING**
 - 1109: Moscow Aftersales Warehouse, Moscow
 - 1610: Moscow VSSM Office, Moscow
 - **MANUFACTURING**
 - Note - 8050: St. Petersburg Shushary Assembly, St. Petersburg – REPORTED for 2017 status is WARM SHUTDOWN
- Switzerland
 - **NON-MANUFACTURING**
 - 1252: Cadillac International Headquarters, Opfikon

GMSA

- Argentina
 - **NON-MANUFACTURING**
 - 1071: GM Argentina Global IT Office, Rosario
 - 1142: GM Argentina Headquarters, Buenos Aires
- Brazil
 - **NON-MANUFACTURING**
 - 1126: GM Brazil - Public Relations Office, Brasilia
 - 2096: Morro do Itapeti, Mogi das Cruces
 - 2115: Residential Building – Sao Paulo, Rua Barata Ribeiro, 234/236/244
 - 2153: Former Arteb Supplier Site, Gravatai
 - 5446: GM Financial South America, Sao Paulo
 - 6313: GM Brazil - Sao Caetano do Sul Tijolinho, Sao Paulo
 - **Additional Sites Not Reporting for Waste and Water only**
 - 1048: Guarulho`s Logistics Center **(W)** **(H₂O)**
- Chile
 - **NON-MANUFACTURING**
 - 1055: GM Chile - Antofagasta Autoplaza, Antofagasta
 - 1056: GM Chile - Talcahuano Autoplaza, Talcahuano
 - 1111: GM Chile - GMAC Office 2, Las Condes
 - 8095: GM Chile - Santiago PDC, Santiago
 - 9175: GM Chile - Vespucio Autoplaza, Santiago
 - 9176: GM Chile - Mall Plaza Alameda, Santiago
 - 9183: GM Chile - Mall Plaza Vespucio & Service Center, Santiago
 - 9189: GM Chile - Mall Plaza Norte, Santiago

- **Colombia**
 - **NON-MANUFACTURING**
 - 1106: GM Colombia - GMAC Office Edificio Calle 100, Santa fe De Bogota
 - 9095: GM Colombia - GMISC Office, Santa fe De Bogota
- **Ecuador**
 - **NON-MANUFACTURING**
 - 6671: GM Ecuador - Materials Consolidation Center, Quito
 - 8810: GM Ecuador - Las Acacias PDC – Quito **(w)**
- **Peru**
 - **NON-MANUFACTURING**
 - 1636: Mall Aventura Plaza Santa Anita, Lima
 - 1660: GM Peru - Mall Del Sul Showroom, Lima
 - 7059: GM Peru – Headquarters, Lima
 - 9079: GM Peru - Mall Plaza Trujillo, Trujillo
 - 9084: GM Peru - Mall Plaza Callao, Callao
 - 9085: GM Peru - Aventura Plaza Arequipa, Arequipa
 - 9420: GM Peru - Mall Plaza Lima Norte, Lima
- **Venezuela**
 - **NON-MANUFACTURING**
 - 1049: GM GMAC Venezuela, Caracas
 - 1765: Centro Bancaribe Las Mercedes, Calle Paris
 - 6326: GM Venezuela - Valencia PDC, Valencia
 - 7050: GM Venezuela - Chevy Plan Office, La Valencia
 - **MANUFACTURING**
 - 6324: Valencia Assembly, Valencia (seized by the Venezuelan Government, April 2017)
 - 7875: Mariara Assembly, (unable to obtain data due to political unrest)
- **Uruguay**
 - 1031: GM Uruguay - Headquarters WTC, Montevideo

GMNA

- **Canada**
 - **NON-MANUFACTURING**
 - 1064: Burnaby Branch Office II, Burnaby, BC
 - 1517: Kitchener Innovation Lab, Kitchener, ON
 - 1590: Canadian Technical Center - Markham Campus, Markham, ON
 - 5285: Sainte Foy Training Center, Ste. Foy, QC
 - 9138: Peterborough Collection Center, Peterborough, ON
 - 9210: Toronto Originations, Toronto, ON

- **Additional Sites Not Reporting for Waste and Water only**
 - 5281: CCA RICHMOND HILL (W) (H₂O)
 - 5277: GLOUCESTER TRAINING CENTER (W) (H₂O)
 - 6274: GMCL Cold Weather Dev Center (H₂O)
 - 1030: CCA Langley (W)
 - 1227: CCA POINTE CLAIRE (W)
- **Mexico**
 - **NON-MANUFACTURING**
 - 1089: GMAC Mexico - Avenida Fundadores, Neuvo Leon
 - 1247: Toluca Off-Site Warehouse, Toluca
 - 1738; Plaza Carso Vehicle Display, Mexico City
 - 1921: San Luis Potosi LOC, San Luis Potosi
 - 8171: Mexico City Dealership, Mexico City
 - **Additional Sites Not Reporting for Waste and Water only**
 - 1080: Queretaro Vehicle Dist Center (W) (H₂O)
 - 1248: GM Mexico Tower HQ (W) (H₂O)
 - 2101: NMO CENTURY XX1 MEXICO HQ (W)
- **United States**
 - **NON-MANUFACTURING**
 - 1013: Boston Branch Office 3, Southborough , MA
 - 1029: Philadelphia Branch Office 2, Horsham, PA
 - 1041: New York Treasurers Office/GM Asset Management, New York, NY
 - 1065: Arlington AOC III Collection Center, Arlington, TX
 - 1069: UAW Anderson Field Office, Anderson, IN
 - 1084: Phoenix Speedway, Avondale, AZ
 - 1104: Irving US-SSM South Central Regional Office, Irving, TX
 - 1107: Rippavilla Mansion, Maury County, TN
 - 1112: GMF International Treasury Office, Charlotte, NC
 - 1121: Orlando Branch Office 2, Altamonte Springs, FL
 - 1122: Paramus Branch Office 2, Paramus, NJ
 - 1141: Denver Branch Office 2, Greenwood Village, CO
 - 1144: Naperville US-SSM North Central Regional Office 2, Naperville, IL
 - 1148: Irving Commercial Lending Office, Irving, TX
 - 1151: Cincinnati Branch Office 3, Mason, OH
 - 1163: Westlake Village US-SSM Western Regional Office, Westlake Village, CA
 - 1174: Cadillac New York Headquarters, New York, NY
 - 1185: VanDyke Center, Warren MI
 - ~~1181: Arlington LOC, Grand Prairie, TX~~ (Removed from List 2017, Energy, Water, GHG REPORTING BEGAN 1/1/2017)
 - 1197: GMF International – CARRS, Bloomington, MN
 - 1228: Tallahassee - GM Public Policy Office, Tallahassee, FL
 - 1232: Indianapolis Regional Public Policy Office, Indianapolis, IN
 - 1233: Global Market Research – Cypress, Cypress, CA

- 1236: Sacramento Public Policy Office, Sacramento, CA
- 1250: GPS Warehouse, 2815 South Gettysburg Avenue, Moraine, OH
- 1260: Flint Linden Creek Parkway Warehouse, Flint, MI
- 1450: Saginaw GPS, 77 W Center St., Saginaw, MI 48605
- 1516: Android Industries - North Location, Arlington, TX
- 1530: Maven San Francisco, San Francisco, CA
- 1535: San Jose Office, San Jose, CA
- 1631: Maven Boston, Boston, MA
- 1632: Maven Chicago, Chicago, IL
- 1633: Maven Los Angeles, Los Angeles, CA
- 1634: Maven Denver, Denver, CO
- 1663: San Antonio Branch Office, San Antonio, TX
- 1673: Maven San Diego, San Diego, CA
- 1683: Atlanta Branch Office, Alpharetta, GA
- 1727: Arlington Branch Office, Arlington, TX
- 1730: Maven-Atlanta Temp Office, Atlanta, GA
- 1735: Mid Michigan Motorplex, Stanton, MI
- 1740: San Antonio Branch Office 3, San Antonio, TX
- 1767: Pontiac Movie Studio, Pontiac, MI
- 1768; GM Cruise San Francisco HQ, San Francisco, CA
- 1808: GM Cruise Phoenix, Phoenix, AZ
- 1849: GM Cruise South San Francisco, South San Francisco, CA
- 1887: GM Cruise - 360 9th Street, San Francisco, CA
- 1895: Maven Baltimore Office, Baltimore, MD
- 1911: Maven Advertising-30 Massachusetts Ave, Washington, D.C.
- 1927: GM Cruise - 349 9th Street, San Francisco, CA
- 2040: Oscoda Wurtsmith Airport (Test Track/Taxiway A), Oscoda, MI
- 2088: Danbury US-SSM Northeast Regional Office 2, Danbury, CT
- 5004: Ypsilanti - Willow Run CCA PDC & PC, Ypsilanti, MI (w)
- 5136: Kincheloe Proving Ground, Kincheloe, MI
- 5137: Lansing - GM Public Policy Office, Lansing, MI
- 5144: Southfield Town Center, Southfield, MI
- 5177: New York Manhattan Office, New York, NY
- 5470: Alpharetta US-SSM Southeast Regional Office, Alpharett, GA
- 6652: Irving US-SSM South Central Regional Storage, Irving, TX
- 6667: Matzinger Warehouse, Toledo, OH
- 6765: GM Wintergarden Car Office, Wintergarden, FL
- 6770: Washington - GM Public Policy Office, Washington, D.C.
- 7521: Palo Alto Advanced Technology Office, Palo Alto, CA (w)
- 7590: Warren Company Vehicle Operations, Warren, MI
- 9093: Danbury US-SSM Northeast Regional Office, Danbury, CT
- 9114: Sugarland Branch Office, Sugarland, TX
- 9117: Naperville Branch Office, West Naperville, IL
- 9121: Brookfield Lakes Corporate Center VIII, Brookfield, WI

- 9128: So California Branch Office, Cerritos, CA
- 9129: Seattle Branch Office, Lynwood, WA
- 9135: Raleigh Branch Office, Raleigh, NC
- 9136: GM Financial Corporate Office, Fort Worth, TX
- 9137: Huntersville Collection Center, Huntersville, NC
- 9139: Chandler Collection Center, Chandler, AZ
- 9141: Arlington AOC I Collection Center, Arlington, TX
- **Additional Sites Not Reporting for Waste and Water only**
 - 0192: GM-Delphi P Warren **(W)** **(H₂O)**
 - 1079: Arizona IT Innovation Center **(H₂O)**
 - 1098: Flint Factory One **(W)**
 - 1192: Royal Park Warehouse **(W)** **(H₂O)**
 - 1233: LAMBDA Associates **(W)**
 - 1674: North Point Supplier Park **(W)**
 - 1857: BOWLING GREEN IND PARK F A S T **(W)** **(H₂O)**
 - 1930: SUNNYVALE ADVANCED TECHNOLOGY **(W)** **(H₂O)**
 - 4920: CCA CHARLOTTE PDC 39 **(H₂O)**
 - 4964: RFO CHARLOTTE CALL CENTER **(W)** **(H₂O)**
 - 4958: RFO AUSTIN CALL CENTER **(W)**
 - 5021: RFO VSSM MKT RESEARCH COPPEL **(H₂O)**
 - 6898: RFO Ardsley Training Center **(H₂O)**
 - 8392: OnStar GONB-Westmount Tech Cen **(H₂O)**
 - 9846: GM ATV TORRANCE OPERATIONS **(H₂O)**
- **MANUFACTURING**
 - **NOTE: 1525: JANESVILLE ASSEMBLY - not reported for 2017, Sold December 20, 2017**
 - 1129: Fairfax - Inergy Fuel Tank Facility, Kansas City, KS
 - 1173: Lansing Regional LOC, Lansing, MI
 - 1659: Arlington Supplier Park, Arlington, TX
- **Additional Sites Not Reporting for Water only**
 - 8872: GENERAL MOTORS BAP BROWNSTOWN **(H₂O)**

**VERIFICATION REPORT – 2017 GREENHOUSE GAS ASSERTIONS AND ENVIRONMENTAL
PERFORMANCE METRICS**

GENERAL MOTORS – SUSTAINABLE WORKPLACES

OCTOBER 19, 2018

Appendix B – Initial Verification Plan



Stantec

Stantec Consulting Ltd.
11-2042 Mills Road, Sidney BC V8L 5X4

VIA Email: anna.prodin@gm.com

March 6, 2018
File: 160900898

Attention: Anna M. Prodin, Manager – GM 2100
General Motors,
30400 VanDyke Avenue,
Warren, MI 48093

Dear Ms. Prodin,

Reference: Verification and Sampling Plan - General Motors – Global Facilities 2017 Environmental Performance Metrics

INITIAL VERIFICATION PLAN

INTRODUCTION

Stantec Consulting Ltd. (Stantec) was retained by General Motors (GM) to verify that the data contained in the 2017 Environmental Performance Indicator 2017 Report (the Environmental Performance Report). The Environmental Performance Report aggregates and reports on year-over-year performance of the following environmental metrics (the Assertions) for approximately 160 locations worldwide (herein referred to as GM Global):

- Total scope 1-3 greenhouse gas (GHG) emissions;
- Total renewable energy use and, as applicable, the purchase and retirement of Renewable Energy Credits (RECs);
- Total volume of water withdrawals by source, volumes recycled, and discharges;
- Total vehicles produced and reported; and
- Total volume of effluents and waste (hazardous and non-hazardous).

GM global reports on these environmental metrics under the following voluntary programs (the Reporting Program(s)):

- The Carbon Disclosure Project (CDP); and
- The Global Reporting Initiative (GRI);

The GM Global facilities are located in various regions around the world and operate under the following operational boundaries: GM International Operations (GMIO), GM South America (GMSA), and GM North America (GMNA). GM does not include all facilities in the reporting boundary and these exclusions have yet to be identified.

Stantec has completed the initial desktop review of the information provided for the verification of the Report. The scope of the engagement and the planned verification procedures are provided in this verification and sampling plan. The verification and sampling plan also provides a list of data and documentation required to complete the planned procedures.

March 6, 2018

Anna M. Prodin, Manager – GM 2100

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Reference: Verification and Sampling Plan - General Motors – Global Facilities 2017 Environmental Performance Metrics

VERIFICATION FUNDAMENTALS

The verification objectives, criteria, standards, level of assurance, materiality threshold, and period are presented in Table 1.

Table 1. Verification Fundamentals

Parameter	Description
Verification Objectives	The objective of this verification is to provide a limited level of assurance opinion that the environmental metrics (the Assertions) contained in the Environmental Performance Report are accurate and supported by sufficient and appropriate evidence. The purpose of this verification and sampling plan is to identify key data sources, methods, and procedures pertinent to the relevant Reporting Programs. In addition to the requirements of the Reporting Programs, Stantec considers completeness, conservativeness, consistency, accuracy, and transparency as criteria to facilitate the assessment as to whether the 2017 Assertions are presented fairly and substantiated by sufficient and appropriate evidence.
Verification Criteria	<ul style="list-style-type: none"> • ISO 14064-1:2006 Greenhouse gases -- Part 1: Specification with Guidance at The Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals • World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD), The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (revised edition), March 2004 • WRI/WBSCD, GHG Protocol Scope 2 Guidance: An Amendment to the GHG Corporate Standard, January 2015 • WRI/WBCSD, Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard, 2011 • CDP Guidance for the 2017 reporting year (CDP Guidance) • GRI Sustainability Reporting Guidelines
Verification Standards	<ul style="list-style-type: none"> • The AA1000 AccountAbility Principles Standard (2008) • ISO 14064 Part 3 – Greenhouse Gases: Specification with guidance for the validation and verification of greenhouse gas Assertions; and • ISO 14065 - Greenhouse Gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation and other forms of recognition.
Level of Assurance	Limited (Desktop Review)
Materiality Threshold	Following best practice, the quantitative materiality threshold has been set at 5%. The materiality will be assessed on the absolute values of discrepancies. The aggregate total of individual misstatements (understatements and overstatements of emissions reported) is compared against the 5% materiality threshold. Material qualitative misstatements are at the discretion of the Verification Body.

March 6, 2018

Anna M. Prodin, Manager – GM 2100

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Reference: Verification and Sampling Plan - General Motors – Global Facilities 2017 Environmental Performance Metrics

VERIFICATION SCOPE

The following environmental metrics, presented in Table 2, under GM's Global Operation's reporting boundary, are subject to verification by Stantec.

Table 2. Verification Scope

Area	Metric
CDP GHG Reporting Metrics	<ul style="list-style-type: none"> • Scope 1 (Direct Emissions): <ul style="list-style-type: none"> – Stationary Combustion GHG emissions (carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O)) from the combustion of: <ul style="list-style-type: none"> o Natural gas (CO₂, CH₄, N₂O) o Coke (CO₂, CH₄, N₂O) o Liquid Petroleum Gas (CO₂, CH₄, N₂O) o Oil and Fuel Oil (CO₂, CH₄, N₂O) o Diesel (CO₂, CH₄, N₂O) o Landfill Gas (CH₄, N₂O) – Process GHG Emissions (CO₂) from: <ul style="list-style-type: none"> o Limestone use – Biogenic GHG Emissions from: <ul style="list-style-type: none"> o Landfill gas combustion (CO₂). • Scope 2 Indirect GHG Emissions (location/market-based) from the use of: <ul style="list-style-type: none"> – Indirect electricity (CO₂, CH₄, N₂O) – Indirect purchased steam (CO₂, CH₄, N₂O) – Indirect delivered heat (CO₂, CH₄, N₂O) • Scope 3 Other Indirect GHG Emissions (reported by GM) from: <ul style="list-style-type: none"> – Purchased goods & services – Capital goods – Fuel and energy related activities not included in GHG emissions Scopes 1 or 2 – Use of sold products
Other CDP Reporting Metrics	<ul style="list-style-type: none"> • Scope 1 and Scope 2 GHG emissions by location/region • Renewable and non-renewable energy use by fuel type (MWh) • Total volume of water withdrawals by source, volumes recycled, and discharges (m³) • Total vehicles produced and reported • Year over year performance (2016 vs. 2017 for global energy, water & GHG emissions) (%)
GRI Reporting Metrics	<ul style="list-style-type: none"> • GRI 302 – Energy • GRI 303 – Water • GRI 305 – Emissions • GRI 306 – Effluents and Waste

March 6, 2018

Anna M. Prodin, Manager – GM 2100

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Reference: Verification and Sampling Plan - General Motors – Global Facilities 2017 Environmental Performance Metrics

ASSERTION

The fundamental Assertion to be verified is that the 2017 environmental metrics for the GM Global facilities meets the criteria of the relevant reporting program for the period of January 1, 2017 to December 31, 2017. The 2017 environmental metrics have not been fully provided.

VERIFICATION SCHEDULE

Table 3 presents the planned verification schedule.

Table 3 Verification Schedule

Activity	Responsible Party	Date
Kick-off Call	Stantec / GM	January 29, 2018
Issue Initial Verification Plan	Stantec	March 6, 2018
Receive Assertion and Supporting Documentation	GM	January 30, 2018 – ongoing
Desktop Review (including additional data requests)	Stantec	January 30, 2018 – ongoing
Teleconference	Stantec / GM	Week of March 12, 2018
Final Desktop Review (including additional data requests)	Stantec	March 19, 2018 - April 2, 2018
Draft Verification Report and Statement	Stantec	Week of April 2, 2018
Address Follow-up Items	Stantec / GM	Week of April 2, 2018
Finalize Verification Report and Statement	Stantec	Week of April 2, 2018

VERIFICATION TEAM

Table 4 presents the verification team. As part of Stantec's Sustainability and Climate Change Standard Operating Procedures (SOP), the competence and selection of the team is completed following ISO 14066.

Table 4 Verification Team

Name	Role	Responsibilities
Gizem Gunal-Akgol	Lead Verifier	Gizem will oversee the completion of the procedures and deliverables and will issue the verification statements. She will also lead the teleconference and undertake all project management duties using Stantec's 10-point project management framework.
Nicole Flanagan	Quality Reviewer	Nicole will review all deliverables for technical soundness and compliance with Stantec's standard operating procedures and the Verification Criteria.
Daniel Hegg	Independent Peer Reviewer	Dan will review verification documentation to confirm all verification activities have been completed and are sufficient for the required level

March 6, 2018

Anna M. Prodin, Manager – GM 2100

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Reference: Verification and Sampling Plan - General Motors – Global Facilities 2017 Environmental Performance Metrics

Table 4 Verification Team

Name	Role	Responsibilities
		of assurance. He will independently conclude on whether the Assertions are materially correct as the independent peer reviewer in accordance with ISO 14064-3 and ISO 14065
Toni Zbieranowski	Verifier	Toni will assist Gizem with the sampling plan execution and drafting of reports.
Catherine MacFarlane	Verifier	Catherine will assist Gizem with the sampling plan execution and drafting of reports.
Orasa Webber	Verifier	Orasa will assist Gizem with the sampling plan execution and drafting of reports.

Project Manager and Lead Verifier – Gizem Gunal-Akgol, P.Eng.

Gizem is a Senior Atmospheric Engineer and project manager in the Environmental Services Group of Stantec, providing support in all areas GHG emissions and air quality for over 11 years. Her work is primarily in air quality, GHGs, climate change and sustainability related projects including research and reviews, environmental assessments, inventories, and verifications. She has worked closely with a variety of clients such as governmental bodies and municipalities, as well industrial clients in petroleum refining, chemical and energy production, transportation, waste and manufacturing.

Furthermore, Gizem is an experienced lead GHG verifier with a certificate for Greenhouse Gas Verification using ISO 14064. She has worked on over 75 GHG verification projects in the capacities of lead verifier, verifier and project manager for waste management facilities, oil and gas producers, power generation facilities and lime and cement manufacturing processes under the Ontario, Alberta and British Columbia GHG reporting regulations. She has been the lead verifier at some of Canada's largest and most complex facilities including refineries, petrochemical plants and oil sands facilities for Imperial Oil and Syncrude. Gizem combines her regulatory and program knowledge with a technical background in emission generation and an in-depth understanding of sources and processes that contribute to emissions.

Gizem has also been involved in the development of a number of community and corporate GHG inventories and management plans for the municipal sector under programs such as the Partners for Climate Protection and Ontario's Green Energy Act. She has successfully developed a GHG inventory reporting tool for a unique multi-stakeholder group consisting of the Region of Waterloo, the cities of Waterloo, Cambridge and Kitchener, and the non-profit organizations REEP Green Solutions and Sustainable Waterloo Region. Gizem also provides her expertise to clients in GHG and climate change research and reviews, having worked with Environment and Climate Change Canada (ECCC) to complete a review of the methodology used to calculate Canada's GHG emissions from waste for the National Inventory Report.

Quality Reviewer - Nicole Flanagan, M.A.Sc., P.Eng.

Nicole Flanagan, M.A.Sc., P.Eng. has 18 years of environmental engineering experience, 14 of which are with Stantec. Nicole specializes in climate change and air emissions across a variety of industrial, government and corporate sectors. She is currently the Technical Leader for Climate Change and Sustainability in Canada. Nicole was the lead verifier of

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some of the first regulatory GHG offsets sold in North America, has completed Environmental Compliance Approvals (ECAs), Section 71 Reports and National Pollutant Release Inventory reporting for a number of clients facilitating regulatory compliance. Her air emission and verification clients have included major corporations, electric utilities, energy companies, petrochemical production facilities as well as oil & gas companies. As a subject matter expert, Nicole provides training on the carbon accounting of inventories, emission reduction projects and validation/verification on behalf of the Canadian Standards Association. She is also a senior technical reviewer for greenhouse emission quantification, reporting and verification, strategic carbon consulting and sustainability. She also spent four years with Environment Canada working on program development and program delivery, which included meeting with stakeholders and administering procedural processes. In 2011, Nicole was responsible for managing Canada's UNFCCC National Inventory Report Submission. During this time, she developed a strong understanding of the workings of government from a program administration perspective (Greenhouse Gas, NPRI Reporting Division and Canada's Offset System) as well as from regulatory and instrument development (development of GHG regulations and Pollution Prevention Planning requirements).

Independent Peer Reviewer – Daniel Hegg, B.Comm, M.Sc., CEM

Living on Canada's west coast has deepened Dan's passion for the development and implementation of sustainable practices. His unique perspectives and insights cross many important areas such as sustainable asset management, strategic energy and water management, sustainable ROI business case development, full value accounting, climate change infrastructure risk assessment for the private and public sectors.

In addition to providing strategy and policy advice, Daniel has specialized expertise in climate change adaptation planning. Daniel utilizes a modified risk assessment framework designed to align with ISO 31010 Risk Management Standard and the PIEVC Engineering Protocol to assess various assets and their exposure to climate change risks and hazards, determine priority areas, and develop short/medium/long term strategies to build natural and engineering resilience. Dan has prepared multiple climate-resilience strategies across a variety of sectors including buildings/real-estate, forestry, oil & gas, renewable energy, and mining. Much of his work has directly helped guide various private and public sector organizations in sustainability and climate action decision-making. Having worked on over 150 organizational and facility GHG inventories and offset projects across a wide range of industry sectors, and on numerous GHG mitigation and energy reduction plans, Daniel has proven expertise in climate change mitigation action planning and GHG emissions reductions at the community wide and municipal/ corporate planning contexts.

Verifier – Catherine MacFarlane, M.A.Sc.

Catherine is an Environmental Scientist at Stantec's office in Saint John, New Brunswick. She has a Bachelor of Science degree from the University of New Brunswick and a Master of Applied Science degree in Environmental Applied Science and Management from Ryerson University in Toronto.

Catherine has worked on projects in the atmospheric environment and climate sector, such as ambient air quality and sound monitoring, and GHG inventory development for a variety of private and public sector clients. Catherine successfully completed the CSA ISO 14064-3 GHG validation/verification training course in 2012 and has been involved in numerous GHG verification projects under The Climate Registry voluntary reporting program, as well as the Alberta, British Columbia, Ontario, and Massachusetts mandatory reporting programs. These verification projects have included the following industries: power generation, cogeneration, manufacturing/production (chemical, lime and brick), oil and gas processing, health care facilities, and government bodies. She has also worked with organizations and municipalities to develop corporate and community GHG inventories, and collaboratively worked to assist in the

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development of sustainability and GHG management/reduction plans under programs such as Partners for Climate Protection and the CDP.

Catherine's experience includes project management support, policy research and development, and regulatory reviews (legislation and permitting) for project planning. She has assisted with the coordination of environmental impact assessments (EIA) and has contributed to several EIA Registrations as a technical author.

Verifier – Toni Zbieranowski, M.Sc.

Toni is part of the Atmospheric Environment Team at Stantec, with four years of experience in GHG emission inventory development, quantification and verification. He is knowledgeable in both Alberta and Ontario's GHG reporting programs and has completed verifications for clients in both provinces. He has obtained his GHG verification certificate in ISO 14064-3 and has completed verifications in multiple sectors which include: oil and gas, power generation, manufacturing, and chemical production. Toni has experience with GHG emissions quantification in the power generation sector for reporting under provincial and federal GHG regulations. Toni works on corporate GHG emission quantification projects for Municipalities participating in the Federation of Canadian Municipalities (FCM) Partners for Climate Protection (PCP) program. He has experience generating and updating GHG emission inventories for sources including stationary combustion, electricity use, waste and vehicles. Toni also works on air quality projects including the completion of emissions inventories, dispersion modelling and preparation of Emission Summary and Dispersion Modelling reports for Environmental Compliance Approval applications as well as emissions reporting to the National Pollutant Release Inventory.

Verifier – Orasa Webber, M.Eng.

Orasa has conducted over 90 verifications in Canada and USA under many jurisdictions and programs including Alberta's Specified Gas Emitters Regulation (SGER), Alberta's Emissions Offset Registry, British Columbia (BC) Reporting Regulation, Ontario Regulation, Intergovernmental Panel on Climate Change (IPCC), The Climate Registry and The Massachusetts Department of Environmental Protection Regulation (MassDEP).

Orasa has conducted over 20 verifications under the Greenhouse Gas Emissions Reporting (O. Reg. 452/09) and has prepared GHG inventory for clients, including Hertz Corporation and Baytex Energy, for CDP reporting. She completed her Master's Degree in chemical engineering from McGill University and brings over ten years of experience. For the past five years, she has focused on environmental and climate change work, including National Pollutant Release Inventory (NPRI) reporting, ambient air quality and noise monitoring, environmental impact assessment, GHG inventory, GHG verification and validation, and petroleum contaminated water/soil testing under Atlantic Risk-Based Corrective Action (RBCA) guidelines. She also has industrial experience in quality control of oil refinery products and processing and design of plastic products.

Verifier – Christina Varner, P.Eng.

Christina has practiced environmental engineering, specializing in atmospheric sciences, for eight years. She is a lead GHG verifier at Stantec, having completed over 90 GHG validation and verification projects for clients in oil and gas, chemical manufacture, electricity generation, commercial operations, and municipal governments. Christina has completed desktop reviews, reporting, and site visits for facility and project GHG inventories under Alberta's SGER, British Columbia's GHG Emission Control Regulation and GHG Emission Reporting Regulation, Newfoundland's

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Management of GHG Reporting Regulations, Ontario's Environmental Protection Act 452/09, The Climate Registry, and Verified Carbon Standard.

Christina has been involved in air quality studies such as dispersion modelling, noise monitoring, source emissions testing, and ambient air quality monitoring. Her clients include pulp and paper mills, petroleum refineries, electricity generating stations, and asphalt plants. She has performed data collection and analysis for environmental assessments. Christina has created emissions inventories to address regulatory requirements and permitting, including National Pollutant Release Inventory (NPRI) and Environment Canada Greenhouse Gas program reporting.

VERIFICATION PLAN

The initial planned verification procedures are provided in Attachment A.

RISK ASSESSMENT

The verification team assesses the overall verification risk and determines whether the risks are material and have been appropriately disclosed. The verification team will assess risk throughout the verification and adjust our sampling plan as required to meet the assurance requirements of the verification and maintain an acceptable level of risk.

Overall risk assessment is a process conducted by the Stantec verification team based on an assessment of inherent risk, control risk, and detection risk. In this case, the preliminary overall risk has been assessed as medium¹, based on our preliminary assessment. The rationale for the assessment of overall risk as low is provided in the following sections.

Inherent Risk

Inherent risk is the risk of error that occurs as a result of the lack of capacity by staff; the size/complexity of the organization; the industrial sector; and/or, the technologies or processes being applied in the organization. We regard this risk as medium due to:

- The 2017 environmental metrics are an aggregation of 173 facilities spread across the world. There are multiple facilities within the reporting boundary; however, there are a limited number of activities associated with each facility (medium risk).
- Stantec has not yet received the entire 2017 data set for this verification (only January–September 2017 data has been provided) (medium risk).
- Most environmental metrics calculations are straightforward, based on activity data, and as applicable, emission factors (low risk).
- Most of the activity data used in the Assertions is directly metered or invoiced (low risk).
- Some raw data may not be available in English (medium risk).

¹ Possible risk ratings are "high", "medium" and "low". These are based on inherent, control and detection risks as evaluated by the project team prior to engaging in verification activities.

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Control Risk

Control risk is the risk that the proponent's control system will not detect and rectify a discrepancy. When assessing the GM information systems and controls for sources of potential errors, omissions and misrepresentations, the following will be taken into consideration:

- Selection and management of the environmental metric data and information;
- Processes for collecting, processing, consolidating and reporting environmental metric data and information;
- Systems and processes that ensure the accuracy of the environmental metric data and information;
- Design and maintenance of the environmental metric information system;
- Systems and processes that support the environmental metric information system; and
- Results of previous assessments, if available and appropriate.

We currently regard this risk as **medium** due to:

- GM Global has been proactive in undergoing previous verifications and received positive verification statements (low risk);
- GM Global uses a data management system to support the collection of GHG emission, energy and water information for the whole organization. The GMR2100 system is subject to financial audits (low risk).
- GM Global uses a data management system to track waste globally. The GMR2 system is not subject to financial audits and controls are currently not understood (medium risk).

Detection Risk

Detection risk is the risk that Stantec will not identify a material discrepancy. We regard this risk as **low** due to:

- Our quality management procedures. We are committed to providing exceptional service in accordance with our ISO 9001 and ISO 14065 accreditations. We believe that quality is a basic principle and that quality management is an integral part of all our work. We take a systematic approach to quality management to comply with requirements and to achieve continual improvement. The cornerstone of our quality management system is an entrenched process of Senior and Independent Peer Review which sees that our deliverables have been vetted by experienced and knowledgeable people in our firm.
- Level of assurance. This is a **limited level of assurance** engagement. Stantec takes a risk based approach to the verification which means that not all information will be reviewed; however, Stantec will design the sampling plan to target potentially material items in the Assertions to keep detection risk low.

SITE VERIFICATION PROCEDURES

Stantec will not conduct any site visits as part of this verification. For verifications conducted to a limited level of assurance, a site visit is not required.

TELECONFERENCE

Since there is no planned site visit, following the desktop review, Stantec will hold a teleconference with GM. The purpose of the call is to provide an opportunity for Stantec to conduct verification procedures with GM staff that were involved with the collection and compilation of data and quantification of the environmental metrics, as well as to review

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GM's data collection systems. Stantec will also assess consistency with the program's requirements and previous year's Environmental Performance Report and appropriateness of methods applied. Gizem Gunal-Akgol will lead the teleconference on behalf of Stantec.

INFORMATION REQUEST

Attachment B contains a list of documentation and data required by Stantec to complete the verification procedures. This list of data will be updated as needed through the verification process to track the requests and the outcome of the requests.

FINALIZING THE VERIFICATION PLAN

The initial verification procedures may be adjusted to reflect changes to the risk identified during the verification and any additional verification procedures deemed necessary to provide a reasonable level of assurance. The final verification report will capture any changes to risk, the verification procedures, or the Assertions since the issuance of the initial verification plan.



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Should you have any questions or require additional information, please contact me directly.

Regards,

STANTEC CONSULTING LTD.

A handwritten signature in black ink, appearing to read "G. Gunal".

Gizem Gunal-Akgol, P.Eng.
Lead Verifier and Project Manager
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This letter was reviewed and approved for transmittal by:

A handwritten signature in black ink, appearing to read "Daniel Hegg".

Daniel Hegg, M.Sc. CEM
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Attachment: Attachment A Verification Procedure
Attachment B Data Request Table

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Attachment A

Verification Procedure

Initial Planned Verification Procedures

Line Item	Inherent Risk	Control Risk	Detection Risk	Attribute	Type of Verification Procedure	Description of Procedure and Sampling
Overall Reported Assertion	<p>Medium – this is not the first year of reporting. However, the GHG, water and energy assertion for 2017 consists of 173 facilities spread across the world, with various emission sources and technologies. Some facilities are excluded from certain metric/reporting program boundaries.</p> <p>Stantec has not yet received the entire 2017 data set for this verification (only January – September 2017 energy data has been provided).</p>	<p>Medium – this is not the first year of reporting; GM has undergone previous verification of GHG emissions and reporting to CDP. Two data management systems support the activity data used within the line items below. However, controls around the quantification and the GMR2 (waste data management system) are unclear.</p>	<p>Low - Stantec will perform sufficient verification procedures to provide a limited level of assurance statement.</p>	Completeness	Test of detail – inspection, inquiry	<ul style="list-style-type: none"> Inspect GHG Inventory Management Plan (or similar document) for compliance with program criteria. Assess the reporting boundary for completeness, transparency and compliance with reporting program/criteria.
				Accuracy	Test of detail – inspection, inquiry	<ul style="list-style-type: none"> Inspect that all recorded totals are accurately and transparently reported
				Consistency	Test of detail – inspection, inquiry	<ul style="list-style-type: none"> Assess for changes in the reporting boundary that would necessitate restating the base year.
Scope 1 - Stationary Combustion – Natural Gas	<p>Medium – well known technology and operation is not complicated. Invoices are from third party providers. Invoices have not yet been provided. Supporting documents may not be in English.</p>	<p>Low –GM has a data management system for the collection of activity data that is subject to financial audits.</p>	<p>Low - Stantec can trace natural gas data and perform trend analysis to detect anomalies.</p> <p>Stantec can perform verification procedures to confirm consistency of methodologies.</p>	Completeness	Test of detail – inspection, reconciliation	<ul style="list-style-type: none"> Inquire on data aggregation and quality assurance and control procedures.
				Accuracy	<p>Test of detail – inquiry, inspection, tracing, recalculation</p> <p>Test of control - analytical test – correlation, profile</p>	<ul style="list-style-type: none"> Request invoices consumption data for three months of the year for the top highest natural gas consuming facilities (the facilities which, in combination, represent 50% of emissions from natural gas consumption). Sample annual consumption data or three months of the year for selected facilities. Recalculate all annual natural gas emissions.
				Cut-off	Test of detail – inspection	<ul style="list-style-type: none"> For the samples examined, confirm dates of data are accurate, complete, and only 2017 data has been incorporated into the emissions calculations.
				Consistency	Test of detail – inquiry, inspection	<ul style="list-style-type: none"> Assess whether quantification and aggregation methodologies are consistent with previous periods and baseline.
Scope 1 - Stationary Combustion – Coke, Fuel Oil, Diesel, Propane	<p>Medium – well known technology and operation is not complicated (metered consumption or invoices). Invoices and meter data have not yet been provided. Calibration records have not yet been obtained.</p>	<p>Low – unknown how consumption is measured, however total emissions from these sources are low.</p>	<p>Low – Stantec can trace data and perform trend analysis to detect anomalies.</p> <p>Stantec can perform verification procedures to confirm consistency of methodologies.</p> <p>Select calibration records can be requested.</p>	Completeness	Test of detail – inspection, reconciliation	<ul style="list-style-type: none"> Inquire on data aggregation and quality assurance and control procedures.
				Accuracy	<p>Test of detail – inquiry, inspection, tracing, recalculation</p> <p>Test of control - analytical test – correlation, profile</p>	<ul style="list-style-type: none"> Review invoices or metered data for highest consumer of each fuel type (coke, oil, diesel, landfill gas, and propane). Recalculate annual stationary combustion emissions for the top highest contributor for each stationary combustion source category
				Cut-off	Test of detail – inspection	<ul style="list-style-type: none"> For the samples selected, confirm dates of data are accurate, complete, and only 2017 data has been

Initial Planned Verification Procedures

Line Item	Inherent Risk	Control Risk	Detection Risk	Attribute	Type of Verification Procedure	Description of Procedure and Sampling
						incorporated into the emissions calculations.
				Consistency	Test of detail – inquiry, inspection	<ul style="list-style-type: none"> Assess whether quantification and aggregation methodologies are consistent with previous periods and baseline.
Scope 1 – Process emissions (Limestone CO ₂)	Medium – well known technology and operation is not complicated (metered consumption) Raw data has not yet been provided.	Low –total emissions from these sources are low.	Low – Stantec can trace data and perform trend analysis to detect anomalies. Stantec can perform verification procedures to confirm consistency of methodologies.	Completeness	Test of detail – inspection, reconciliation	<ul style="list-style-type: none"> Inquire on data aggregation and quality assurance and control procedures.
				Accuracy	Test of detail – inquiry, inspection, tracing, recalculation Test of control - analytical test – correlation, profile	<ul style="list-style-type: none"> Review metered data for highest contributor of process emissions. Recalculate annual process emissions for the highest contributor.
				Cut-off	Test of detail – inspection	<ul style="list-style-type: none"> For the samples selected, confirm dates of data are accurate, complete, and only 2017 data has been incorporated into the emissions calculations.
				Consistency	Test of detail – inquiry, inspection	<ul style="list-style-type: none"> Assess whether quantification and aggregation methodologies are consistent with previous periods and baseline.
Scope 2 - Electricity Use	Medium – well known technology and operation is not complicated. Invoices are from third party providers. Invoices have not yet been provided.	Low –GM has a system for the collection of consumption information.	Low - Stantec can trace electricity data and perform trend analysis to detect anomalies. Stantec can perform verification procedures to confirm consistency of methodologies.	Completeness	Test of detail – inspection, reconciliation	<ul style="list-style-type: none"> Inquire on data aggregation and quality assurance and control procedures.
				Accuracy	Test of detail – inquiry, inspection, tracing, recalculation Test of control - analytical test – correlation, profile	<ul style="list-style-type: none"> Review electricity invoices for three months of the year for the top highest electricity consuming facilities (the facilities which, in combination, represent 50% of emissions from electricity consumption). Sample annual consumption data for three months of the year for selected facilities. Recalculate all annual electricity emissions.
				Cut-off	Test of detail – inspection	<ul style="list-style-type: none"> For the samples selected, confirm dates of data are accurate, complete, and only 2017 data has been incorporated into the emissions calculations.
				Consistency	Test of detail – inquiry, inspection	<ul style="list-style-type: none"> Assess whether quantification and aggregation methodologies are consistent with previous periods and baseline.
Scope 2 - Purchased Steam and Delivered Heat	Medium – well known technology and operation is not complicated (metered consumption or invoices). Invoices and/or meter data have not yet been provided.	Low –total emissions from these sources are low.	Low – Stantec can trace data and perform trend analysis to detect anomalies. Stantec can perform verification procedures to confirm consistency of methodologies.	Completeness	Test of detail – inspection, reconciliation	<ul style="list-style-type: none"> Inquire on data aggregation and quality assurance and control procedures.
				Accuracy	Test of detail – inquiry, inspection, tracing, recalculation	<ul style="list-style-type: none"> Review invoices/metered consumption data for highest user of purchased steam.

Initial Planned Verification Procedures

Line Item	Inherent Risk	Control Risk	Detection Risk	Attribute	Type of Verification Procedure	Description of Procedure and Sampling
					Test of control - analytical test – correlation, profile	<ul style="list-style-type: none"> Review invoices/metered consumption data for facility with highest delivered heat. Recalculate annual purchased steam and delivered heat emissions for the sample selected.
				Cut-off	Test of detail – inspection	<ul style="list-style-type: none"> For the sample selected, confirm dates of data are accurate, complete, and only 2017 data has been incorporated into the emissions calculations.
				Consistency	Test of detail – inquiry, inspection	<ul style="list-style-type: none"> Assess whether quantification and aggregation methodologies are consistent with previous periods and baseline.
Scope 3 – Use of Sold Products (Mobile Combustion Emissions)	Medium – Emissions are based on a number of assumptions (average vehicle lifetime, average annual kilometres driven), and these assumptions and data have yet to be provided. Quantification is relatively straightforward.	Low –GM has a system for data collection.	Low - Stantec can trace assumptions and vouch source data. Stantec can re-perform quantification and confirm consistency of methodologies.	Completeness	Test of detail – inspection, reconciliation	<ul style="list-style-type: none"> Inquire on data aggregation and quality assurance and control procedures.
				Accuracy	Test of detail – inquiry, inspection, tracing, recalculation Test of control - analytical test – correlation, profile	<ul style="list-style-type: none"> Recalculate annual emissions from a selection of regions. Vouch select emission factors and source of various assumptions relating to lifetime kilometres driven.
				Cut-off	Test of detail – inspection	<ul style="list-style-type: none"> Confirm dates of data are accurate, complete, and only 2017 data has been incorporated into the emissions calculations.
				Consistency	Test of detail – inquiry, inspection	<ul style="list-style-type: none"> Assess whether quantification and aggregation methodologies are consistent with previous periods and baseline.
Scope 3 – Purchase and Use of Goods and Services / Capitol Goods	Medium – Unknown how the purchase and use of goods and services/capitol goods is tracked. Data has not yet been provided.	Low –GM has a system for data collection.	Low - Stantec can trace data and perform trend analysis to detect anomalies. Stantec can perform verification procedures to confirm consistency of methodologies.	Completeness	Test of detail – inspection, reconciliation	<ul style="list-style-type: none"> Inquire on data aggregation and quality assurance and control procedures.
				Accuracy	Test of detail – inquiry, inspection, tracing, recalculation Test of control - analytical test – correlation, profile	<ul style="list-style-type: none"> Recalculate annual emissions from the purchase and use of goods and services/capitol for the top highest facilities which, in combination, represent 50% of emissions from this source category.
				Cut-off	Test of detail – inspection	<ul style="list-style-type: none"> Confirm dates of data are accurate, complete, and only 2017 data has been incorporated into the emissions calculations.
				Consistency	Test of detail – inquiry, inspection	<ul style="list-style-type: none"> Assess whether quantification and aggregation methodologies are consistent with previous periods and baseline.
Energy Use (MWh)		Low – Control Risk is assessed above.	Low - Aggregation can be easily conducted.	Completeness	n/a	<ul style="list-style-type: none"> n/a – rely on above
				Accuracy	Test of detail – recalculation	<ul style="list-style-type: none"> Recalculate energy use.

Initial Planned Verification Procedures

Line Item	Inherent Risk	Control Risk	Detection Risk	Attribute	Type of Verification Procedure	Description of Procedure and Sampling
	Low – simple aggregation of Scope 1 and Scope 2 emissions as identified above.			Cut-off	n/a	<ul style="list-style-type: none"> n/a – rely on above
				Consistency	n/a	<ul style="list-style-type: none"> n/a – rely on above
Year Over Year Performance- Global Energy	Low – one calculation for inputs that are verified above.	Low – GM has a sufficient system in place, compounded by low complexity.	Low – two parameters and one calculation are easy to reproduce by Stantec.	Accuracy	Test of detail – recalculation	<ul style="list-style-type: none"> Recalculate year over year metric
Year Over Year Performance - Water	Low – one calculation for inputs that are verified above.	Low – GM has a sufficient system in place, compounded by low complexity.	Low – two parameters and one calculation are easy to reproduce by Stantec.	Accuracy	Test of detail – recalculation	<ul style="list-style-type: none"> Recalculate year over year metric
Year Over Year Performance - GHG Emissions	Low – one calculation for inputs that are verified above.	Low – GM has a sufficient system in place, compounded by low complexity.	Low – two parameters and one calculation are easy to reproduce by Stantec.	Accuracy	Test of detail – recalculation	<ul style="list-style-type: none"> Recalculate year over year metric
Water Use	To be determined	To be determined	To be determined	Accuracy	Test of detail –recalculation	<ul style="list-style-type: none"> Conduct a trend analysis for water use year over year to determine potential anomalies. Trace water metering records for the top facilities which, in combination, represent 50% of GM's total water use Review calibration records, if applicable (randomly chosen) Recalculate annual water use
				Consistency	Test of detail - inspection	<ul style="list-style-type: none"> Consistent facilities and consumption metrics
				Completeness	Test of detail - inspection	<ul style="list-style-type: none"> Assess completeness of inventory
				Cut-off	Test of detail - inspection	<ul style="list-style-type: none"> Inspect that consumption is relevant for 2017 and doesn't contain 2016 or 2018 data
				Transparency	Test of detail - inspection	<ul style="list-style-type: none"> Is reporting sufficiently transparent
Waste	Medium – relatively simple parameters, however there are numerous facilities spread across the world with various sources.	Medium – GM has a data management system for the collection of waste information and quality control procedures are currently unknown.	Low - Stantec can trace waste data and perform trend analysis to detect anomalies. Stantec can perform verification procedures to confirm consistency of methodologies.	Accuracy	Test of detail –recalculation	<ul style="list-style-type: none"> Conduct a trend analysis for waste year over year to determine potential anomalies. Trace waste records for the top facilities which, in combination, represent 50% of GM's total waste production Recalculate annual waste
				Consistency	Test of detail - inspection	<ul style="list-style-type: none"> Consistent facilities and waste metrics
				Completeness	Test of detail - inspection	<ul style="list-style-type: none"> Assess completeness of inventory
				Cut-off	Test of detail - inspection	<ul style="list-style-type: none"> Inspect that waste data is relevant for 2017 and doesn't contain 2016 or 2018 data
				Transparency	Test of detail - inspection	<ul style="list-style-type: none"> Is reporting sufficiently transparent
Global Production	To be determined	To be determined	To be determined	Accuracy	Test of detail – recalculation	<ul style="list-style-type: none"> Conduct a trend analysis for production year over year to determine potential anomalies.

Initial Planned Verification Procedures

Line Item	Inherent Risk	Control Risk	Detection Risk	Attribute	Type of Verification Procedure	Description of Procedure and Sampling
						<ul style="list-style-type: none"> Trace production records for the top facilities which, in combination, represent 50% of GM's total production Recalculate total production
				Consistency	n/a – rely on above procedures	<ul style="list-style-type: none"> n/a – rely on above
				Completeness	n/a – rely on above procedures	<ul style="list-style-type: none"> n/a – rely on above
				Cut off	n/a – rely on above procedures	<ul style="list-style-type: none"> n/a – rely on above
				Transparency	Test of detail - inspection	<ul style="list-style-type: none"> Is reporting sufficiently transparent
GRI 302 – Energy	Low – simple aggregation of Scope 1 and Scope 2 emissions as identified above.	Low – Control Risk is assessed above.	Low - Aggregation can be easily conducted.	Accuracy	Test of detail –inspection	<ul style="list-style-type: none"> Compare metric to energy as verified above.
GRI 303 - Water	Low – simple aggregation of water as identified above.	Low – Control Risk is assessed above.	Low - Aggregation can be easily conducted.	Accuracy	Test of detail –inspection	<ul style="list-style-type: none"> Compare metric to water as verified above.
GRI 305 Emissions	Low – activity data assessed above and well-established emission factors.	Low –GM has an established data management system for the collection of fuel use/energy consumption information (GMR2100).	Low - Stantec can trace data and perform trend analysis to detect anomalies. Stantec can perform verification procedures to confirm consistency of methodologies.	Accuracy	Test of detail –recalculation	<ul style="list-style-type: none"> Rely on Scope 1 & 2 verification above Vouch emission factors Sample calculations for select parameters
				Consistency	Test of detail - inspection	<ul style="list-style-type: none"> Consistent facilities and consumption metrics
				Completeness	Test of detail - inspection	<ul style="list-style-type: none"> Assess completeness of inventory
				Cut-off	Test of detail - inspection	<ul style="list-style-type: none"> Inspect that emissions values are for 2017 and don't contain 2016 or 2018 data
				Transparency	Test of detail - inspection	<ul style="list-style-type: none"> Is reporting sufficiently transparent
GRI 306 Effluents and Waste	Medium – relatively simple parameters, however there are numerous facilities spread across the world with various sources.	Medium – GM has a data management system for the collection of waste information and quality control procedures are currently unknown.	Low - Stantec can trace waste data and perform trend analysis to detect anomalies. Stantec can perform verification procedures to confirm consistency of methodologies.	Accuracy	Test of detail –recalculation	<ul style="list-style-type: none"> Rely on waste verification above Sample select effluent data
				Consistency	Test of detail - inspection	<ul style="list-style-type: none"> Consistent facilities and consumption metrics
				Completeness	Test of detail - inspection	<ul style="list-style-type: none"> Assess completeness of inventory
				Cut-off	Test of detail - inspection	<ul style="list-style-type: none"> Inspect that waste values are for 2017 and don't contain 2016 or 2018 data
				Transparency	Test of detail - inspection	<ul style="list-style-type: none"> Is reporting sufficiently transparent



March 6, 2018
Anna M. Prodin, Manager – GM 2100

Attachment B

Data Request Table

Item N°	Information Requested	Request Date	Obtained On
1	Verification reports & statements - GHG & Energy (2014, 2015, 2016)	1/29/2018	1/30/2018
2	Verification reports & statements - Water (2014, 2015, 2016)	1/29/2018	1/30/2018
3	Verification reports & statements - Scope 3 (2014, 2015, 2016)	1/29/2018	1/30/2018
4	Verification reports & statements - Waste (2014, 2015, 2016)	1/29/2018	
5	Historical data summaries - GHG & Energy (2014, 2015, 2016)	1/29/2018	1/30/2018
6	Historical data summaries - Water (2014, 2015, 2016)	1/29/2018	1/30/2018
7	Historical data summaries - Scope 3 (2014, 2015, 2016)	1/29/2018	2/1/2018
8	Historical data summaries - Waste (2014, 2015, 2016)	1/29/2018	1/30/2018
9	Summary of baseline year GHG emissions, water use assertions, waste assertions and Scope 3 assertions, including verification reports if available.	2/8/2018	
10	Complete list of GM Global facilities in 2017, including any facilities that were not included in environmental reporting.	2/8/2018	
11	2017 GHG/energy calculation spreadsheets for GM Global Facilities, including a complete facility list and summary/breakdown of GHG emissions by scope and by facility.	1/29/2018	2/19/2018
12	2017 water assertion spreadsheets for GM Global Facilities, including a complete facility list and summary/breakdown of water use by facility.	1/29/2018	
13	2017 waste assertion spreadsheets for GM Global Facilities, including a complete facility list and summary/breakdown of waste by facility.	1/29/2018	
14	2017 Scope 3 calculation spreadsheets for GM Global Facilities, including a complete facility list and summary/breakdown of emissions by facility.	1/29/2018	
15	2017 global production data (vehicles produced and reported), and an explanation of how this is calculated.	1/29/2018	
16	GHG inventory & environmental indicators management plan, GHG inventory management plan, or a similar document that summarizes the calculations, methodologies, sources of emission factors and other calculation inputs, data management, quality management systems, etc.	1/29/2018	
17	Description of changes to quantification methodologies and reporting boundaries between 2016 and 2017 and since the baseline (if any).	2/8/2018	
18	Description of mergers, acquisitions, or divestitures which occurred in 2017.	2/8/2018	
19	Description of changes to geographical and/or organizational boundaries between 2016 and 2017 and since the baseline (if any).	2/8/2018	
20	Description of GM's organizational boundaries - e.g. financial control, operational control etc.	2/8/2018	
21	Description of the GMR2011 and GMR2 systems including how data is collected and incorporated into the systems, what quality assurance quality controls are used, etc.	2/8/2018	2/19/2018
22	Clarification on whether GM Opel-Vauxhall is included in GM's Global Operations for 2017.	2/8/2018	
23	Complete list of 2017 assertions on all GHGs and environmental parameters.	3/5/2018	
24	Provide 2017 monthly natural gas invoices or metered data for the following facilities: <ul style="list-style-type: none"> • WENTZVILLE ASSEMBLY COMPLEX • OSHAWA AUTOPLEX • FORT WAYNE ASSEMBLY 	3/5/2018	

Item N°	Information Requested	Request Date	Obtained On
	<ul style="list-style-type: none"> • FLINT SOUTH COMPLEX • BUPYEONG COMPLEX • TOLUCA COMPLEX • DEFIANCE FOUNDRY • WARREN TECHNICAL CENTER CAMPUS • ARLINGTON ASSEMBLY • LORDSTOWN ASSEMBLY • SILAO COMPLEX • LANSING DELTA TWP ASMBLY CPX • SAGINAW METAL CASTING FOUNDRY • SGM-WUHAN 		
25	<p>Provide calibration certificates for natural gas meters, owned and operated by the facility, for the following facilities (if these meters are operated by a third party, calibration certificates are not required):</p> <ul style="list-style-type: none"> • GMVM LIUZHOU WEST ASSEMBLY • SGMW-Baojun Assembly • GMVM LIUZHOU EAST ASSEMBLY 	3/5/2018	
26	<p>Provide 2017 monthly invoices or metered data for the following:</p> <ul style="list-style-type: none"> • JOINVILLE facility: Propane consumption • HANOI ASSEMBLE facility: Diesel consumption • QUITO ASSEMBLY facility: Oil consumption • Defiance Foundry facility: Coke consumption 	3/5/2018	
27	<p>Provide calibration certificates for the following, if applicable:</p> <ul style="list-style-type: none"> • JOINVILLE facility: Propane consumption • HANOI ASSEMBLE facility: Diesel consumption • QUITO ASSEMBLY facility: Oil consumption • Defiance Foundry facility: Coke consumption (weigh scale, if applicable) 	3/5/2018	
28	<p>Emissions from landfill gas were not reported in 2016. In the 2017 data spreadsheets (documents [10] and [11a]), landfill gas consumption is listed, however the factors are set to zero and therefore GHG emissions are zero. Please confirm whether emissions (biogenic CO₂, Scope 1 CH₄, and Scope 1 N₂O) from landfill gas are included in the 2017 GHG inventory.</p>	3/5/2018	
29	<p>Provide 2017 monthly electricity invoices or metered data for the following facilities:</p> <ul style="list-style-type: none"> • SGM-WUHAN • WARREN TECHNICAL CENTER CAMPUS • FLINT SOUTH COMPLEX • WENTZVILLE ASSEMBLY COMPLEX • JINQIAO NORTH COMPLEX • SPRING HILL ASSEMBLY COMPLEX • SILAO COMPLEX • ARLINGTON ASSEMBLY • NORSOM 3 COMPLEX • MILFORD PROVING GROUNDS • JINQIAO CADILLAC • DEFIANCE FOUNDRY • BUPYEONG COMPLEX • FAIRFAX ASSEMBLY COMPLEX • LANSING DELTA TWP ASMBLY CPX • Pontiac North Complex • GMVM QINGDAO ASSEMBLY • FORT WAYNE ASSEMBLY 	3/5/2018	

Item N°	Information Requested	Request Date	Obtained On
30	Provide calibration certificates for electricity meters owned and operated by the facility, for the following facilities (if these meters are operated by a third party, calibration certificates are not required) for the following facilities: <ul style="list-style-type: none"> • GMVM QINGDAO ASSEMBLY • GMVM Dongyue South Assembly • Dongyue Complex GMVM Dongyue North Assembly 	3/5/2018	
31	Provide 2017 monthly purchased steam invoices or metered data for HAMTRAMCK ASSEMBLY.	3/5/2018	
32	Provide 2017 monthly delivered heat invoices or metered data for TOGLIATTI ASSEMBLY.	3/5/2018	

**VERIFICATION REPORT – 2017 GREENHOUSE GAS ASSERTIONS AND ENVIRONMENTAL
PERFORMANCE METRICS**

GENERAL MOTORS – SUSTAINABLE WORKPLACES

OCTOBER 19, 2018

Appendix C – Verification Statement

Statement of Verification

Introduction

Stantec Consulting Ltd. (Stantec) was contracted by General Motors Company (GM) to conduct an independent third-party verification of a selection of greenhouse gas (GHG) Assertions and Environmental Performance Metrics for their Global Facilities.

In this work, GM was responsible for the collection of activity data used in the calculations, data management, and completion of the calculations.

Stantec was responsible for planning and executing the verification to deliver an opinion to a limited level of assurance as to whether the GHG assertions and environmental performance metrics are presented fairly and in accordance with the verification criteria. Stantec is accredited with the American National Standards Institute (ANSI), a member of the International Accreditation Forum (IAF), in accordance with ISO 14065 (Accreditation ID #0805 issued to Stantec Consulting Ltd. for greenhouse gas (GHG) verification and validation).

Intended User

The results of the verification will be used by GM for internal and external sustainability reporting, and for reporting to CDP. The users of this statement are GM, shareholders and the public.

Verification Objective

The objective of the verification was to assess whether the GHG Assertions and Environmental Performance Metrics (as presented in Table 1) for GM's 2017 operations are accurately prepared in accordance with appropriate criteria.

Verification Boundaries

The boundaries of the verification include GM owned and operated facilities within General Motors North America (GMNA), General Motors South America (GMSA) and General Motors International Operations (GMIO). A subset of these facilities have been excluded from the GHG Assertion and Environmental Performance Metrics due to unavailability of data, and a list of these excluded facilities has been provided to Stantec.

Reporting Period

The verification was conducted for the period of January 1, 2017 to December 31, 2017.

GHG Assertions and Environmental Performance Metrics

The GHG Assertions and Environmental Performance Metrics are provided in Table 1.

Table 1. General Motors Global Facilities - 2017 GHG Assertions and Environmental Performance Metrics

Parameter	Assertion	Metric
Scope 1 & 2 GHG Emissions	6,231,850	tonnes of carbon dioxide equivalent (tCO ₂ e)
Scope 1 Direct	1,659,116	tCO ₂ e
Scope 2 Indirect	4,572,733	tCO ₂ e
Scope 3 GHG Emissions	271,796,259	tCO ₂ e
Category 1 Purchased Goods & Services	46,174,073	tCO ₂ e
Category 2 Capital Goods	4,596,326	tCO ₂ e
Category 3 Fuel & Energy Related Activities	354,560	tCO ₂ e
Category 11 Use of Sold Product	220,671,300	tCO ₂ e
Total Energy Consumption	17,425,068	MWh
Total Water Withdrawal	37,493,216	m ³
Total Waste	2,441,163	US tons
Year over year performance Scope 1 & 2 GHG emissions	11.7% decrease between 2016 and 2017	%
Year over year performance Total Energy Use	4.3% decrease between 2016 and 2017	%
Year over year performance Total Water Use	0.4% decrease between 2016 and 2017	%
GRI 302-1 Total Energy Use	17,425,068	MWh
GRI 303-1 Total Water Use	37,493,216	m ³
GRI 305-1 Total Scope 1 GHG Emissions (Location-Based)	1,659,116	tCO ₂ e
GRI 305-2 Total Scope 2 GHG Emissions	4,572,733	tCO ₂ e
GRI 305-3 Total Scope 3 GHG Emissions	271,796,259	tCO ₂ e
GRI 306-2 Total Waste	2,441,163	US tons

Verification Criteria

Stantec has conducted sufficient and appropriate procedures to express a **limited level of assurance** opinion as to whether the GHG Assertions and Environmental Performance Metrics for 2017 as quantified by GM satisfy the requirements of the following criteria:

- ISO 14064 Greenhouses Gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals, 2006;
- World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD), *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (Revised Edition), March 2004;
- WRI/WBCSD, Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard;
- WRI/WBCSD, GHG Protocol Scope 2 Guidance: An Amendment to the GHG Corporate Standard;
- CDP Guidance for the 2017 reporting year (CDP Guidance); and
- GRI Sustainability Reporting Guidelines (2011).

Verification Standards

The verification was conducted in accordance with ISO14064:3, the AA1000 AccountAbility Principles Standard (2008) and Stantec's Standard Operating Procedures developed for accreditation to ISO 14065.

Verification Opinion

Based on the processes and procedures completed, there is no evidence that GM's stated GHG Assertions and Environmental Performance Metrics for the 2017 calendar year are not, in all material respects, fairly stated in accordance with the criteria noted herein.

Verifier's Independence, Impartiality, and Competence

Stantec provides this conclusion as an independent verifier. Prior to entering into an assurance agreement Stantec assesses for any real, potential, or perceived conflict. Stantec continues to monitor for compromised impartiality throughout the engagement.

Stantec provides this statement to GM in accordance with our terms of agreement. We consent to its public release. Because of the inherent limitations in any verification, Stantec accepts no responsibility by use of a third party. Stantec has undertaken all assignments in its role as an environmental engineering consulting firm using professional effort consistent with ISO 14064:3. Stantec has assessed the 2017 GHG Assertion and Environmental Performance Metrics for GM Global Facilities using reasonably ascertainable information. The assessment represents the conditions in the subject area at the time of the assessment. Stantec did not conduct direct GHG emissions monitoring or other environmental sampling and analysis in conjunction with this verification statement.

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