

C0. Introduction

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C0.1

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**(C0.1) Give a general description and introduction to your organization.**

Celestica is a publicly held corporation traded on both the New York and Toronto stock exchanges with 2018 revenue of US\$6.6 billion. Headquartered in Toronto, Canada, Celestica operates in over 30 worldwide locations spanning Asia, the Americas and Europe.

Celestica employs approximately 28,000 permanent and temporary (contract) employees and 5,100 third-party contractors.

Our operations' facilities around the world specialize in supply chain management (SCM), including high-mix/low-volume manufacturing capabilities, to meet specific market and customer requirements. In an effort to drive speed, quality and flexibility for our customers, we execute our business in Centers of Excellence strategically located throughout our global network.

Celestica delivers innovative supply chain solutions globally to customers in the following end markets: Advanced Technology Solutions (comprised of consumer, industrial, aerospace and defense, healthcare, smart energy and semiconductor equipment) and Connectivity and Cloud Solutions (comprised of enterprise communications, telecommunications, servers and storage).

We offer a range of services to our customers, including design and development; engineering services; supply chain management; new product introduction; component sourcing; electronics manufacturing; assembly and test; complex mechanical assembly; systems integration; precision machining; order fulfillment; logistics; and after-market services.

Technology is driving advancements that are revolutionizing the way we live and work. Our end-to-end product lifecycle solutions support the most complex products across multiple markets. This results in lower total cost of ownership, greater flexibility and improved competitive advantage for our customers in their respective markets.

C0.2

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**(C0.2) State the start and end date of the year for which you are reporting data.**

|       | Start date     | End date         | Indicate if you are providing emissions data for past reporting years | Select the number of past reporting years you will be providing emissions data for |
|-------|----------------|------------------|---|--|
| Row 1 | January 1 2018 | December 31 2018 | No  | <Not Applicable>   |

C0.3

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**(C0.3) Select the countries/regions for which you will be supplying data.**

- Canada
- China
- Ireland
- Japan
- Laos, People's Democratic Republic of
- Malaysia
- Mexico
- Republic of Korea
- Romania
- Singapore
- Spain
- Thailand
- United States of America

C0.4

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**(C0.4) Select the currency used for all financial information disclosed throughout your response.**

USD

C0.5

**(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.**

Operational control

C1. Governance

C1.1

**(C1.1) Is there board-level oversight of climate-related issues within your organization?**

No

C1.1c

**(C1.1c) Why is there no board-level oversight of climate-related issues and what are your plans to change this in the future?**

|       | Primary reason  | Board-level oversight of climate-related issues will be introduced within the next two years | Please explain   |
|-------|---|--|--|
| Row 1 | When Celestica first launched a formal corporate sustainability team, the board of directors had been involved in decisions. Once the program became established, the board only requested updates as needed. | Yes, we plan to do so within the next two years  | Board level oversight is currently obtained by way of senior management (our Chief Operating Officer (COO) and Chief Legal and Administrative Officer (CLAO)) reporting to our Board of Directors (Board) on key risk items as they arise. Those risks are logged from multiple sources, including our quarterly Compliance Council, our annual global Risk Assessment, and our quarterly securities filings. While that ad hoc reporting will continue as issues arise, we intend to introduce more formal, regular reporting on climate-related and other sustainability issues to our Board as standard reporting items in the next two years. The impact of climate-related issues on our business is becoming more apparent, and is a topic of increasing focus for our customers and suppliers. In order to anticipate and mitigate the effects of severe climate-related issues, the corporate sustainability team considers it appropriate to brief, and seek guidance from, our Board on a more frequent basis. |

C1.2

**(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.**

| Name of the position(s) and/or committee(s)                                    | Responsibility  | Frequency of reporting to the board on climate-related issues |
|--|---|---|
| Other C-Suite Officer, please specify (Chief Legal and Administrative Officer) | Both assessing and managing climate-related risks and opportunities | Less frequently than annually                                 |

C1.2a

**(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).**

Celestica's sustainability initiative is led by the Senior Vice President, Legal and Sustainability (SVP). This role is responsible for driving the sustainability strategy, leading a Corporate Sustainability team of 4 employees, and overseeing all issues related to sustainability at Celestica. The SVP is the head of our global Compliance function and is chair of our Compliance Council. The SVP is formally apprised of climate-related risks by all key functional areas of the business (Operations, Supply Chain, Finance, Human Resources, Information Technology, Internal Audit, Global Business Services, M&A/Integration) during our quarterly Compliance Council reporting process. Climate related risks are also assessed for materiality by the SVP and other senior executives as part of our quarterly securities filings. Climate-related risk is objectively assessed by our Internal Audit team as part of our annual global Risk Assessment process, in consultation with the SVP. The SVP reports directly to the Executive Vice President, Chief Legal and Administrative Officer.

In addition, sustainability updates are provided on a quarterly basis to Celestica's Chief Operating Officer (COO) who assesses and manages Celestica's climate-change risks and opportunities. During these updates, discussions focus on our sustainability strategy and the progress we are making on our metrics. Input received in these quarterly update meetings also help to shape the strategy. Our COO is the key decision maker and is in the best position to identify the associated climate risks and opportunities within Celestica's operations, which account for the largest amount of employees.

Furthermore, there are sustainability representatives at each of our locations who are responsible for driving initiatives at their sites and communicating with the Corporate Sustainability team. These representatives report on progress towards Celestica's sustainability related Aspirational Goals by tracking their monthly sustainability metrics, discussing ideas for future initiatives, and sharing knowledge with other facilities. This information cascades up through the Corporate Sustainability team to the Senior Vice President, Legal and Sustainability and to the Chief Operating Officer.

### C1.3

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**(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?**

Yes

### C1.3a

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**(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).**

**Who is entitled to benefit from these incentives?**

Other C-Suite Officer

**Types of incentives**

Monetary reward

**Activity incentivized**

Emissions reduction target

**Comment**

Our Celestica Team Incentive program links year-end bonuses to meeting personal and company objectives. Celestica's Corporate Sustainability team reports to the Senior Vice President, Legal and Sustainability, who reports to the Chief Legal and Administrative Officer. A key performance metric for our Chief Legal and Administrative Officer is that she effectively manages our sustainability program and achieves our sustainability gameplan. Part of the overall sustainability initiative includes a medium term sustainability goal to reduce GHG emissions by 30% by 2020 from 2012 levels.

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**Who is entitled to benefit from these incentives?**

All employees

**Types of incentives**

Monetary reward

**Activity incentivized**

Efficiency project

**Comment**

In 2018, Celestica had a recognition award program called "The Ignition Awards" which includes a monetary component. Celestica's Ignition Awards program recognizes individuals and teams who go above and beyond in driving business results, supporting our growth and making Celestica a great place to work. Included in Celestica's Ignition Awards is the "Spark Change" award that honours an individual or team who has driven significant improvements in sustainability and made a positive impact at their site and in their community. It also honours those who drive towards Celestica's Aspirational Sustainability Goals, which are outlined in our Sustainability Report. Among the criteria for nominations are specific site GHG emission reduction targets, along with an explanation of how the award recipient met these targets. The Spark Change award is sponsored by the Senior Vice President, Legal & Sustainability, and a separate award is given in each of our 3 operating regions.

## C2. Risks and opportunities

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### C2.1

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**(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.**

|             | From (years) | To (years) | Comment   |
|-------------|--------------|------------|---|
| Short-term  | 0            | 3          |   |
| Medium-term | 3            | 10         |   |
| Long-term   | 10           |            | Celestica's long-term time horizon in sustainability matters is defined as anything that is 10 or more years. |

**C2.2**

**(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.**

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

**C2.2a**

**(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.**

|       | Frequency of monitoring        | How far into the future are risks considered? | Comment   |
|-------|--------------------------------|---|---|
| Row 1 | Six-monthly or more frequently | >6 years                                      | The Senior Vice President, Legal and Sustainability chairs our global Compliance Council and reports on material risks to the Chief Operating Officer (COO), Chief Legal and Administrative Officer (CLAO), and Chief Financial Officer (CFO) on a quarterly basis. The Senior Vice President, Legal and Sustainability ensures that our sustainability strategy is aligned and integrated into our overall corporate strategy and our global Compliance program. |

**C2.2b**

**(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.**

The corporate sustainability team is attentive to industry trends, events, and climate-related news. We continually monitor global macro trends as they relate to climate-related risks. We listen to our customers and suppliers through surveys, questionnaires, and meetings (i.e. face-to-face or regularly scheduled conference calls) and assess the available information for applicability to our organization. This information is then aggregated with our stakeholder engagement process to develop our materiality assessment that also aligns to our identified climate-related risk.

The Senior Vice President, Legal and Sustainability reviews and approves the sustainability strategy, messaging, and corporate sustainability goals. Members of the Executive Leadership Team then collaborate to cascade goals to their organizations. These issues are then integrated into the overall risk-mitigation process which covers Regulation, Physical Drivers and other Climate Risks.

**C2.2c**

**(C2.2c) Which of the following risk types are considered in your organization's climate-related risk assessments?**

|                     | Relevance & inclusion        | Please explain   |
|---------------------|------------------------------|--|
| Current regulation  | Relevant, always included    | Celestica is directly impacted by regulations and has plans in place to manage the risks. One such risk is a result of the EU Energy Efficiency Directive 2012/27/EU, which requires that large enterprises in the EU reduce overall emissions by 20% by 2020. In addition, it has also made energy audits mandatory in the EU for large enterprises as of December 2015. Celestica operates in 3 jurisdictions in the EU, including Ireland, Spain and Romania. As a result, these sites are required to comply with this legislation. Aligned with this, Celestica has launched a program where sites affected are covered by an energy management system (EnMS - ISO 50001). Celestica keeps up to date on existing regulations by participating in industry associations, continuing education programs for our technical and legal personnel, subscribing to proprietary regulatory update systems, and periodic updates by our external legal and technical advisors.  |
| Emerging regulation | Relevant, always included    | Our business and operations could be adversely impacted by emerging climate change regulation such as Cap & Trade regulations. Concern over climate change has led to international legislative and regulatory initiatives directed at limiting carbon dioxide and other greenhouse gas emissions. Proposed and existing efforts to address climate change by reducing greenhouse gas emissions could directly or indirectly affect our costs of energy, materials, manufacturing, distribution, packaging and other operating costs, which could adversely impact our business and financial results. We integrate potential emerging regulations into our risk and sustainability planning processes. We also regularly monitor certain regulatory changes that may affect our facilities, such as emissions trading schemes, as requirements are constantly changing within many of the countries we operate in. For example, we have previously assessed whether our manufacturing facilities in Ontario, Canada produced enough greenhouse gas emissions that mandated participation in the Ontario Cap & Trade system as it would have impacted our business operations. Other emerging carbon pricing regulations, such as a carbon tax, will also be continually monitored as it has already been put in place in the regions of our Ireland and Singapore facilities. Celestica keeps up to date on emerging regulations by participating in industry associations, continuing education programs for our technical and legal personnel, subscribing to proprietary regulatory update systems, and periodic updates by our external legal and technical advisors. |
| Technology          | Relevant, sometimes included | As technology continues to evolve at a rapid pace, technological risks are assessed, including specifically as it relates to our Smart Energy portfolio. Our production could be at risk as technology advancement is driving down costs and could limit the benefits to Celestica, although reducing the contributions to climate change. This was evident with our solar panel manufacturing production, where a global oversupply of solar panels adversely impacted the market price and challenged the viability of some of our customers. This type of technological advancement, although reducing global greenhouse gas emissions, created an adverse effect to Celestica.   |
| Legal               | Relevant, always included    | There are legal risks that may emerge due to climate-change. Legal risks and regulations are always considered, as we are compliant to all laws and regulations that exist in our global operations. One example is the reporting of additional greenhouse gas emissions in our Toronto site, such as VOCs, SOx, NOx, particulate matter, etc. This began as a climate-related risk that our Toronto site was required to report on, in order to abide by the law. Other examples include risks from tariffs (i.e. US steel tariffs), working hours regulations, and the EU Energy Efficiency Directive. Business interruption resulting from climate-related issues could result in legal disputes and claims involving Celestica, its customers, and our suppliers.  |
| Market              | Relevant, sometimes included | Increased focus on Scope 3 emissions from our customers is changing the business landscape to include more transparency in the supply chain. Celestica is committed to reporting in compliance with institutions such as the GRI and CDP. Many of our customers are mandating that we participate in these programs and incentivize us by adding points to their scorecards - the mechanism by which they judge their business partners. In some cases our customers are modifying their supplier scorecards to include climate change related initiatives. Failure to take appropriate actions to address climate change could impact future business awards for Celestica.   |
| Reputation          | Relevant, sometimes included | Celestica has acknowledged a global shift in customer preferences towards more transparency and to mitigate impacts on the environment. This creates a reputational risk for the company if we do not quickly react to these changing preferences of our customers. For example, one of our customers has increased their reporting on greenhouse gas emissions throughout their supply chain. We thus have made sure that our emissions reductions targets are stringent enough to fit within their goals, and provide them with the reporting that they need, to not degrade our relationship or reputation. There is also some risk if we are not seen as sustainability leaders in our industry. Assessments such as Corporate Knights and EcoVadis recognize Celestica as sustainability leaders. Failure to maintain our leadership position, or to demonstrate continuous improvement in these assessments in the future, could cause a reputational risk with our customers.   |
| Acute physical      | Relevant, sometimes included | Acute physical risks are assessed within our risk management strategy as part of our ongoing disaster recovery and business continuity planning. Where acute losses arise, they are addressed and reported immediately. Insurance companies contracted by Celestica assess these types of risks, such as floods and storm surges, in order to insure new or existing facilities. Our customers require periodic assurances regarding business continuity, sometimes by way of objective third party assessment. Acute physical risks may result in sudden, unanticipated costs for our business, such as higher operating expenses, and the need to make additional capital investments.   |
| Chronic physical    | Relevant, sometimes included | The potential and timing of chronic physical risks can be difficult to predict, and may arise gradually. These risks are included in decision-making processes proactively where possible, and reactively where clear patterns emerge after the onset of a chronic condition. This includes potential for changes in precipitation and weather patterns, rising mean temperatures, or rising sea levels. For example, a harsher winter in one of our sites in Ireland drove an increase in natural gas consumption to ensure suitable temperatures for our employees. Similarly, a warmer summer in one of our sites in Mexico required installation of more air conditioning units as the old systems were inefficient and also breaking down. Chronic physical risks result in unanticipated increased costs for our business, such as higher operating expenses, and the need to make additional capital investments. Insurance companies contracted by Celestica assess these types of risks, such as floods and cyclones, in order to get insurance on new or existing facilities. There is a risk that in the future we could experience a reduction in the availability of insurance to address specific chronic physical risks.  |
| Upstream            | Relevant, sometimes included | Upstream risks, such as the avoidance of conflict minerals, are part of our supplier risk assessment through the Responsible Business Alliance. Celestica has continued its focus on reporting scope 3 emissions to monitor greenhouse gas emissions in our supply chain, which includes our logistics emissions footprint. For example, Table-Top Exercises (TTEs) in our risk assessment have been tested for supply constraints, downtime and transportation/logistics issues due to severe weather, flooding, etc. This accounts for potential risks of delivering materials to Celestica. Through our supply chain assessment program, our approach ensures that our major suppliers honour the spirit of the Responsible Business Alliance Code of Conduct, aligning their management systems with the Code's requirements, which include environmental elements aimed at addressing climate-related risks like pollution prevention and resource reduction.   |
| Downstream          | Relevant, sometimes included | Celestica's downstream risks come from the activities of manufacturing and delivering products to our customers. For example, Table-Top Exercises (TTEs) in our risk assessment have been tested for transportation/logistics issues due to severe weather, flooding, etc. This accounts for potential risks of delivering products from Celestica to our customers. Some other areas in which we have focused on reducing climate change risks and how they are integrated into our risk management are by focusing resources and research on reducing electricity and developing IoT (Internet of Things) processes to monitor and automate electricity usage and reduce our consumption. For example, some of our sites have implemented IoT projects, lighting retrofits, replacing old production equipment (i.e. chillers) and have completed HVAC upgrades. In particular, our Monterrey, Mexico site implemented IoT and was able to find issues with their HVAC system. The site utilizes three 30 ton units for daily production, but it was later realized that using one 90 ton unit was much more efficient than three 30 ton units. This issue will be further resolved in 2019.   |

**C2.2d**

**(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.**

The Corporate Sustainability Team works with industry coalitions, such as the Responsible Business Alliance, academic partners, and NGOs, as well as suppliers and customers to identify climate change risks associated with our operations and to discover ways to reduce our impact on the environment. The Senior Vice President, Legal and Sustainability (SVP) communicates our strategy and risks that are identified to various stakeholders. The SVP is the head of our global Compliance function and is chair of our Compliance Council. The SVP is formally apprised of climate-related risks by all key functional areas of the business (Operations, Supply Chain, Finance, Human Resources, Information Technology, Internal Audit, Global Business Services, M&A/Integration) during our quarterly Compliance Council reporting process. Climate related risks are also assessed for materiality by the SVP and other senior executives as part of our quarterly securities filings. Climate-related risk is objectively assessed by our Internal Audit team as part of our annual global Risk Assessment process, in consultation with the SVP. The SVP works with our Internal Audit Corporate Risk team to integrate the necessary climate-related risk topics into Celestica's annual global risk assessment, reflecting the anticipated likelihood of occurrence and level of impact.

In addition, sustainability updates are provided on a quarterly basis to Celestica's Chief Operating Officer (COO), who assesses and manages Celestica's climate-change risks and opportunities. During these updates, discussions focus on our sustainability strategy and the progress we are making on our metrics. Input received in these quarterly update meetings also help to shape the strategy. Our COO is a key decision maker and is in the best position to identify the associated climate risks and opportunities within Celestica's operations, which account for the largest amount of employees.

Furthermore, the sustainability team works with functional groups throughout Celestica to integrate sustainability into Manufacturing Operations, Supply Chain, Finance, and Human Resources. This is done in a multi-disciplinary manner to embed sustainability into our corporate culture in a way that is meaningful and impactful. We set goals and targets for the business, such as greenhouse gas emissions reduction targets aimed at reducing our environmental impact, enhancing GHG emissions reporting and addressing the potential increase in the associated costs of GHG emissions.

We would like sustainability to be integrated into all aspects of the company. Each facility collects data that is assessed on their progress towards our sustainability goals (i.e. emissions reduction, waste diversion). The sustainability team then measures and manages the progress through quarterly meetings with leadership. We use our business continuity and disaster recovery planning processes to anticipate and avoid climate-related risks to our operations. Additionally, we obtain objective assessments regarding physical risks to our operations through our external consultants and insurance providers who assess facilities for acute physical risk such as extreme weather events, rising water levels, etc.

Within our supply chain, Celestica communicates our sustainability goals to our preferred suppliers and we collect data about their environmental impacts. We ensure that they are aware of and follow the Responsible Business Alliance compliance requirements, self-assessment questionnaires, and validated audits. We are committed to setting targets for our suppliers that measure their achievements in support of our sustainability Aspirational Goals, and incentivize their continuous improvement. Celestica sponsors a "Best Sustainability Partner" award as recognition to an outstanding member of our supply base during our supplier awards galas.

**C2.3**

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**(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?**

Yes

**C2.3a**

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**(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.**

**Identifier**

Risk 1

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type**

Transition risk

**Primary climate-related risk driver**

Policy and legal: Enhanced emissions-reporting obligations

**Type of financial impact**

Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

**Company- specific description**

Celestica is directly impacted by changes in regulations and has plans in place to manage the risks. One such risk is a result of the EU Energy Efficiency Directive 2012/27/EU which requires that large enterprises in the EU reduce overall emissions by 20% by 2020. In addition, it makes energy audits mandatory in the EU for large enterprises. Celestica operates in 3 jurisdictions in the EU (Ireland, Spain and Romania) that are required to comply with this legislation. As countries write this directive into their local laws the risks may change and there may be fines and further implications associated with noncompliance. At a minimum, each site is currently required to perform energy audits at a cost to Celestica.

**Time horizon**

Long-term

**Likelihood**

Virtually certain

**Magnitude of impact**

Medium

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

<Not Applicable>

**Potential financial impact figure – minimum (currency)**

0

**Potential financial impact figure – maximum (currency)**

50000

**Explanation of financial impact figure**

In order to comply with the EU Energy Efficiency Directive, each Celestica site in the EU will be required to perform energy audits, as a cost to Celestica, and there may be fines and the potential shutdown of our factories in the regions associated if they are not compliant. Each European site would have to reduce their emissions. As such, we have estimated the cost of performing energy audits and supplying one of our European sites with 100% renewable energy. Additionally, Celestica has opted to put forth a plan to certify its sites to ISO 50001:2011 or 2018 (Energy Management Systems) Standard.

**Management method**

In 2018, 9 (23%) of our sites were certified to ISO 50001:2011. We continue to focus on identifying methods to reduce energy consumption through ISO 50001 implementations and through projects targeting energy consumption/conservation from direct production equipment usage. Aligning to the ISO 50001 standard required Celestica to create a Global Energy Policy. This policy outlines our commitment to set energy performance objectives and targets, improve our energy performance, and support the purchase of efficient products.

**Cost of management**

90000

**Comment**

We will continue to monitor regulations and expand on our registration to the energy management standard given we realize the benefits for all of the company and not just those impacted by direct regulations. There will be annual costs associated with our ISO 50001 registrations which is used to manage potential risks. The costs range from \$2K- \$10K USD per EU site each year. Furthermore, there can be costs that exceed the payback (ROI) and savings to drive energy reduction projects that meet the mandatory targets.

**Identifier**

Risk 2

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type**

Physical risk

**Primary climate-related risk driver**

Acute: Increased severity of extreme weather events such as cyclones and floods

**Type of financial impact**

Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions)

**Company- specific description**

The estimated financial impact is subject to a number of variables including: the extent of the damages caused by catastrophic events to Celestica's own facilities, or to third party property such as utilities and other infrastructure; the duration of the event and its aftermath; insurance recoveries; the ability to meet our obligations through other, unaffected Celestica facilities or third party contractors. We note that Celestica's robust disaster recovery processes have allowed us to experience drastic events in the vicinity of our facilities such as a tsunami, flooding, and droughts with minimal impact to our operations in past years. Celestica's Business Continuity Plans (BCPs) take into consideration different types of scenarios and risks, such as environmental, socio-political, man-made threats, logistics and supply changes, contagions, etc. An annual schedule is established to test the preparedness and response to custom scenarios per site. These are called Tabletop Exercises (TTEs), which are facilitated by corporate resources and each site is scored on their performance. Sites are to provide responses to any deficiencies noted and update their plans accordingly.

**Time horizon**

Medium-term

**Likelihood**

Unlikely

**Magnitude of impact**

Medium-low

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

<Not Applicable>

**Potential financial impact figure – minimum (currency)**

0

**Potential financial impact figure – maximum (currency)**

100000000

**Explanation of financial impact figure**

Celestica's sites have varied environmental risks depending on global locations. The net financial impact of a catastrophic loss of a major facility could be in the range of \$0 to one hundred million dollars based on: - location (is the affected location a major manufacturing office, or a small sales office?) - duration (how long is the site unable to operate?) - type of event (are employees able to work safely? Has there been damage or destruction of property needed to operate? Are site and local utilities functioning?), and - nature of the incident that occurs (is the Celestica site directly affected, or are sources of supply, utilities, roads or other necessary infrastructure inoperative?). By way of site selection, risks like situational flooding are reviewed and considered. A flooding occurring in a large regional production site would incur significant financial impacts as opposed to a flooding occurring in a small office location.

**Management method**

Each Celestica location has a Business Continuity Plan (BCP), and an Emergency Preparedness and Response Team specific to its operations. The plan is tested through Table Top Exercises, Drills, and other activities. The BCP includes topics such as the site key contacts, Recovery Time Objectives, site dependencies, alternate site capability, risks specific to that location, and mitigating controls. In general, if a significant incident were to occur, Celestica would activate the Crisis Management Team

(CMT) at a Corporate level to provide direction, support and guidance to the affected location(s).

**Cost of management**

250000

**Comment**

Risk Management of our business operations occurs at a global level through third-party consultants, audit programs, insurance contracts with business interruption insurance, and global site personnel. Site level risk management occurs through mitigating controls, drills and exercises, processes and procedures, and assigned resources. Annual spend is difficult to quantify as business continuity activities and planning is integrated into our operations.

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**Identifier**

Risk 3

**Where in the value chain does the risk driver occur?**

Customer

**Risk type**

Transition risk

**Primary climate-related risk driver**

Market: Changing customer behavior

**Type of financial impact**

Reduced demand for goods and/or services due to shift in consumer preferences

**Company- specific description**

Celestica's customers are becoming increasingly concerned with climate change related issues and the potential to reduce impacts. For example, increased focus on Scope 3 emissions from our customers is changing the business landscape to include further transparency in the supply chain. To ensure transparency, Celestica is committed to reporting in compliance with institutions such as the GRI and the CDP. Customer scorecards are a mechanism to evaluate business partners. Many of our customers mandate our participation in these programs and incentivize us by adding points to the scorecards or including climate change related initiatives that influence and impact us. Failure to demonstrate leadership in combating climate change could impact future business awards.

**Time horizon**

Medium-term

**Likelihood**

Likely

**Magnitude of impact**

Medium-low

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

<Not Applicable>

**Potential financial impact figure – minimum (currency)**

0

**Potential financial impact figure – maximum (currency)**

60000000

**Explanation of financial impact figure**

Approximately 25% of our major customers include some form of sustainability themed metric on their scorecards. Given that scorecard rankings are a primary motivator for awarding new business, not obtaining the points associated with sustainability themed metrics will lessen our chances of winning new contracts and keeping existing business, thus impacting our revenue. For example, certain customers request Celestica to complete the CDP Climate Change Questionnaire. If we fail to adjust to transition the risks in the market, such as carbon pricing, we could lose out on significant revenue depending on which customer is directly at risk. We have estimated the potential financial impact as approximately 10% of our total revenue.

**Management method**

Celestica monitors all of our customer scorecards on a quarterly basis to assess the impact of sustainability themed metrics and understand how those maturing metrics will impact our own reporting obligations. We see that many of our customers are adding climate change related items and increasing total points to their scorecards. We are monitoring the score cards to ensure that we are ranked #1 or #2 on climate change related items. To manage this, we are collaborating on projects and ensuring we maintain our CDP and GRI submissions appropriately. An example of one such project includes the Electricity Estimator tool to both model and then reduce energy use in our factories. Additionally, we are actively examining freight methods to move product shipments to less impactful forms of transportation.

**Cost of management**

100000

**Comment**

Our customers' end customers continue to increase their demands, which will continue to place pressure on Celestica to enhance programs aimed at reducing our contribution to climate change. The annual cost to maintain this management method includes the cost of a working group to monitor our customers' scorecards and an FTE (full time equivalent) in the role of Sustainable Solutions in the Sustainability Team.

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C2.4

**(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?**

Yes

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C2.4a



**(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.**

**Identifier**

Opp1

**Where in the value chain does the opportunity occur?**

Direct operations

**Opportunity type**

Products and services

**Primary climate-related opportunity driver**

Development and/or expansion of low emission goods and services

**Type of financial impact**

Other, please specify (Reputational benefits resulting in increased demand for goods/services)

**Company-specific description**

Climate change is occasionally identified as a business opportunity in our risk assessment exercises. With the growth of the renewable energy sector and a push towards including more forms of renewable energy into the grid, Celestica saw an opportunity to create a line of business which aligns to our market diversification strategy. In response, the Smart Energy sector was added to the Advanced Technology Solutions (ATS) portion of our business, and today is still a prominent sub-segment of our ATS business. The Smart Energy sector supports our diversification strategy, allowing us to provide new customers with higher value, adding manufacturing revenue and aligning our strengths in a market with stringent quality, reliability and regulatory requirements. Furthermore, as more investors favor lower-emissions producers, there may be increased capital availability.

**Time horizon**

Medium-term

**Likelihood**

Very likely

**Magnitude of impact**

Medium-low

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

<Not Applicable>

**Potential financial impact figure – minimum (currency)**

0

**Potential financial impact figure – maximum (currency)**

500000000

**Explanation of financial impact figure**

This is based on the total available Smart Energy market and assumptions about our ability to win market share. Our Smart Energy market portfolio includes power inverters, energy storage products, smart meters and other electronic componentry. Celestica's current priorities include (i) evolving and diversifying our customer and product portfolios to drive consistent revenue growth and strong operating margins, and (ii) improving the overall profitability of our diversified end market businesses, while continuing to make investments therein. Our customers continue to expand the products they ask us to build which spans across multiple renewable energy optimization/generation equipment. The potential financial opportunity could be substantial for our Smart Energy portfolio if we become a leading manufacturing partner. We estimate the reasonable potential financial impact as 10% of total available market for Smart Energy products and services, which we estimate to be \$47 billion USD.

**Strategy to realize opportunity**

Celestica provides integrated smart energy solutions and services to our Renewable Energy customers in the areas of power generation, conversion and monitoring. We deliver complete product lifecycle solutions, including design, manufacturing and reliability services for power inverters, metering and controls electronics, and energy storage subsystems. By working directly with our customers in the Smart Energy market, we manage the design and engineering skills required to design products for this market and ensure our factories have the appropriate tools and technological capabilities in place to meet the manufacturing requirements of the products we and our customers design. Some previous examples of where our Smart Energy portfolio helped customers include building products for our customers who provide inverters used in the solar panel industry, building power units and controllers for wind turbines, and providing microinverters for rooftop systems. We have since diversified our portfolio to include different customer products and technologies.

**Cost to realize opportunity**

10000000

**Comment**

We have made significant investments in our ATS segment including the smart energy sub-segment over the past several years, and we are now starting to see the operational and financial improvements we anticipated in this segment

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**Identifier**

Opp2

**Where in the value chain does the opportunity occur?**

Direct operations

**Opportunity type**

Resilience

**Primary climate-related opportunity driver**

Other

**Type of financial impact**

Increased reliability of supply chain and ability to operate under various conditions

**Company-specific description**

An increase in extreme weather events can impact not only our manufacturing locations, but also our suppliers and supply chain. Our risk management system and approach to identifying the most severe threats to our facilities, and testing our facilities through mock business continuity scenarios, allow Celestica to improve our preparedness and strengthen our business continuity planning process. In previous years we have capitalized on our planning by being able to take on business from our

competitors during disruptive events that have impacted their business.

**Time horizon**

Medium-term

**Likelihood**

Unlikely

**Magnitude of impact**

Medium-low

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

<Not Applicable>

**Potential financial impact figure – minimum (currency)**

0

**Potential financial impact figure – maximum (currency)**

50000000

**Explanation of financial impact figure**

Financial benefits can be realized by understanding and mitigating risks to our operations where possible, which in turn benefits our customers. Customers inquire about business continuity practices, which is then a consideration for awarding business. Previous disruptive events support our assessment of financial gain to Celestica by being an alternate supplier to our customers when a competitor is impacted. The potential financial impact can be calculated by assessing our competitors' total revenue in areas where there is substantive overlap with Celestica's own business, as there is opportunity to take on our customers' business during disruptive events. We believe that the upper boundary for business programs to transfer to Celestica due to the inability of a competitor to function due to a catastrophic event affecting that competitor to be \$500,000,000.

**Strategy to realize opportunity**

Celestica has provided detailed guidance to sites regarding how to reduce or mitigate damage from environmental risks. This information flows from our global property insurer, FM Global. Prior to any new site leasing/ownership opportunities, FM Global also provides an assessment of local threats, such as flooding. We actively work with our property insurers to make sure that risks to our sites' operations, and hence our customers' supply chain, are mitigated where possible.

**Cost to realize opportunity**

400000

**Comment**

Multiple people at all sites support business continuity and risk management activities, so the existing spend is difficult to quantify but is at least in the \$100 thousands. Any incremental focus placed on risk management would provide further benefit to the organization. The cost to realize the opportunity is calculated at 25% of an FTE per site focused on risk management (including standards, Responsible Business Alliance audits, Business Continuity Planning, security, working with FM Global, internal audits, facility readiness, etc).

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**Identifier**

Opp3

**Where in the value chain does the opportunity occur?**

Direct operations

**Opportunity type**

Resource efficiency

**Primary climate-related opportunity driver**

Move to more efficient buildings

**Type of financial impact**

Reduced operating costs (e.g., through efficiency gains and cost reductions)

**Company-specific description**

Energy efficiency of new buildings, including modernized lighting and HVAC systems, is a prominent discussion point when considering new operational locations. Many of our facilities are leased and as these leases expire, it will be critical to examine the energy efficiency and sustainability of new buildings as an opportunity to save costs and reduce risks. For example, in 2018 the team in Toronto, Canada exited the headquarters location. The manufacturing/production moved to a facility in Newmarket, Canada that is comprised of efficient HVAC systems, such as chillers, boilers, and air handling units, as well as efficient LED lighting systems. The corporate team moved to an office tower in North York, Canada that is also modernized with efficient lighting and HVAC systems.

**Time horizon**

Short-term

**Likelihood**

More likely than not

**Magnitude of impact**

Medium

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

<Not Applicable>

**Potential financial impact figure – minimum (currency)**

0

**Potential financial impact figure – maximum (currency)**

60000000

**Explanation of financial impact figure**

Moving out of an inefficient building into a highly efficient building has a positive potential financial impact. More efficient lighting, increased monitoring, reducing air leaks,

and other energy efficient measures in all areas of the building will reduce overall electricity costs. Further, more efficient buildings should save on natural gas costs and consumption since our buildings will, on average, have better temperature control during cold weather. This is relevant to our move to Newmarket, Canada as winters in Canada can be very cold. The potential financial impact from reducing utilities costs has been calculated by first taking the percentage difference in total utilities spend from our move from the Toronto facility to the two separate facilities. By assuming that we would realize similar savings by moving to more efficient buildings, the percentage was then multiplied by the total utility spend in 2018 to calculate this potential financial benefit.

**Strategy to realize opportunity**

As leases expire, ensuring that we are located in the most efficient locations will be an opportunity. There are many factors that determine the decision of where to locate a facility, one of which is the efficiency of the building as this will help to reduce utility costs and risks. Teams throughout Celestica, such as procurement, will ensure that they investigate the best locations for a site move. The largest considerations are building infrastructure and building services. Further, a facility's location and electricity utility are within this consideration, as different energy mixes can lead to reduced greenhouse gas emissions. For example, an environmental study was conducted when seeking a new building for our previous Toronto operations, which resulted in deciding to move to the Newmarket facility. This included ensuring the building was energy efficient upon arrival. As an additional cost to the move, about \$1M was spent in adding motorized dampers to enable HVAC control by area, purchasing energy efficient chillers and compressors, adding heat recovery in compressor room, changing lighting in manufacturing space to LED, adding temperature/humidity monitoring to enable Industrial Internet of Things (IoT) central monitoring and future control, adding power monitoring to most major pieces of production equipment, adding Building Automation Systems (BAS) to HVAC, compressor and chiller units, and installing a "white roof" on the expansion space.

**Cost to realize opportunity**

1000000

**Comment**

Although this opportunity was specifically seen in 2018 because of our corporate exit, similar business case studies can be applied to determine where a new location should be. For example, certain regions may be operating in a closed market, where the electricity rates are non-negotiable and determined by the vendor. Although the building itself may not be more efficient, utilities costs can still be reduced by considering different vendors and rates

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C2.5

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**(C2.5) Describe where and how the identified risks and opportunities have impacted your business.**

|                                      | Impact  | Description   |
|--------------------------------------|---|---|
| Products and services                | Impacted for some suppliers, facilities, or product lines | i) Transition risk 1 from changing policy and legal regulations, risk 3 from shifts in customer demands for more sustainable products, and opportunity 1 of increasing demand in the smart energy market have affected the products and services we offer. The products we manufacture are due to customer requirements and market trends. Due to these shifts, any change in customer demand and supplier relationships will affect what we produce. For example, within our Advanced Technology Solutions (ATS) segment, the Smart Energy sub-segment was created in response to the increased consumer demand for renewable energy. Our customers continue to expand the range of products they ask us to deliver, including design, manufacturing and reliability services for power inverters, metering and controls electronics, and energy storage subsystems. However, the opposite can be true in that we may have lost business in the past if a customer did not award us business due to unfavourable scorecards (although we are not aware of a time where this has occurred). ii) The estimated magnitude of these risks is low, as we have not seen any examples of where we have lost business and thus shifted our products and services offerings. The magnitude of impact from opportunity 1, however, is medium as we have been able to create diversified and innovative products and services from the shifts in demand in the smart energy business. Overall, the extent of the increase in this side of the business and changes made to our products and services could potentially, albeit unlikely, represent the entire smart energy industry.  |
| Supply chain and/or value chain      | Impacted  | i) Risk 1 highlights the potential of losing business in our European locations if we do not comply to the EU Energy Efficiency Directive. This impacts facilities in Europe as production lines have to consider the need to pass their energy audits. Overall, changing customer concerns, as described in risk 3, impact our supply chain by influencing who does business with us. Moreover, a large majority of our scope 3 emissions are due to upstream distribution and transportation from suppliers, and customers are also adjusting their scorecards to incentivize climate-related initiatives. On the other hand, opportunity 1 describes the development of low emission goods and services in the supply chain. Celestica's Smart Energy sector was created in response to a growing renewable energy sector, creating an entirely new value chain for the company that customers value. ii) The magnitude of risk impacts are high as we do not want to damage our reputation or lose any business with our customers and suppliers, by failing to comply with customer concerns or regional policies. To manage this, sustainability programs are in place, energy audits are mandated in Europe and nine of our sites have received ISO 50001 certification to put in place stringent energy management strategies. The magnitude of opportunity impact is high as we deem approximately 10% of the Smart Energy market (evaluated at \$47 billion US) as a realistic potential opportunity. i) Risk 2 describes physical climate-related risks, like water scarcity, material scarcity, or flooding, that could disrupt our supply chain. This could impact certain manufacturing facilities as they are at risk of shutting down or stalling production. This may also be an opportunity, as described in opportunity 2, if competitors' facilities face issues that we do not. This has positively impacted our business in the past. The risks to Celestica are managed through a Business Continuity Plan (BCP) and an Emergency Preparedness and Response Team for each facility, which could help protect us from potential impacts and could create business opportunities. ii) The magnitude of impact of the risks are currently low for the majority of our sites. The opportunities may be higher due to our rigorous BCP and that competitors may face higher climate-related issues that could subsequently benefit Celestica.                       |
| Adaptation and mitigation activities | Impacted for some suppliers, facilities, or product lines | i) Risk 2 discusses acute physical risks from severity of extreme weather events. We evaluate sites for potential effects of climate change, but this has not led to any adaptation activities. We have created mitigation activities through Celestica's BCP and Emergency Preparedness and Response Team for each facility to ensure that system and data backups are in place to recreate an interrupted environment, any business disruptions are minimized, and clear plans are followed if disruptions occur. Furthermore, the progress towards our Aspirational Goals mitigates our impact on the environment, which mitigate risks to our business. ii) Risk 2 is considered medium-low, as we have been diligent when choosing new facilities to operate in, considering climate risks as part of the decision-making. The magnitude of impact depends on the extremity of weather events and our ability to adapt to it. For example, the scarcity of a resource necessary for production could stall business and lead to major financial losses, whereas flooding of a facility could damage equipment, but we could mitigate the impact by continuing our operations out of a new facility, by purchasing new equipment, or securing support from a subcontractor, to minimize financial loss and preserving customer business. i) Opportunity 3 assesses energy efficiencies of buildings when deciding where to relocate or open new facilities. Mitigation activities include implementing an EnMS (ISO 50001) in 9 of our facilities, and reducing consumption by considering energy efficiency aspects in buildings. We mitigate emissions that could lead to climate-related risks (Risk 2) by conducting activities like modernized lighting, implementing automated machinery, and retrofitting HVAC. This helps address risk 3 of customer demand changes, as we work to mitigate our business impacts of these initiatives and disclose them through reports such as the CDP (e.g. the relocation of our Toronto manufacturing facility to a more efficient factory in Newmarket). ii) The impacts of these risks and opportunities can be considered as medium-magnitude because mitigation activities can lead to financial investments and benefits. There are many factors that determine where a facility should locate and the preference is to renew leases rather than relocate, so generally climate risks have low impact on the company's decision. |
| Investment in R&D                    | Impacted for some suppliers, facilities, or product lines | i) Celestica has made investments in research and development of technologies to reduce our emissions and deal with transitional risks. For example, Celestica continues to identify methods to reduce energy consumption through ISO 50001 implementation and through projects targeting energy consumption/conservation from direct production equipment usage, which is influenced by changing customer demands outlined in risk 3. ii) Celestica is focused on ensuring that overall investment in capital expenditure to focus on company growth is 1.5-2% of annual revenue. The described research and development is only a fraction of this, meaning it is a low magnitude of impact for our company. i). Opportunity 1 discusses shifts in the market towards low-emissions goods and services. This has grown our smart energy segment of Celestica's business. Because of this growth, research and development investments have occurred to seek new technologies, train employees, and to invest in new manufacturing equipment at our facilities. ii). The magnitude of impact is low, as the smart energy sub-segment is one part of the ATS segment that represents 33% of Celestica's revenue, and overall company investment in capital expenditure is 1.5-2% of annual revenue.   |
| Operations                           | Impacted for some suppliers, facilities, or product lines | i) Due to risk 3 of enhanced emissions reporting obligations, operating costs have increased at some facilities (investment in ISO 50001, purchase of renewable energy in Galway and Valencia, and increased costs in R&D for energy and natural gas reduction in our operations). Furthermore, new materials and technologies require new methods of disposal and dealing with waste. ii) The magnitude of impact is medium-low, but can be considered as part of our day-to-day regular business operations. i) The change in market demand for low emissions products in opportunity 1 positively affected our business operations by creating the Smart Energy segment. We had significant changes to our operations from changes in the market, including shutting down our solar panel operations due to a set of factors that made the business financially unsustainable. Our operations have had to shift capabilities to meet the demand for the smart energy products. ii) Medium-low impacts to our operations includes Smart Energy, a sub-segment of the ATS segment, representing 33% of Celestica's total revenue. The impact to operations could be upwards of millions of dollars in new equipment, employees, and facilities if the segment continues to grow or customer demands change to address sustainability issues. i) Opportunity 3 directly impacts our operations through shifts in physical locations and adjustments to equipment. E.g. shutting down not in use machinery to save energy or investing in energy efficient building systems changes the way a facility operates. In a move to a new location, there is a large impact to operations during that time. The move from Toronto to Newmarket (a more energy-efficient facility) impacted our operations as machinery had to be shut down, moved, and set-up, prior to being in operation again. This is a huge endeavour, but there are significant positive benefits to Celestica's energy usage and associated emissions from this. ii) The magnitude of impact of opportunity 3 is medium, as it can lead to reduced energy costs, while temporary increase in costs of relocating, investing in new equipment, and potentially hiring new employees, significantly affected our operations during that time. This impact is likely, as most of our facilities are leased and will require an assessment to relocate (to a more energy efficient building) or not once it expires.      |
| Other, please specify                | We have not identified any risks or opportunities         |   |

**C2.6**

**(C2.6) Describe where and how the identified risks and opportunities have been factored into your financial planning process.**

|   | Relevance   | Description  |
|---|---|--|
| Revenues                                  | Impacted  | Physical climate related risks and opportunities described in 2.3a/2.4a have minimally impacted our revenue and financial planning. Increased cost of energy (particularly electricity), increased transparency requirements from our customers and investments in our Smart Energy market segments have all contributed to Celestica's financial performance. There have been climate related events in the past where we have been able to realize revenue from being in the right place at the right time (Opp 2). The magnitude of the physical climate-related risk is medium-low, however the magnitude of the opportunity is potentially larger given even a moderate share in the overall market.  |
| Operating costs                           | Impacted  | The climate-related risks outlined in 2.3a have affected our financial planning as we have to account for the cost to implement certification to recognized standards (such as ISO 50001). Although the cost is relatively small, we need to factor in the costs of registration, preparing for audits and implementing changes. Additionally we must plan resources to conduct the TTE outlined in Risk 2, as well as resources to respond to our customer requirements for reporting. The magnitude of these costs is \$0.5M, but are necessary, given the business environment in which we operate. In order to realize the climate-related opportunities, we must forecast the costs to maintain the existing smart energy business and any additional investments that are necessary to attract new business. Additionally, as our facilities invest in capital projects, we must plan appropriately in order to remain competitive in our industry. The magnitude of the impact is low relative to our total capital expenditure on Plant, Property and Equipment of \$78.5 million in 2018. |
| Capital expenditures / capital allocation | Impacted  | As part of our financial planning process our capital expenditures have increased - our financial plan includes expenditures aimed at reducing our GHG emissions aligning with Celestica's own and Celestica's customers expectations. This corresponds to our climate risk described in 2.3a (risk 3). We have set GHG emissions reduction goals where capital is required to meet the target. The magnitude of the CAPEX spend, which includes more than just emission reductions projects, is around \$30M USD a year.  |
| Acquisitions and divestments              | Impacted  | Climate risks described in 2.3a and opportunities in 2.4a, specifically Risk 2 and Opp 2, have had small impacts on Celestica's acquisition of companies. During our due diligence process the potentially acquired facilities would undergo a screening associated with our insurance process. This confirms that the facilities are in proper working order and assesses the risk of extreme weather events. Opportunities may exist for our additional revenue at our facilities in the future if other contract manufacturers experience climate-related events (such as severe weather) that allows us to take over their manufacturing. The magnitude of this is dependent on the location of our facilities and our competitors' facilities. The opportunity could be large (up to \$500 million [see above] USD) however the likelihood is low.  |
| Access to capital                         | Not impacted                                      | At this time, physical climate risk and opportunities described in 2.3a/2.4a have not created resource constraints that would impact Celestica's ability to access capital that support our business. Through the current global environment, we have been successful in obtaining capital as needed to reduce risk (eg. capital expenditures to reduce GHG emissions and water consumption) or to provide opportunities (eg. take on business from competitors) when there were climate-related events.   |
| Assets                                    | Impacted  | Our assets, specifically our facilities, are impacted by the physical risks and opportunities in 2.3 and 2.4a, including risk 1 and opp 2. We allocate resources in our global facilities to monitor our energy and emissions initiatives, which require capital investments. These capital investments are then approved through our internal financial process which support the overall company goals. In 2018 Celestica implemented improvement projects, totalling almost \$30M out of our overall capital spend (\$78.5M). Some of these projects helped reduce our emissions.   |
| Liabilities                               | Not impacted                                      | At this time, physical climate risk and opportunities described in 2.3a/2.4a have not impacted Celestica's ability to cover our contractual obligations as the liabilities associated with climate-related risk and opportunities are small relative to Celestica's overall liabilities.   |
| Other                                     | We have not identified any risks or opportunities |  |

**C3. Business Strategy**

**C3.1**

**(C3.1) Are climate-related issues integrated into your business strategy?**

Yes

**C3.1a**

**(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?**

No, but we anticipate doing so in the next two years

**C3.1c**

**(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.**

(i) Celestica's business strategy involves the identification of macro trends in the markets we serve and areas in which we operate. This data is gathered through engaging with our customers on the trajectory of their business and through discussing with other sources such as consultants on the technology and business trends affecting our customers' markets. For climate change related trends, we engage with stakeholders through our materiality process and when integrating those drivers into our strategy.

(ii) Celestica's business strategy is influenced by climate change, which is part of our annual risk assessment. In understanding the global need to reduce our dependence on fossil fuels, it became apparent that there would be a growth of renewable energy business to meet the world's energy demands. Celestica is a global manufacturing services company specializing in the manufacturing and supply chain management of complex assemblies, so the renewable energy market is a target for our ATS (Advanced Technology Solutions) offering.

(iii) As an opportunity to develop green business, Smart Energy is a subsegment in our ATS business and is part of Celestica's biggest business decisions driven by climate change. The products in our Smart Energy subsegment support the reduction of greenhouse gas emissions by way of technologies such as power inverters, energy storage products, smart meters and other electronic componentry. The products that we produce in this market sub-segment lead to greenhouse gas emissions reductions in other industries but also leverage our core competencies of manufacturing complex, high reliability products for our customers.

(iv) Energy price volatility driven by increased weather events due to climate change and unpredictability in supply chains has led utility providers to seek out alternate sources of energy - such as renewables. We began manufacturing solar panels in our Toronto facility as an opportunity to provide local content to the FIT (feed-in-tariff) program as part of the Green Energy Act in Ontario. This short term strategy initiative led to the growth of the Smart Energy business into a long-term, global initiative for Celestica.

(v) An increasing number of customers are concerned about climate change. By setting emissions reductions goals we are signalling to our customers that Celestica shares their values and are the long term business partners they can look upon to build their products responsibly and reliably. Celestica aims to reduce our energy and greenhouse gas emissions, influence the carbon footprint associated with the life cycle of the products we build, and explore opportunities to offer new sustainable services and solutions to our customers. These goals are integrated into our business strategy across the company.

(vi) Our customers are including sustainability as a key measurement on their supplier scorecards. Scorecard performance is used by our customers as they make decisions related to awarding future business. By culturally aligning to the climate change goals of our customers we are differentiating ourselves from our competition and gaining a competitive advantage.

(vii) In response to customer requirements and Celestica's strategy for employees to leverage their expertise to create a more sustainable world, Celestica has engaged in enhancing our digital monitoring (connected factory). As part of our connected factory, we have strategically invested in technologies that reduce electricity in our operations, including designing, developing and deploying an Internet of Things (IoT) solution. This contributes to our greenhouse emission reduction goals which are tied to our climate-change initiatives.

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**C3.1g**

**(C3.1g) Why does your organization not use climate-related scenario analysis to inform your business strategy?**

Climate-related scenario analysis is a new topic to Celestica, which we would like to explore. We have not had the opportunity to properly assess the implications and begin the process of completing an in-depth analysis. We will spend additional time consulting the most appropriate parties and complete a full and in-depth assessment prior to publishing results. We hope our science-based target (currently being assessed) will help guide us through the implementation of scenario analysis next year and we plan to research how other companies have integrated scenario analysis into their climate-related assessments and listen to increasing customer concerns on climate-related risks.

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**C4. Targets and performance**

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**C4.1**

**(C4.1) Did you have an emissions target that was active in the reporting year?**

Absolute target

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**C4.1a**

**(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.**

**Target reference number**

Abs 1

**Scope**

Scope 1 +2 (market-based)

**% emissions in Scope**

100

**Targeted % reduction from base year**

30

**Base year**

2012

**Start year**

2013

**Base year emissions covered by target (metric tons CO2e)**

204884

**Target year**

2020

**Is this a science-based target?**

No, and we do not anticipate setting one in the next 2 years

**% of target achieved**

33.9

**Target status**

Underway

**Please explain**

By December 31, 2018, total emissions (scope 1 and 2) was 184,024 metric tonnes of CO2e using a market-based approach. This represents a 10.2% reduction from our 2012 baseline. Celestica has achieved 33.9% of our goal. The percent of complete time from our 2020 goal with a base year of 2012 is 6 out of 8 years, thus 75% completed time. The percent of the goal completed is less than the time since we began focusing on our emissions due to a small reduction rate in the early years of our target (2012, 2013). Each sites' progress toward the larger goal is monitored by our COO on a quarterly basis. Employees are now implementing projects which should increase the rate of emission reductions over the following years in order to achieve our goal.

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**C4.2**

**(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.**

**Target**

Waste

**KPI – Metric numerator**

Total Recycled Waste

**KPI – Metric denominator (intensity targets only)**

Total Waste

**Base year**

2013

**Start year**

2013

**Target year**

2020

**KPI in baseline year**

84.9

**KPI in target year**

100

**% achieved in reporting year**

49

**Target Status**

Underway

**Please explain**

In 2018, we achieved a 92.3% waste diversion rate. This represents a 7.4% increase from our 2013 base year waste diversion rate of 84.9%, which means our target is 49.0% complete. We are 5 years into our 7 year target (71%), meaning we are slightly behind our goal if we are looking at a linear improvement rate. With a global goal of 100% waste diversion in 2020, Celestica is progressing well towards this aspirational goal.

**Part of emissions target**

This is not part of our emissions reduction target, however we report on the resulting Scope 3 emissions.

**Is this target part of an overarching initiative?**

No, it's not part of an overarching initiative

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

|                           | Number of initiatives | Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *) |
|---------------------------|-----------------------|--|
| Under investigation       | 9                     |  |
| To be implemented*        | 19                    | 826  |
| Implementation commenced* | 1                     | 0  |
| Implemented*              | 35                    | 5465   |
| Not to be implemented     | 0                     |  |

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

**Initiative type**

Low-carbon energy installation

**Description of initiative**

Solar PV

**Estimated annual CO2e savings (metric tonnes CO2e)**

1101

**Scope**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

267344

**Investment required (unit currency – as specified in C0.4)**

755368

**Payback period**

4 - 10 years

**Estimated lifetime of the initiative**

21-30 years

**Comment**

In Laem Chabang, Thailand, an additional 1MW solar panel system was installed, generating energy consumed directly by our facility. Our Thailand site now has approximately 3.5MW of solar panel generation.

**Initiative type**

Energy efficiency: Processes

**Description of initiative**

Compressed air

**Estimated annual CO2e savings (metric tonnes CO2e)**

231

**Scope**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

50000

**Investment required (unit currency – as specified in C0.4)**

20000

**Payback period**

1-3 years

**Estimated lifetime of the initiative**

Ongoing



**Comment**

In Monterrey, Mexico Internet of Things (IoT) was used to improve the efficiency of their air compressors. Previously, many Celestica sites have also implemented IoT to improve lighting efficiencies, such as automating light switches on the production floor.

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**Initiative type**

Energy efficiency: Processes

**Description of initiative**

Cooling technology

**Estimated annual CO2e savings (metric tonnes CO2e)**

2472

**Scope**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

374413

**Investment required (unit currency – as specified in C0.4)**

316053

**Payback period**

1-3 years

**Estimated lifetime of the initiative**

3-5 years

**Comment**

In 2018, our sites in Kulim, Malaysia and Suzhou, China implemented projects to improve their chiller systems' efficiency and monitoring.

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**Initiative type**

Energy efficiency: Building services

**Description of initiative**

Lighting

**Estimated annual CO2e savings (metric tonnes CO2e)**

977

**Scope**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

160598

**Investment required (unit currency – as specified in C0.4)**

466739

**Payback period**

1-3 years

**Estimated lifetime of the initiative**

1-2 years

**Comment**

In 2018, our facilities in Galway, Ireland; Mississauga, Canada; Monterrey, Mexico; Ontario, USA; and Valencia, Spain implemented lighting initiatives in both their office and production spaces. The initiatives would primarily be installing more efficient LED lighting. These initiatives annually saved 5.8 million kWh, resulting in almost 1000 mt CO2e reduced.

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**Initiative type**

Other, please specify (Waste mitigation activity)

**Description of initiative**

<Not Applicable>

**Estimated annual CO2e savings (metric tonnes CO2e)**

14

**Scope**

Scope 3

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

94523

**Investment required (unit currency – as specified in C0.4)**

65060

**Payback period**

<1 year

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**Estimated lifetime of the initiative**

Ongoing

**Comment**

In 2018, waste mitigation initiatives and programs were implemented by the following sites: Fremont-Bayside, Fremont-Warmsprings, Ontario and San Jose, USA; Mexicali and Monterrey, Mexico; Johor-EMS, Malaysia; Songshan Lake, China; Laem Chabang, Thailand. Projects included reducing plastic glove waste, odor cross recycling systems, reusing cardboard boxes, coffee grounds and pallets, and implementing multiple waste bin systems. All of these projects helped to divert waste from landfill, thus decreasing associated scope 3 emissions.

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**Initiative type**

Energy efficiency: Building services

**Description of initiative**

HVAC

**Estimated annual CO2e savings (metric tonnes CO2e)**

602

**Scope**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

126392

**Investment required (unit currency – as specified in C0.4)**

263233

**Payback period**

1-3 years

**Estimated lifetime of the initiative**

3-5 years

**Comment**

Our sites in Johor-AMS; Malaysia, Singapore, and Suzhou, China; improved the efficiency of various HVAC appliances, including air compressors, air handlers, air dryers, variable speed pumps, and cleaning exhaust ducts to reduce heating demands.

---

**Initiative type**

Energy efficiency: Processes

**Description of initiative**

Other, please specify (Replace old vapor degreasers)

**Estimated annual CO2e savings (metric tonnes CO2e)**

0.1

**Scope**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

100000

**Investment required (unit currency – as specified in C0.4)**

90909

**Payback period**

<1 year

**Estimated lifetime of the initiative**

3-5 years

**Comment**

Our site in Mississauga, Canada replaced two old vapor degreasers with one efficient one. This increases electricity savings as well as reduces waste. The consumption of the main chemical is also replaced and we are now using a cleaner chemical in Vertrel.

---

**Initiative type**

Energy efficiency: Building services

**Description of initiative**

Combined heat and power

**Estimated annual CO2e savings (metric tonnes CO2e)**

68

**Scope**

Scope 1

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

15119

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**Investment required (unit currency – as specified in C0.4)**

45000

**Payback period**

1-3 years

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Our site in Valencia, Spain integrated new controls on their boiling machines. This system lets operations engineers evaluate daily consumption so that they can optimize and reduce on electricity and natural gas where possible. Both the annual monetary savings and investment required values are estimated

**C4.3c****(C4.3c) What methods do you use to drive investment in emissions reduction activities?**

| Method  | Comment   |
|---|---|
| Employee engagement                               | Through the creation of our internal Google+ community, the Sustainable Workspace, and online idea submission form, the Ignite Tool, we have given employees avenues to share their ideas and experiments of sustainability-oriented innovations. The Sustainable Workspace is an online community where global employees can share their sustainability-related stories, initiatives and activities. This community has sparked support and conversations amongst employees on the projects and volunteering activities they have embarked on. The Ignite Tool connects employees with sustainability professionals to find ways to enact their ideas in waste reduction, energy consumption reduction, water use reduction and/or employee wellness projects into their sites.  |
| Internal finance mechanisms                       | 95% of Celestica's Scope 1 and Scope 2 emissions are related to the consumption of electricity in our factories. To facilitate the reduction of energy consumption and to encourage R&D in new technologies, we are using the business case built upon energy savings. To do so, we are looking at total consumption, time-of-use charges, and peak-demand avoidance to fund projects. For example, an IoT system was implemented in Thailand to avoid peak-demand usage. Alarms in the production area would continuously signal as the cumulative electricity consumption approached the peak-demand limit. This would signal employees to turn off any unnecessary equipment to avoid the high peak-demand cost of electricity.  |
| Lower return on investment (ROI) specification    | 95% of Celestica's Scope 1 and Scope 2 emissions are related to the consumption of electricity in our factories. To facilitate the reduction of energy consumption and to encourage the use of more energy efficient equipment we have added consumption to our equipment business case. Projects are approved typically when they surpass a certain ROI specification. However, the business case could be strengthened if the project has significant emission reductions projections to compensate for a subpar ROI.   |
| Compliance with regulatory requirements/standards | Celestica is directly impacted by regulations and has plans in place to comply. One such regulation is the EU Energy Efficiency Directive 2012/27/EU, which requires that large enterprises in the EU reduce overall emissions by 20% by 2020. In addition, it has also made energy audits mandatory in the EU for large enterprises as of December 2015. Celestica operates in 3 jurisdictions in the EU, including Ireland, Spain and Romania. We have used this regulation to help drive emission reduction activities in order to comply to this regulation. Additionally, Celestica has launched a program where sites affected are covered by an energy management system (ISO 50001). This will also help drive emission reductions. Celestica has also been regulated to pay a carbon tax on our purchase of propane in one of our sites. To mitigate these fees, we encourage our sites to minimize the amount of propane they purchase which would drive down emissions. In the future we anticipate being regulated to pay a carbon tax on electricity. Because this represents the majority of our Scope 1 + 2 emissions, we would likely aim to drive more emission reduction initiatives at that point in time. |
| Employee engagement                               | Spark Change is a call-to-action initiative that challenges our employees to use their expertise to leverage a more sustainable world through creating change in our workspaces. We assign a Spark Change agent at every site who is dedicated to fostering ideas and addressing concerns that can contribute to the development of a sustainable workspace.  |
| Internal incentives/recognition programs          | At Celestica, one way we celebrate and recognize our employees for embodying the force behind our business results, customers' satisfaction and positive impact on communities we operate in is through the Ignition Awards. It is composed of 11 award categories that are awarded to employees. Anyone internally can nominate employees for awards, in which the winners and runner ups get recognized internally through publications, at recognition events, and are provided with a monetary award. One of the categories is the Spark Change award that honours individual employees or teams that spearhead sustainability initiatives within their site and meaningfully engage with their community.  |

**C4.5****(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?**

Yes

**C4.5a****(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.****Level of aggregation**

Group of products

**Description of product/Group of products**

In our facilities in Toronto, Canada; Newmarket, Canada; Oradea, Romania; and Songshan Lake, China; we build products for the wind turbine industry and inverters used in the solar PV industry.

**Are these low-carbon product(s) or do they enable avoided emissions?**

Avoided emissions

**Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions**

Evaluating the carbon-reducing impacts of ICT

**% revenue from low carbon product(s) in the reporting year**

5

**Comment**

In 2018 we provided microinverters for one of our customers for their residential and commercial rooftop PV systems, aiding in the generation of approximately 172 MW for our customers' end markets. We also continued to support our customers who provide inverters used in the solar panel industry that helped generate approximately 4,200 MW for our customers end markets in 2017. Furthermore, we build power units and controllers for wind turbines that helped generate approximately 1,300 MW in 2017 for our customers end markets. We do not include these avoided emissions in our emissions reductions calculations or progress towards our aspirational goals

## C5. Emissions methodology

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### C5.1

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**(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).**

**Scope 1**

**Base year start**

January 1 2012

**Base year end**

December 31 2012

**Base year emissions (metric tons CO2e)**

7829

**Comment**

**Scope 2 (location-based)**

**Base year start**

January 1 2012

**Base year end**

December 31 2012

**Base year emissions (metric tons CO2e)**

197055

**Comment**

**Scope 2 (market-based)**

**Base year start**

January 1 2012

**Base year end**

December 31 2012

**Base year emissions (metric tons CO2e)**

197055

**Comment**

### C5.2

---

**(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.**

IPCC Guidelines for National Greenhouse Gas Inventories, 2006

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

US EPA Climate Leaders: Direct Emissions from Stationary Combustion

## C6. Emissions data

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### C6.1

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**(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?**

**Reporting year**

**Gross global Scope 1 emissions (metric tons CO2e)**

8867

**Start date**

January 1 2018

**End date**

December 31 2018

**Comment**

### C6.2

---

**(C6.2) Describe your organization's approach to reporting Scope 2 emissions.**

**Row 1**

**Scope 2, location-based**

We are reporting a Scope 2, location-based figure

**Scope 2, market-based**

We are reporting a Scope 2, market-based figure

**Comment**

---

**C6.3**

**(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?**

**Reporting year**

**Scope 2, location-based**

174505

**Scope 2, market-based (if applicable)**

175157

**Start date**

January 1 2018

**End date**

December 31 2018

**Comment**

Celestica's scope 2 emissions come from the electricity used in our facilities for production and operations, within offices, and other uses such as external lighting.

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**C6.4**

**(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?**

Yes

---

**C6.4a**

**(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.**

**Source**

HFC, PFC, SF6, NF3

**Relevance of Scope 1 emissions from this source**

Emissions are relevant but not yet calculated

**Relevance of location-based Scope 2 emissions from this source**

Emissions are relevant but not yet calculated

**Relevance of market-based Scope 2 emissions from this source (if applicable)**

Emissions are relevant but not yet calculated

**Explain why this source is excluded**

Fugitive emissions are excluded from Celestica's verification process. Various locations track and monitor these emissions, but in some locations the emissions from these gases are below the significance threshold and in other locations air conditioning units that may produce HFCs are controlled by third-party contractors, so they are not accurately tracked.

---

**C6.5**

**(C6.5) Account for your organization's Scope 3 emissions, disclosing and explaining any exclusions.**

## Purchased goods and services

### Evaluation status

Relevant, calculated

### Metric tonnes CO<sub>2</sub>e

189788

### Emissions calculation methodology

The emissions from Celestica's purchased goods and services can be calculated by comparing our spend with our suppliers to their revenue. By understanding how much of a supplier's revenue is from Celestica, we are able to approximate what Celestica's associated greenhouse gas emissions are. We then uplift this value to cover our total spend, as not all our suppliers publicly disclose their greenhouse gas emissions. For example, if our spend with one supplier was \$10M, and that supplier's revenue is \$500M, then 2% of the supplier's revenue is from Celestica. Then, if the supplier's greenhouse gas emissions are 100,000 mt CO<sub>2</sub>e, Celestica's associated greenhouse gas emissions would be 2,000 mt CO<sub>2</sub>e (2%). This process is then repeated for major suppliers that disclose their greenhouse gas emissions. We were able to account for about 40% of our supplier spend. This value was then uplifted to cover 100% of our spend.

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Explanation

## Capital goods

### Evaluation status

Relevant, calculated

### Metric tonnes CO<sub>2</sub>e

50315

### Emissions calculation methodology

Celestica's internal financial system tracks the proportion of spending that is spent on capital investments. This is broken down into categories such as facilities, IT hardware and software, and new or upgraded lines. These categories were then associated with categories with the 2012 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting Annex 13: Indirect emissions from the supply chain Table 13: Supply Chain Emission Factors or Spending on Products. Celestica's USD spending was converted to euros and the 2009 factors (Total kg CO<sub>2</sub>e per €) were used to calculate total kg CO<sub>2</sub>e within each category.

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Explanation

## Fuel-and-energy-related activities (not included in Scope 1 or 2)

### Evaluation status

Relevant, calculated

### Metric tonnes CO<sub>2</sub>e

33808

### Emissions calculation methodology

The UK Government publishes GHG Conversion Factors for Company Reporting. We used Version 1.01 for year 2018 to calculate the fuel-and-energy related activities not included in scope 1 and 2, which are well-to-tank (WTT) losses and losses from transmission and distribution (T&D). The WTT factors associated with different fuel types (i.e. diesel, LPG) so these were multiplied by Celestica's fuel consumption by type. The WTT and T&D factors were multiplied by the electricity that we consume at our facilities in different locations. The values were added together to get the total fuel and energy lost.

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Explanation

## Upstream transportation and distribution

### Evaluation status

Relevant, calculated

### Metric tonnes CO<sub>2</sub>e

75000

### Emissions calculation methodology

Celestica tracks transportation/logistics emission sources provided directly from our freight carrier invoice statements which use a distance-based method of calculation.

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

### Explanation

## Waste generated in operations

### Evaluation status

Relevant, calculated

### Metric tonnes CO<sub>2</sub>e

100

### Emissions calculation methodology

Emissions are calculated from landfill waste data that is entered into our Envizi carbon accounting tool. The tool uses the emissions factors for landfill waste from the 2018 UK Government conversion factors for Company reporting. Tab = Waste disposal.

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Explanation

## Business travel

### Evaluation status

Relevant, calculated

### Metric tonnes CO2e

5084

### Emissions calculation methodology

The calculation of greenhouse gas emissions from air travel is calculated by Celestica's Global Travel Agency which tracks flights purchased for company travel. This only accounts for air travel within the reporting year. The emission factors used are from the GHG Protocol Emission Factors from Cross Sector Tools March 2017 Table 18. CO2, CH4 and N2O Emission Factors by Passenger Distance (i.e. Public Transport) ([https://ghgprotocol.org/sites/default/files/Emission\\_Factors\\_from\\_Cross\\_Sector\\_Tools\\_March\\_2017.xlsx](https://ghgprotocol.org/sites/default/files/Emission_Factors_from_Cross_Sector_Tools_March_2017.xlsx)). Our supplier provides us with a carbon footprint number based on the amount of travel that they book on our behalf. We then uplift this number based on the total spend for air travel to get our total estimated emissions from air travel.

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

50

### Explanation

## Employee commuting

### Evaluation status

Relevant, calculated

### Metric tonnes CO2e

34870

### Emissions calculation methodology

HR representatives at our facilities were asked about the commuting habits of their employees. Some sites were able to provide accurate information, such as the distance travelled per employee, whereas others were estimates. Some data included was the average number of working days per year, the percentage of employees that work from home, and the percent of employees that take different modes of transportation. The total vehicle/passenger miles per year was then calculated by multiplying the average distance travelled (two-way miles) by the total # of employees that commute to work (based on the number of employees that do not work from home), and the average number of working days per year. This total was broken down into the different modes car, motorcycle, bus, subway/train, walk and bike. The US EPA GHG Emissions Factor Hub March 2018 Table 8: Business Travel and Employee Commuting details emissions factors per passenger-mile or vehicle-mile (CO2, CH4 and N2O) that were used to calculate the total emissions from employee commuting. We received data that covers 88.63% of employees, so the calculated value was scaled up to represent all global employees.

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

89

### Explanation

## Upstream leased assets

### Evaluation status

Not relevant, explanation provided

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Explanation

Any leased assets are included in Celestica's Scope 1 and Scope 2 emissions. We do not have any Scope 3 leased assets.

## Downstream transportation and distribution

### Evaluation status

Relevant, calculated

### Metric tonnes CO2e

28053

### Emissions calculation methodology

Celestica receives downstream transportation and distribution of our products shipped, although this transaction is owned by our customers. We took the distance travelled by mode (i.e. air, ground, ocean) and the total weight of the shipments multiplied by emission factors provided from the US EPA GHG Emissions Factor Hub March 2018 Table 9: Upstream Transportation and Distribution and Downstream Transportation and Distribution.

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

### Explanation

## Processing of sold products

### Evaluation status

Relevant, calculated

### Metric tonnes CO2e

29393

### Emissions calculation methodology

The scope 1 and 2 emissions that our customers emit to process the products they buy from Celestica is accounted for in this category. Although we make a wide variety of products, we calculated this source the taking an average based on our top customers that represent nearly 55% of our revenue. We calculated our customers emissions' per \$ million USD and multiplied that by Celestica's revenue from the customer. This value was then multiplied by a percentage of emissions that we estimated based on our own internal survey of a site's energy usage based on the processing of products.

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Explanation

In the future we would like to survey our customers to find out more specific values for this category.

## Use of sold products

### Evaluation status

Relevant, not yet calculated

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Explanation

The scope 1 and 2 emissions that our customer's customers emit while using a sold product would be part of this category of scope 3 emissions for Celestica. Celestica manufactures both intermediate and final products to our customers, but we are in the process of calculating these emissions.

## End of life treatment of sold products

### Evaluation status

Not relevant, explanation provided

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Explanation

Celestica primarily provides manufacturing and supply chain services. We do not own the products that we manufacture. Our customers account for end of life treatment in their Scope 3 emissions.

## Downstream leased assets

### Evaluation status

Not relevant, explanation provided

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Explanation

Celestica does not lease downstream assets.

## Franchises

### Evaluation status

Not relevant, explanation provided

### Metric tonnes CO2e

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Explanation

Celestica does not own franchises.



**Investments**

**Evaluation status**

Not relevant, explanation provided

**Metric tonnes CO2e**

<Not Applicable>

**Emissions calculation methodology**

<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

<Not Applicable>

**Explanation**

Celestica does not own investments that would be included in our Scope 3 emissions.

**Other (upstream)**

**Evaluation status**

Not evaluated

**Metric tonnes CO2e**

<Not Applicable>

**Emissions calculation methodology**

<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

<Not Applicable>

**Explanation**

**Other (downstream)**

**Evaluation status**

Not evaluated

**Metric tonnes CO2e**

<Not Applicable>

**Emissions calculation methodology**

<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

<Not Applicable>

**Explanation**

C6.7

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**(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?**

No

C6.10

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**(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.**

**Intensity figure**

0.0000277429

**Metric numerator (Gross global combined Scope 1 and 2 emissions)**

184024

**Metric denominator**

unit total revenue

**Metric denominator: Unit total**

6633200000

**Scope 2 figure used**

Market-based

**% change from previous year**

10.8

**Direction of change**

Decreased

**Reason for change**

Given Celestica's 3.7% decrease in emissions and 8.0% increase in revenue year over year, our intensity target decreased by 10.8%. Our market-based normalized emissions were 27.7 metric t CO2e per million dollars of revenue in 2018, compared to 31.1 t CO2e in 2017. We attribute this change to our reduction efforts throughout our global facilities. These projects aim to reduce electricity and fuel consumption while maintaining production efforts, such as energy management through ISO 50001 and the Internet of Things (IoT) implementation. Additionally, the relocation of our corporate headquarters helped reduce emissions. A recalculation was done on our intensity figure from last year as our 2017 revenue was restated from \$6110.5 billion to \$6142.7 billion. Last year, the intensity figure should have been 0.000031111 metric t CO2e/\$USD. Part of the increase in our revenue is due to our acquisitions of Atrenne Integrated Solutions, Inc. (Atrenne) and Impakt Holdings, LLC (Impakt) in April and November 2018, respectively.

**C7. Emissions breakdowns**

**C7.1**

**(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?**

Yes

**C7.1a**

**(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).**

| Greenhouse gas | Scope 1 emissions (metric tons of CO2e) | GWP Reference                                  |
|----------------|---|--|
| CO2            | 8844                                    | IPCC Second Assessment Report (SAR - 100 year) |
| CH4            | 11                                      | IPCC Second Assessment Report (SAR - 100 year) |
| N2O            | 12                                      | IPCC Second Assessment Report (SAR - 100 year) |

**C7.2**

**(C7.2) Break down your total gross global Scope 1 emissions by country/region.**

| Country/Region                        | Scope 1 emissions (metric tons CO2e) |
|---------------------------------------|--------------------------------------|
| Canada                                | 6314                                 |
| China                                 | 233                                  |
| Republic of Korea                     | 0                                    |
| Ireland                               | 334                                  |
| Japan                                 | 194                                  |
| Laos, People's Democratic Republic of | 4                                    |
| Malaysia                              | 468                                  |
| Mexico                                | 38                                   |
| Romania                               | 511                                  |
| Spain                                 | 82                                   |
| Thailand                              | 340                                  |
| United States of America              | 349                                  |

### C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By facility

### C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

| Facility               | Scope 1 emissions (metric tons CO2e) | Latitude  | Longitude   |
|------------------------|--------------------------------------|-----------|-------------|
| Brockton               | 41                                   | 42.052099 | -71.052835  |
| Burlingame             | 20                                   | 37.596204 | -122.376818 |
| Fremont-Bayside        | 61                                   | 37.514627 | -121.988397 |
| Fremont-Warm Springs   | 5                                    | 37.457397 | -121.920779 |
| Galway                 | 334                                  | 53.302591 | -8.997846   |
| Laos                   | 4                                    | 16.613012 | 104.801821  |
| Mexicali               | 38                                   | 32.589515 | -115.363765 |
| Miyagi                 | 194                                  | 38.440877 | 140.89245   |
| New Hope               | 118                                  | 45.050793 | -93.396677  |
| Newmarket              | 954                                  | 44.061652 | -79.420556  |
| Oradea                 | 511                                  | 47.105336 | 21.822019   |
| Portland               | 77                                   | 45.554571 | -122.471798 |
| San Jose - Rincon      | 23                                   | 37.398267 | -121.910929 |
| Santa Clara - Gianni   | 5                                    | 37.378166 | -121.943074 |
| Santa Clara - Molinaro | 0.3                                  | 37.379685 | -121.94496  |
| Senai-AMS              | 460                                  | 1.571613  | 103.653126  |
| Senai-EMS              | 8                                    | 1.63118   | 103.664505  |
| Songshan Lake          | 82                                   | 22.9682   | 113.903092  |
| Suzhou                 | 145                                  | 31.332563 | 120.6937    |
| Thailand               | 340                                  | 13.08324  | 100.904492  |
| Toronto                | 5360                                 | 43.722505 | -79.343982  |
| Valencia               | 82                                   | 39.582001 | -0.539256   |
| Xiamen                 | 5                                    | 24.512907 | 118.116958  |

### C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

| Country/Region                        | Scope 2, location-based (metric tons CO2e) | Scope 2, market-based (metric tons CO2e) | Purchased and consumed electricity, heat, steam or cooling (MWh) | Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh) |
|---------------------------------------|--|--|--|--|
| Canada                                | 1453                                       | 1746                                     | 38729  | 0  |
| China                                 | 30854                                      | 30854                                    | 46685  | 0  |
| Republic of Korea                     | 287  | 287                                      | 544  | 0  |
| Ireland                               | 4497                                       | 3995                                     | 10727  | 4491   |
| Japan                                 | 3001                                       | 3001                                     | 5536   | 0  |
| Laos, People's Democratic Republic of | 2155                                       | 2155                                     | 5846   | 0  |
| Malaysia                              | 55318                                      | 55318                                    | 80230  | 0  |
| Mexico                                | 11474                                      | 11474                                    | 24883  | 0  |
| Romania                               | 6892                                       | 8572                                     | 20181  | 0  |
| Singapore                             | 2570                                       | 2570                                     | 5886   | 0  |
| Spain                                 | 1150                                       | 0  | 3905   | 3905   |
| Thailand                              | 49521                                      | 49521                                    | 100617   | 4235   |
| United States of America              | 5333                                       | 5664                                     | 17917  | 3738   |

### C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By facility

### C7.6b

**(C7.6b) Break down your total gross global Scope 2 emissions by business facility.**

| Facility               | Scope 2 location-based emissions (metric tons CO2e) | Scope 2, market-based emissions (metric tons CO2e) |
|------------------------|---|--|
| Asan                   | 115   | 115  |
| Brockton               | 191   | 171  |
| Burlingame             | 27  | 40   |
| Fremont-Bayside        | 605   | 631  |
| Fremont- Warm Springs  | 1026  | 993  |
| Galway                 | 1883  | 0  |
| Hino                   | 914   | 914  |
| Hong Kong              | 356   | 356  |
| Kulim                  | 12221   | 12221  |
| Laos                   | 2155  | 2155   |
| Leixlip                | 2614  | 3995   |
| Littleton              | 3   | 3  |
| Mexicali               | 766   | 766  |
| Mississauga            | 328   | 393  |
| Miyagi                 | 2087  | 2087   |
| Monterrey              | 10708   | 10708  |
| Namdong                | 30  | 30   |
| New Hope               | 1434  | 1074   |
| Newmarket              | 187   | 231  |
| Ontario                | 29  | 43   |
| Oradea                 | 6892  | 8572   |
| Penang                 | 341   | 341  |
| San Jose               | 1065  | 1598   |
| San Jose - Rincon      | 17  | 26   |
| Santa Clara - Gianni   | 4   | 6  |
| Santa Clara - Molinaro | 18  | 28   |
| Senai-AMS              | 25047   | 25047  |
| Senai-EMS              | 17710   | 17710  |
| Shanghai               | 491   | 491  |
| Singapore-AMS          | 2387  | 2387   |
| Singapore-EMS          | 183   | 183  |
| Small offices          | 12  | 14   |
| Songdo                 | 142   | 142  |
| Songshan Lake          | 13396   | 13396  |
| Suzhou                 | 16071   | 16071  |
| Thailand               | 49521   | 49521  |
| Toronto                | 925   | 1107   |
| Valencia               | 1150  | 0  |
| Xiamen                 | 540   | 540  |
| Portland               | 914   | 1051   |

**C7.9**

**(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?**  
Decreased

**C7.9a**

**(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined) and for each of them specify how your emissions compare to the previous year.**

|   | Change in emissions (metric tons CO2e) | Direction of change | Emissions value (percentage) | Please explain calculation   |
|---|--|---------------------|------------------------------|--|
| Change in renewable energy consumption  | 1038                                   | Decreased           | 0.5                          | Our sites in Valencia, Spain and Galway, Ireland continued to purchase renewable energy through their energy provider. Additionally, our Laem Chabang, Thailand facility installed an additional 1MW of solar panels to generate electricity consumed directly by our facility. The facility now has approximately 3.5MW of solar panels. Of Celestica's overall energy consumption, 9,825,463 kWh of renewable energy came from these projects in 2017, resulting in a 5,330 mt CO2e reduction. In 2018, Celestica's renewable energy consumption from these projects was 12,630,320 kWh, reducing our emissions by 5,208 mt CO2e. Although we increased our renewable energy consumption, this did not lead to a larger reduction in our emissions from these initiatives. This is due to the large decrease in our Ireland emission factor from 0.76 kg CO2e/kWh to 0.42 kg CO2e/kWh, meaning that in 2017 renewable energy in Ireland avoided 3,528 mt CO2e emissions covering 4,708,297 kWh but 1,883 mt CO2e emissions in 2018 covering 4,490,723 kWh. Additionally, our Fremont-Bayside and Fremont-Warm Springs facilities switched over to a renewable and zero-carbon "Bright Choice" electricity plan with their vendor (East Bay Community Energy) in July 2018. This reduced their emission factor of 0.365 kg CO2e/kWh by 85%. These two facilities consumed 3,737,609 kWh from July 2018 to December 2018. Thus, the switch to the Bright Choice plan reduced 1,160 mt CO2e. In total all these initiatives reduced 6,368 mt CO2e in 2018. Thus, the year-over-year change in renewable energy consumption is 1,038 mt CO2e, when compared to the reduction from renewable energy in 2017 of 5,330 mt CO2e. The emissions value (percentage) is calculated by dividing 1,038 mt CO2e over last year's Scope 1 + 2 emissions value of 191,080 mt CO2e. |
| Other emissions reduction activities    | 4364                                   | Decreased           | 2.3                          | Through the reduction activities, a total of 4364 metric tonnes of CO2e were avoided in the calendar year of 2018. This includes increased efficiencies of various HVAC appliances like chillers, boilers, air handling units, and more, as well as major LED changes in large facilities. The emissions value (percentage) is calculated by dividing 4,364 mt CO2e over last year's Scope 1 + 2 emissions value of 191,080 mt CO2e.   |
| Divestment                              | 0                                      | No change           | 0                            | There were no divestments in 2018.   |
| Acquisitions                            | 2388                                   | Increased           | 1.2                          | Celestica completed acquisitions of Atrenne Integrated Solutions, Inc. (Atrenne) and Impakt Holdings, LLC (Impakt) in April, 2018 and November, 2018, respectively. The change in emissions equates to all the Atrenne and Impakt facilities' emissions listed in 7.3b and 7.6b (Asan, Brockton, Burlingame, Littleton, Namdong, New Hope, San Jose - Rincon, Santa Clara - Gianni, Santa Clara - Molinaro, Songdo, and Xiamen). The emissions value (percentage) is calculated by dividing 2,388 mt CO2e over last year's Scope 1 + 2 emissions value of 191,080 mt CO2e.   |
| Mergers                                 | 0                                      | No change           | 0                            | Celestica did not experience any mergers in 2018, except related to the Atrenne and Impakt acquisitions described above.   |
| Change in output                        | 4042                                   | Decreased           | 2.1                          | Celestica has seen overall growth in our business. Excluding the recent acquisitions of Atrenne and Impakt, our global production increased by about 4.3% while our emissions decreased by about 4.7%. This shows that we are actively implementing energy reduction initiatives at our sites and also taking more preemptive measures to minimize our energy consumption despite the increased production. Many of our sites undergo large changes in production throughout the year, both positively and negatively. As a result, the "change in output" category accounts for the remainder of emissions changes not documented in any of the other reasons in this table. Our Scope 1 + 2 emissions last year were 191,080 mt CO2e. This year they are 184,024 mt CO2e. The net change in emissions from all other reduction activities is a decrease of 3,014 mt CO2e. Thus, 4,042 mt CO2e are accounted as changes in business output. The emissions value (percentage) is calculated by dividing 4,042 mt CO2e over last year's Scope 1 + 2 emissions value of 191,080 mt CO2e.   |
| Change in methodology                   | 0                                      | No change           | 0                            | N/A  |
| Change in boundary                      | 0                                      | No change           | 0                            | N/A  |
| Change in physical operating conditions | 0                                      | No change           | 0                            | N/A  |
| Unidentified                            | 0                                      | No change           | 0                            | N/A  |
| Other                                   | 0                                      | No change           | 0                            | N/A  |

**C7.9b**

**(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?**

Market-based

**C8. Energy**

**C8.1**

**(C8.1) What percentage of your total operational spend in the reporting year was on energy?**

More than 0% but less than or equal to 5%

**C8.2**

**(C8.2) Select which energy-related activities your organization has undertaken.**

|  | Indicate whether your organization undertakes this energy-related activity |
|--|--|
| Consumption of fuel (excluding feedstocks)         | Yes  |
| Consumption of purchased or acquired electricity   | Yes  |
| Consumption of purchased or acquired heat          | No   |
| Consumption of purchased or acquired steam         | No   |
| Consumption of purchased or acquired cooling       | No   |
| Generation of electricity, heat, steam, or cooling | Yes  |

C8.2a

**(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.**

|   | Heating value              | MWh from renewable sources | MWh from non-renewable sources | Total MWh        |
|---|----------------------------|----------------------------|--------------------------------|------------------|
| Consumption of fuel (excluding feedstock)               | HHV (higher heating value) | 0                          | 47592                          | 47592            |
| Consumption of purchased or acquired electricity        | <Not Applicable>           | 8395                       | 349054                         | 357449           |
| Consumption of purchased or acquired heat               | <Not Applicable>           | <Not Applicable>           | <Not Applicable>               | <Not Applicable> |
| Consumption of purchased or acquired steam              | <Not Applicable>           | <Not Applicable>           | <Not Applicable>               | <Not Applicable> |
| Consumption of purchased or acquired cooling            | <Not Applicable>           | <Not Applicable>           | <Not Applicable>               | <Not Applicable> |
| Consumption of self-generated non-fuel renewable energy | <Not Applicable>           | 4235                       | <Not Applicable>               | 4235             |
| Total energy consumption                                | <Not Applicable>           | 12630                      | 396646                         | 409276           |

C8.2b

**(C8.2b) Select the applications of your organization's consumption of fuel.**

|   | Indicate whether your organization undertakes this fuel application |
|---|---|
| Consumption of fuel for the generation of electricity   | No  |
| Consumption of fuel for the generation of heat          | No  |
| Consumption of fuel for the generation of steam         | No  |
| Consumption of fuel for the generation of cooling       | No  |
| Consumption of fuel for co-generation or tri-generation | No  |

C8.2c

**(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.**

**Fuels (excluding feedstocks)**

Natural Gas

**Heating value**

HHV (higher heating value)

**Total fuel MWh consumed by the organization**

41663

**MWh fuel consumed for self-generation of electricity**

<Not Applicable>

**MWh fuel consumed for self-generation of heat**

<Not Applicable>

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

**Fuels (excluding feedstocks)**

Liquefied Petroleum Gas (LPG)

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

3141

**MWh fuel consumed for self-generation of electricity**

<Not Applicable>

**MWh fuel consumed for self-generation of heat**

<Not Applicable>

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

---

**Fuels (excluding feedstocks)**

Diesel

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

1923

**MWh fuel consumed for self-generation of electricity**

<Not Applicable>

**MWh fuel consumed for self-generation of heat**

<Not Applicable>

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

---

**Fuels (excluding feedstocks)**

Kerosene

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

786

**MWh fuel consumed for self-generation of electricity**

<Not Applicable>

**MWh fuel consumed for self-generation of heat**

<Not Applicable>

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

---

**Fuels (excluding feedstocks)**

Other, please specify (Ethanol E10)

**Heating value**

LHV (lower heating value)

**Total fuel MWh consumed by the organization**

79

**MWh fuel consumed for self-generation of electricity**

<Not Applicable>

**MWh fuel consumed for self-generation of heat**

<Not Applicable>

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self-cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

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C8.2d

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**(C8.2d) List the average emission factors of the fuels reported in C8.2c.**

**Diesel**

**Emission factor**

2.68779

**Unit**

kg CO2e per liter

**Emission factor source**

2018 UK Government Conversion Factors for Company reporting. Tab = Fuels

**Comment**

**Kerosene**

**Emission factor**

2.53627

**Unit**

kg CO2e per liter

**Emission factor source**

2018 UK Government Conversion Factors for Company reporting. Tab = Fuels

**Comment**

**Liquefied Petroleum Gas (LPG)**

**Emission factor**

1.51969

**Unit**

kg CO2e per liter

**Emission factor source**

2018 UK Government Conversion Factors for Company reporting. Tab = Fuels

**Comment**

**Natural Gas**

**Emission factor**

0.00205

**Unit**

kg CO2e per liter

**Emission factor source**

2018 UK Government Conversion Factors for Company reporting. Tab = Fuels

**Comment**

**Other**

**Emission factor**

2.07566

**Unit**

kg CO2e per liter

**Emission factor source**

2018 UK Government Conversion Factors for Company reporting. Tab = Fuels

**Comment**

Ethanol E10

**C8.2e**

**(C8.2e) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.**

|             | Total Gross generation (MWh) | Generation that is consumed by the organization (MWh) | Gross generation from renewable sources (MWh) | Generation from renewable sources that is consumed by the organization (MWh) |
|-------------|------------------------------|---|---|--|
| Electricity | 4235                         | 4235  | 4235  | 4235   |
| Heat        | 0                            | 0   | 0   | 0  |
| Steam       | 0                            | 0   | 0   | 0  |
| Cooling     | 0                            | 0   | 0   | 0  |

**C8.2f**



**(C8.2f) Provide details on the electricity, heat, steam and/or cooling amounts that were accounted for at a low-carbon emission factor in the market-based Scope 2 figure reported in C6.3.**

**Basis for applying a low-carbon emission factor**

Off-grid energy consumption from an on-site installation or through a direct line to an off-site generator owned by another company

**Low-carbon technology type**

Solar PV

**Region of consumption of low-carbon electricity, heat, steam or cooling**

Asia Pacific

**MWh consumed associated with low-carbon electricity, heat, steam or cooling**

4235

**Emission factor (in units of metric tons CO<sub>2</sub>e per MWh)**

0

**Comment**

Solar panels at Thailand site

---

**Basis for applying a low-carbon emission factor**

Contract with suppliers or utilities (e.g. green tariff), not supported by energy attribute certificates

**Low-carbon technology type**

Other low-carbon technology, please specify (100% Renewable Energy Contracts)

**Region of consumption of low-carbon electricity, heat, steam or cooling**

Europe

**MWh consumed associated with low-carbon electricity, heat, steam or cooling**

8395

**Emission factor (in units of metric tons CO<sub>2</sub>e per MWh)**

0

**Comment**

Celestica's facilities in Valencia, Spain and Galway, Ireland have 100% Renewable Energy contracts through their local provider for their electricity in 2018. Celestica is looking for opportunities to expand to our other sites.

---

**Basis for applying a low-carbon emission factor**

Contract with suppliers or utilities (e.g. green tariff), not supported by energy attribute certificates

**Low-carbon technology type**

Other low-carbon technology, please specify (85% carbon-free electricity plan)

**Region of consumption of low-carbon electricity, heat, steam or cooling**

North America

**MWh consumed associated with low-carbon electricity, heat, steam or cooling**

3738

**Emission factor (in units of metric tons CO<sub>2</sub>e per MWh)**

0.05475

**Comment**

Celestica's facilities in Fremont-Bayside, USA; and Fremont-Warm Springs, USA; switched to a "Bright Choice" electricity plan, effective July 2018. The new electricity mix is about 85% carbon-free, so as a result we reduced these sites' emission factor by 85%.

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## C9. Additional metrics

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### C9.1

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**(C9.1) Provide any additional climate-related metrics relevant to your business.**

**Description**

Waste

**Metric value**

17013

**Metric numerator**

Metric Tonnes

**Metric denominator (intensity metric only)**

**% change from previous year**

2.72

**Direction of change**

Decreased

**Please explain**

Out of all materials leaving Celestica sites, 17,013 metric tonnes was disposed of through reuse, recycling, waste-to-energy and landfill. This number is an improvement from 2017, with a 2.72% decrease in waste, by weight. Celestica continues to monitor our waste diversion efforts and continues to minimize using and creating materials without a closed-loop process at the end of life.

**C10. Verification**

**C10.1**

**(C10.1) Indicate the verification/assurance status that applies to your reported emissions.**

|  | Verification/assurance status                          |
|--|--|
| Scope 1                                  | Third-party verification or assurance process in place |
| Scope 2 (location-based or market-based) | Third-party verification or assurance process in place |
| Scope 3                                  | Third-party verification or assurance process in place |

**C10.1a**

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 and/or Scope 2 emissions and attach the relevant statements.

**Scope**

Scope 1

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Limited assurance

**Attach the statement**

Celestica 14064-1 Verification Statement 2018.pdf

**Page/ section reference**

Entire document

**Relevant standard**

Other, please specify (ISO 14064-3:2006)

**Proportion of reported emissions verified (%)**

100

---

**Scope**

Scope 2 location-based

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Limited assurance

**Attach the statement**

Celestica 14064-1 Verification Statement 2018.pdf

**Page/ section reference**

Entire document

**Relevant standard**

Other, please specify (ISO 14064-3:2006)

**Proportion of reported emissions verified (%)**

100

---

**Scope**

Scope 2 market-based

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Limited assurance

**Attach the statement**

Celestica 14064-1 Verification Statement 2018.pdf

**Page/ section reference**

Entire document

**Relevant standard**

Other, please specify (ISO 14064-3:2006)

**Proportion of reported emissions verified (%)**

100

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C10.1b

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(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

**Scope**

Scope 3- at least one applicable category

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Attach the statement**

Celestica 14064-1 Verification Statement 2018.pdf

**Page/section reference**

Entire document

**Relevant standard**

Other, please specify (ISO 14064-3:2006)

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C10.2

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(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

No, but we are actively considering verifying within the next two years

C11. Carbon pricing

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C11.1

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(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

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(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

Ireland carbon tax

C11.1c

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(C11.1c) Complete the following table for each of the tax systems in which you participate.

**Ireland carbon tax**

**Period start date**

January 1 2018

**Period end date**

December 31 2018

**% of emissions covered by tax**

0.01

**Total cost of tax paid**

157

**Comment**

The carbon tax policy in Ireland only affected our purchase of propane. The percentage represents total Celestica emissions covered by tax. The total cost was 139 EUR. Using a conversion rate of 1 EUR = 1.13 USD, this gives us the value of 157 USD.

C11.1d

---

**(C11.1d) What is your strategy for complying with the systems in which you participate or anticipate participating?**

Celestica's only carbon tax regulated system is in Ireland through the Ireland Carbon Tax. The tax applies to the company's purchase of propane at our Galway site. To comply with this system, Celestica duly pays the carbon tax as indicated on the invoices. Overall, Celestica aims to reduce our carbon footprint by using renewable energy and/or mitigating consumption of fossil fuels. For example, renewable energy was purchased at the Galway site for electricity usage and we will continue to look and assess for opportunities to reduce our GHG emissions.

Based on research, Celestica anticipates being regulated by the Singapore carbon tax in 2019, and Japan carbon tax and Mexico carbon tax within a few years. Celestica will follow the same strategy as above to comply with these systems where we will make all appropriate payments, and at the same time look to reduce our overall GHG emissions through consumption reductions via process optimization.

**C11.2**

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**(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?**

No

**C11.3**

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**(C11.3) Does your organization use an internal price on carbon?**

No, but we anticipate doing so in the next two years

**C12. Engagement**

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**C12.1**

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**(C12.1) Do you engage with your value chain on climate-related issues?**

Yes, our suppliers  
Yes, our customers

**C12.1a**

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**(C12.1a) Provide details of your climate-related supplier engagement strategy.**

**Type of engagement**

Engagement & incentivization (changing supplier behavior)

**Details of engagement**

Climate change performance is featured in supplier awards scheme

*Elements of option "Included climate change in supplier selection / management mechanism" and "Climate change is integrated into supplier evaluation processes" touched upon on this answer.*

**% of suppliers by number**

1.63

**% total procurement spend (direct and indirect)**

2.03

**% Scope 3 emissions as reported in C6.5**

0

**Rationale for the coverage of your engagement**

Climate change is considered in our supplier selection and integrated in our supplier evaluation processes. As an electronics manufacturing services company, Celestica provides components for customer products by engaging with direct suppliers. The majority of suppliers (approximately 97% of direct suppliers) are customer chosen, and as a result Celestica has limited control over how these suppliers engage with climate change. However, Celestica tries to engage with customers to change their suppliers to ones Celestica has scouted based on qualification questionnaires, which would include grading suppliers' engagement with climate change issues. Celestica engages with the chosen preferred suppliers monthly to ensure their scoring meets Celestica's annual target metric. When suppliers fall below this target, corrective action is assigned, and failure to meet the target percentage after 3 months leads to disengagement with the supplier.

**Impact of engagement, including measures of success**

Celestica managed suppliers are on our Preferred Supplier List (PSL). The suppliers on the PSL are audited based on the Responsible Business Alliance Supplier Assessment Questionnaire (RBA SAQ) which includes Environmental, Health and Safety topics as well as human rights and wellness. In 2018, we had 69 suppliers respond to the RBA SAQ, covering 5.03% of Celestica's total procurement spend. Based upon the opportunity to open-source from suppliers qualified by customers or a short list of suppliers qualified by Celestica, 22.3% of Celestica's direct and indirect spend has some form of choice in supplier selection. The impact of engagement is thus considered fairly relevant. However, this only covers 1.63% of Celestica's suppliers, which we would measure as unsuccessful. To be successful, Celestica aims to increase the number of suppliers audited by the RBA as this would then lead to more overall awareness on climate change issues. Celestica recognizes the importance of attributing scope 3 emissions from the impact of this engagement, but it is difficult to assess. The indirect procurement spend varies significantly and includes elements that are not associated with scope 3 emissions. As a result, we have reported 0% of our total scope 3 emissions as we are unable to calculate this amount.

**Comment**

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**C12.1b**

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**(C12.1b) Give details of your climate-related engagement strategy with your customers.**

**Type of engagement**

Education/information sharing

**Details of engagement**

Share information about your products and relevant certification schemes (i.e. Energy STAR)

**% of customers by number**

22

**% Scope 3 emissions as reported in C6.5**

0

**Please explain the rationale for selecting this group of customers and scope of engagement**

Our sustainability team prioritizes our customers based on their engagement on sustainability and climate change related issues. Customers who are engaged in climate related matters include these on supplier scorecards. With certain customers, we meet regularly to discuss projects and understand top level priorities. Success is measured through the Customer Scorecards that assign a score for sustainability and climate change improvements. With a strong understanding of each product's lifecycle, we are able to develop green solutions that unlock new opportunities for environmental, social and financial savings. Celestica has the strongest influence in the areas of manufacturing, distribution and end-of life for a product's lifecycle, which means we can work directly with our customers to realize their sustainability goals in a safe, energy efficient and environmentally conscious manner. For these customers we have shared the success with our ISO 50001 certification. With this standard we have been able to demonstrate to our customers the ability to drive real energy savings which result in GHG emission savings. Through this we have assisted our customers in achieving EPEAT certification for their own products.

**Impact of engagement, including measures of success**

These customers have been chosen as they also have a desire to be part of the most sustainable companies across the globe and have either reached out to Celestica for improvements or we have reached out to these customers. They also provide the greatest opportunity to unlock projects internally as their drive pushes Celestica to be even more sustainable. Through 2018 we had 9 sites registered to ISO 50001. These have enabled existing customers and have fostered conversation with potential new customers who have indicated the registration to the ISO 50001 standard is a benefit to our proposals.

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**C12.3**

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**(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?**

Trade associations

**C12.3b**

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**(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?**

Yes

**C12.3c**

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**(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.**

**Trade association**

Responsible Business Alliance (RBA) formerly the Electronics Industry Citizenship Coalition (EICC)

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association's position**

The manufacturing of electronic products can have a significant impact on the environment. From the use of rare materials to energy and water demands of manufacturing processes, there is a clear need for electronics companies to employ and promote environmentally responsible practices in the supply chain. The RBA has a vision of how companies should behave in the electronics industry. The RBA Code outlines industry standards to ensure that employees are treated with respect and dignity, employees are provided with a safe work environment, manufacturing processes are environmentally responsible and management systems are in place to support the RBA Code. The RBA has also taken the position that improved emissions reporting will drive awareness and reduction activities. The RBA encourages all of its members to annually report emissions and energy use to the RBA environmental survey, which includes a greenhouse gas reporting module, or by using the CDP Supply Chain Response. Data entered by all RBA members is summarized and tracked as a way to understand the impact of the electronics industry on global greenhouse gas emissions.

**How have you influenced, or are you attempting to influence their position?**

As an RBA (formerly EICC) founding member, Celestica continues to be actively involved with RBA membership by participating in working groups, and participation in a Validated Audit Program (VAP) Working Group.

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**Trade association**

High Density Packaging User Group

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association's position**

The High Density Packaging User Group (HDP User Group) is a non-profit trade organization that offers memberships to companies involved in the supply chain of manufacturing products that utilize high-density electronic packages. HDP User Group's mission is to drive innovation in the Electronics Industry, reducing cost and time to market through active collaborations that solve critical and emerging problems for the benefit of the membership. HDP User Group is a member driven organization. The members decide what technical areas are pursued and what issues are investigated. This structure keeps us focused on the most important issues affecting the electronics manufacturing Industry. The organization works with other industry consortia, universities and government agencies to develop the industry awareness of its project results and to support its membership's goals.

**How have you influenced, or are you attempting to influence their position?**

Celestica is one of the lead research groups associated with the Lead-Free Alloy Characterization and (now completed) Pad Cratering projects, as well as part of the development of cleanliness specification for expanded beam connectors project. Although Celestica is no longer on the board of iNEMI, our involvement with HDP User Group is regarding low temperature lead-free solutions as it will drive a lower reflow temperature and therefore be more energy friendly from an overall assembly perspective.

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**C12.3f**

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**(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?**

Celestica's sustainability program has a governance element to ensure that all activities undertaken internally and externally align with our climate change strategy. This review process is managed by our Senior Vice President of Legal and Sustainability, and internal/external programs are decided upon by that office.

Celestica is working to embed sustainability into our Corporate Culture to ensure consistency of messaging internally. This means integrating our sustainability goals (which includes our emissions reduction goal) throughout our organization. Celestica does this through communication and reframing of our organizational aspirational goals for both our general operations and for our functional groups. To ensure that our climate change strategy is consistent, we train our employees during the hiring process. Through effective and repeated communications, we ensure that our position on climate change is well communicated throughout the organization.

We have also integrated our aspirational goals into our Management Operational Reviews (MORs). The MOR is run through the office of our COO. At site update meetings we have our local change agents communicate our progress towards our aspirational goals to all employees.

**C12.4**

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**(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).**

**Publication**

In voluntary communications

**Status**

Underway – previous year attached

**Attach the document**

CEL\_SustainabilityReport2017\_FINAL-online.pdf

**Page/Section reference**

**Content elements**

- Governance
- Strategy
- Risks & opportunities
- Emissions figures
- Emission targets
- Other metrics

**Comment**

In 2019 we will be publishing a Sustainability Report that covers Celestica's emissions data for 2018. The attached report covers information for 2017.

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## C14. Signoff

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### C-FI

**(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.**

For further information, please refer to the most recent sustainability report which can be found on our corporate website at:  
[https://www.celestica.com/uploadedFiles/Site/About\\_Us/Sustainability/Sustainability\\_Overview/CEL\\_SustainabilityReport2017\\_FINAL-online.pdf](https://www.celestica.com/uploadedFiles/Site/About_Us/Sustainability/Sustainability_Overview/CEL_SustainabilityReport2017_FINAL-online.pdf)

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### C14.1

**(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.**

|       | Job title                                       | Corresponding job category         |
|-------|---|------------------------------------|
| Row 1 | Senior Vice President, Legal and Sustainability | Environment/Sustainability manager |

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## SC. Supply chain module

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### SC0.0

**(SC0.0) If you would like to do so, please provide a separate introduction to this module.**

Celestica's strategy for sustainability is to integrate the elements of our sustainability program into every aspect of our corporation. The five elements of our strategy are employee sustainability, environmental sustainability, material stewardship, sustainable solutions and sustainable communities. Additionally, we strive to focus on the areas that can create the most significant improvements in our industry.

Celestica is committed to distinguishing our company as a leader in the area of sustainability. We achieve this by leveraging our knowledge and expertise and through collaborating and sharing ideas with our employees, customers and suppliers, other business partners and the communities in which we operate. Sustainability is ingrained into all aspects of business at Celestica.

---

### SC0.1

**(SC0.1) What is your company's annual revenue for the stated reporting period?**

|       | Annual Revenue |
|-------|----------------|
| Row 1 | 6633200000     |



## SC0.2

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(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

No

## SC1.1

---

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

**Requesting member**

Alphabet, Inc.

**Scope of emissions**

Scope 1

**Allocation level**

Facility

**Allocation level detail**

Thailand usage of liquid petroleum gas, diesel, ethanol E10

**Emissions in metric tonnes of CO2e**

48.9

**Uncertainty (±%)**

0.1

**Major sources of emissions**

Stationary Combustion

**Verified**

Yes

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

Alphabet purchases: Boards and Servers • Facility name: Laem Chabang, Thailand • Source of emissions: Stationary fuel combustion - liquid petroleum gas, diesel, ethanol E10 • Total fuel usage of facility: 6,635 cf • Allocate fuel usage to Alphabet: 955 cf • Allocation percentage: 14.4% (based on revenue from Alphabet compared to revenue for entire facility)

---

**Requesting member**

Alphabet, Inc.

**Scope of emissions**

Scope 2

**Allocation level**

Facility

**Allocation level detail**

Thailand usage of electricity

**Emissions in metric tonnes of CO2e**

7127

**Uncertainty (±%)**

0.1

**Major sources of emissions**

The electricity we consume in our factories.

**Verified**

Yes

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

Alphabet purchases: Boards and Servers • Facility name: Laem Chabang, Thailand • Source of emissions: Electricity purchase • Total electric energy usage of facility: 96,382 MWh • Renewable energy usage of facility: 4,235 MWh • Allocate electric energy usage to Alphabet: 13,871 MWh • Allocate renewable energy usage to Alphabet: 609 MWh • Allocation percentage: 14.4% (based on revenue from Alphabet compared to revenue for entire facility)

---

**Requesting member**

Alphabet, Inc.

**Scope of emissions**

Scope 2

**Allocation level**

Facility

**Allocation level detail**

Ontario, USA usage of electricity

---

**Emissions in metric tonnes of CO2e**

43

**Uncertainty (±%)**

0.1

**Major sources of emissions**

The electricity we consume in our factories.

**Verified**

Yes

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

Alphabet purchases: Boards and Servers • Facility name: Ontario, California, USA • Source of emissions: Electricity purchase • Total electric energy usage of facility: 119 MWh • Renewable energy usage of facility: 0 MWh • Allocate electric energy usage to Alphabet: 118 MWh • Allocate renewable energy usage to Alphabet: 0 MWh • Allocation percentage: 99.4% (based on revenue from Alphabet compared to revenue for entire facility)

**Requesting member**

Alphabet, Inc.

**Scope of emissions**

Scope 3

**Allocation level**

Facility

**Allocation level detail**

Thailand landfill waste

**Emissions in metric tonnes of CO2e**

1.4

**Uncertainty (±%)**

0.1

**Major sources of emissions**

Waste (landfill)

**Verified**

No

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

Alphabet purchases: Boards and Servers • Facility name: Laem Chabang, Thailand • Source of emissions: Landfill waste • Total landfill waste of facility: 98,900 kg • Allocate landfill waste to Alphabet: 14,234 kg • Allocation percentage: 14.4% (based on revenue from Alphabet compared to revenue for entire facility) Scope 3 allocation is based on landfill waste. Celestica measures business (air) travel and logistics, but these emission sources cannot be allocated based on location or revenue.

**Requesting member**

Cisco Systems, Inc.

**Scope of emissions**

Scope 1

**Allocation level**

Company wide

**Allocation level detail****Emissions in metric tonnes of CO2e**

145.4

**Uncertainty (±%)**

0.1

**Major sources of emissions**

Stationary Combustion

**Verified**

Yes

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

The scope 1 value is based on stationary combustion at the facilities in which we manufacture products for Cisco. The emissions allocation for each facility are calculated based on revenue from Cisco compared to revenue for the entire facility. The total allocations from each facility are then added together.

**Requesting member**

Cisco Systems, Inc.

**Scope of emissions**

Scope 2

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO2e**

21384

**Uncertainty (±%)**

0.1

**Major sources of emissions**

The electricity we consume in our factories.

**Verified**

Yes

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

The scope 2 value is based on the electricity we consume at the facilities in which we manufacture products for Cisco. The emissions allocation for each facility are calculated based on revenue from Cisco compared to revenue for the entire facility. The total allocations from each facility are then added together.

---

**Requesting member**

Cisco Systems, Inc.

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO2e**

4.5

**Uncertainty (±%)**

0.1

**Major sources of emissions**

Landfill Waste

**Verified**

No

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

The scope 3 value is based on the emissions from landfill waste at the facilities in which we manufacture products for Cisco. The emissions allocation for each facility are calculated based on revenue from Cisco compared to revenue for the entire facility. The total allocations from each facility are then added together. Celestica also measures business (air) travel and logistics within their scope 3 emissions, but these emission sources cannot be allocated based on location or revenue.

---

**Requesting member**

Dell Inc.

**Scope of emissions**

Scope 1

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO2e**

154.3

**Uncertainty (±%)**

0.1

**Major sources of emissions**

Stationary Combustion

**Verified**

Yes

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

The scope 1 value is based on stationary combustion at the facilities in which we manufacture products for Dell. The emissions allocation for each facility are calculated based on revenue from Dell compared to revenue for the entire facility. The total allocations from each facility are then added together.

---

**Requesting member**

Dell Inc.

**Scope of emissions**

Scope 2

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**Allocation level**

Company wide

**Allocation level detail****Emissions in metric tonnes of CO2e**

8815.2

**Uncertainty (±%)**

0.1

**Major sources of emissions**

The electricity we consume in our factories.

**Verified**

Yes

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

The scope 2 value is based on the electricity we consume at the facilities in which we manufacture products for Dell. The emissions allocation for each facility are calculated based on revenue from Dell compared to revenue for the entire facility. The total allocations from each facility are then added together.

---

**Requesting member**

Dell Inc.

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail****Emissions in metric tonnes of CO2e**

2

**Uncertainty (±%)**

0.1

**Major sources of emissions**

Landfill Waste

**Verified**

No

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

The scope 3 value is based on the emissions from landfill waste at the facilities in which we manufacture products for Dell. The emissions allocation for each facility are calculated based on revenue from Dell compared to revenue for the entire facility. The total allocations from each facility are then added together. Celestica also measures business (air) travel and logistics within their scope 3 emissions, but these emission sources cannot be allocated based on location or revenue.

---

**Requesting member**

HP Inc

**Scope of emissions**

Scope 1

**Allocation level**

Company wide

**Allocation level detail****Emissions in metric tonnes of CO2e**

240.2

**Uncertainty (±%)**

0.1

**Major sources of emissions**

Stationary Combustion

**Verified**

Yes

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

The scope 1 value is based on stationary combustion at the facilities in which we manufacture products for HP. The emissions allocation for each facility are calculated based on revenue from HP compared to revenue for the entire facility. The total allocations from each facility are then added together.

---

**Requesting member**

HP Inc

**Scope of emissions**

Scope 2

---

**Allocation level**

Company wide

**Allocation level detail****Emissions in metric tonnes of CO2e**

6734.7

**Uncertainty (±%)**

0.1

**Major sources of emissions**

The electricity we consume in our factories.

**Verified**

Yes

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

The scope 2 value is based on the electricity we consume at the facilities in which we manufacture products for HP. The emissions allocation for each facility are calculated based on revenue from HP compared to revenue for the entire facility. The total allocations from each facility are then added together.

---

**Requesting member**

HP Inc

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail****Emissions in metric tonnes of CO2e**

0.7

**Uncertainty (±%)**

0.1

**Major sources of emissions**

Landfill Waste

**Verified**

No

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

The scope 3 value is based on the emissions from landfill waste at the facilities in which we manufacture products for HP. The emissions allocation for each facility are calculated based on revenue from HP compared to revenue for the entire facility. The total allocations from each facility are then added together. Celestica also measures business (air) travel and logistics within their scope 3 emissions, but these emission sources cannot be allocated based on location or revenue.

---

**Requesting member**

Juniper Networks, Inc.

**Scope of emissions**

Scope 1

**Allocation level**

Company wide

**Allocation level detail****Emissions in metric tonnes of CO2e**

96.8

**Uncertainty (±%)**

0.1

**Major sources of emissions**

Stationary Combustion

**Verified**

Yes

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

The scope 1 value is based on stationary combustion at the facilities in which we manufacture products for Juniper. The emissions allocation for each facility are calculated based on revenue from Juniper compared to revenue for the entire facility. The total allocations from each facility are then added together.

---

**Requesting member**

Juniper Networks, Inc.

**Scope of emissions**

Scope 2

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO2e**

17074.9

**Uncertainty (±%)**

0.1

**Major sources of emissions**

The electricity we consume in our factories.

**Verified**

Yes

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

The scope 2 value is based on the electricity we consume at the facilities in which we manufacture products for Juniper. The emissions allocation for each facility are calculated based on revenue from Juniper compared to revenue for the entire facility. The total allocations from each facility are then added together.

---

**Requesting member**

Juniper Networks, Inc.

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO2e**

11.6

**Uncertainty (±%)**

0.1

**Major sources of emissions**

Landfill Waste

**Verified**

No

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

The scope 3 value is based on the emissions from landfill waste at the facilities in which we manufacture products for Juniper. The emissions allocation for each facility are calculated based on revenue from Juniper compared to revenue for the entire facility. The total allocations from each facility are then added together. Celestica also measures business (air) travel and logistics within their scope 3 emissions, but these emission sources cannot be allocated based on location or revenue.

---

**Requesting member**

LinkedIn Corp.

**Scope of emissions**

Scope 1

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO2e**

0

**Uncertainty (±%)**

0

**Major sources of emissions**

Stationary Combustion

**Verified**

Yes

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

The scope 1 value is based on stationary combustion at the facilities in which we manufacture products for LinkedIn. The emissions allocation for each facility are calculated based on revenue from LinkedIn compared to revenue for the entire facility. The total allocations from each facility are then added together. We are unable to determine the revenue generated from LinkedIn.

---

**Requesting member**

LinkedIn Corp.

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**Scope of emissions**

Scope 2

**Allocation level**

Company wide

**Allocation level detail****Emissions in metric tonnes of CO2e**

0

**Uncertainty (±%)**

0

**Major sources of emissions**

The electricity we consume in our factories.

**Verified**

Yes

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

The scope 2 value is based on the electricity we consume at the facilities in which we manufacture products for LinkedIn. The emissions allocation for each facility are calculated based on revenue from LinkedIn compared to revenue for the entire facility. The total allocations from each facility are then added together. We are unable to determine the revenue generated from LinkedIn.

**Requesting member**

LinkedIn Corp.

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail****Emissions in metric tonnes of CO2e**

0

**Uncertainty (±%)**

0

**Major sources of emissions**

Landfill Waste

**Verified**

No

**Allocation method**

Allocation based on the market value of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

The scope 3 value is based on the emissions from landfill waste at the facilities in which we manufacture products for LinkedIn. The emissions allocation for each facility are calculated based on revenue from LinkedIn compared to revenue for the entire facility. The total allocations from each facility are then added together. Celestica also measures business (air) travel and logistics within their scope 3 emissions, but these emission sources cannot be allocated based on location or revenue. We are unable to determine the revenue generated from LinkedIn.

**SC1.2****(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).**

Celestica's 2018 sustainability report will be published this year and it will contain the emissions data provided. Our report can be located at <https://www.celestica.com/about-us/sustainability/overview>

The verification certification can be found attached to the CDP Climate Change submission.

**SC1.3**

**(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?**

| Allocation challenges   | Please explain what would help you overcome these challenges  |
|---|---|
| Diversity of product lines makes accurately accounting for each product/product line cost ineffective                   | The challenges in allocating emissions to our different customers come from the fact that most customers are in shared manufacturing spaces. Multiple customers utilize equipment to maximize usage and efficiency, which lowers our customers' overhead costs. This means that tracking consumption by manufacturing line would be necessary, but currently we do not have this capability. Additional technology and resources would be needed to overcome these challenges. Furthermore, allocating Scope 3 emissions by customer can be difficult. For example, when employees commute to work or travel to different facilities, they may be conducting work for certain customers, but this is not tracked. To overcome this challenge, more granular data would need to exist in our tracking systems to allocate certain scope 3 categories to our customers. |
| Customer base is too large and diverse to accurately track emissions to the customer level                              | The challenges in allocating emissions to our different customers come from the fact that most customers are in shared manufacturing spaces. Multiple customers utilize equipment to maximize usage and efficiency, which lowers our customers' overhead costs. This means that tracking consumption by manufacturing line would be necessary, but currently we do not have this capability. Additional technology and resources would be needed to overcome these challenges. Furthermore, allocating Scope 3 emissions by customer can be difficult. For example, when employees commute to work or travel to different facilities, they may be conducting work for certain customers, but this is not tracked. To overcome this challenge, more granular data would need to exist in our tracking systems to allocate certain scope 3 categories to our customers. |
| Managing the different emission factors of diverse and numerous geographies makes calculating total footprint difficult | The challenges in allocating emissions to our different customers come from the fact that most customers are in shared manufacturing spaces. Multiple customers utilize equipment to maximize usage and efficiency, which lowers our customers' overhead costs. This means that tracking consumption by manufacturing line would be necessary, but currently we do not have this capability. Additional technology and resources would be needed to overcome these challenges. Furthermore, allocating Scope 3 emissions by customer can be difficult. For example, when employees commute to work or travel to different facilities, they may be conducting work for certain customers, but this is not tracked. To overcome this challenge, more granular data would need to exist in our tracking systems to allocate certain scope 3 categories to our customers. |

**SC1.4**

**(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?**

Yes

**SC1.4a**

**(SC1.4a) Describe how you plan to develop your capabilities.**

To expand on our capabilities, we would engage in more direct communication with both our customers and our internal teams. This can be done through recurring meetings where our customers specify how they want their emissions allocated. With our internal teams, we can work on extracting more granular data reports so that we can better understand the customer requirements of a certain facility, and then endeavor to put in place emission reduction initiatives at those sites without compromising production. For example, a manufacturing facility may be using and maintaining inefficient legacy wave soldering equipment primarily for one specific customer's product. If we know that our customers are increasing the demand of similar production moving forward, then we would assess investment in retrofitting or purchasing more efficient equipment to replace legacy equipment for this process.

Additionally, Celestica is aiming to improve our Scope 3 reporting to better allocate emissions to our customers. In the past, we have reported data on Scope 3 emissions from business travel, waste generated in operations, and upstream transportation and distribution. This data is typically not linked to work with our customers. However, one category that we can more easily link is our downstream transportation and distribution as it would cover emissions from transporting products to our customers. Another is to specifically track and report on travel to visit with customers, whether at our sites or other locations.

Overall, maintaining energy literacy with our operational teams will improve our capabilities. A program is used to track our primary energy consumption drivers, which makes us aware of new emission reductions opportunities through energy conservation. For example, we've been able to incorporate more real-time monitoring of our energy consumption, such as monitoring hourly consumption of our chillers and boilers or installing sub-meters to extract more electricity data. This level of granularity helps operational teams reduce overall and machine-level energy consumption, particularly during on-peak hours where electricity costs for the day are heightened.

**SC2.1**

**(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.**

**Requesting member**

Alphabet, Inc.

**Group type of project**

Change to supplier operations

**Type of project**

Increased levels of purchased renewable energy

**Emissions targeted**

Actions that would reduce our own operational emissions (our scope 1 & 2)

**Estimated timeframe for carbon reductions to be realized**

Other, please specify (Depending on method, i.e. 0-1 years for RECs or 1-3 years for on-site solar)

**Estimated lifetime CO2e savings**

7127

**Estimated payback**

Other, please specify (Depending on method, i.e. no cost savings for RECs or 3-5 year payback for on-site solar)

**Details of proposal**

In Alphabet's publicly disclosed 2018 CDP Climate Change response, a renewable energy consumption target is provided. This target aims to purchase enough renewable



energy to match their total electricity consumption globally on an annual basis. They first achieved this target in 2017 primarily through purchasing solar energy, wind energy, and renewable energy certificates (RECs). Reputationally, it would benefit Alphabet if they were able to help their suppliers source more renewable energy. An energy efficiency and renewable energy program analysis by Alphabet has occurred at our Celestica Thailand facility. Increasing the use of renewable energy can provide significant emissions reductions and may provide financial savings, depending on the type procured (e.g. solar, geothermal, power purchasing agreements, or renewable energy certificates). We feel that we could learn from Alphabet on what approaches they have used to procure renewable energy to ensure that we are effective and maximizing our investments. Celestica is interested in working with Alphabet to leverage contracts with Alphabet's renewable energy providers to also act as sources of supply for Celestica's own operations. Celestica is also willing to support Alphabet's objectives to increase the use of renewable energy through their own operations and their suppliers' operations. By increasing our use of renewable energy sources we could levy a proportionate charge to such customers for the incremental cost of converting to renewable energy from lower cost fossil fuel suppliers. The emissions savings from renewable energy would be the total Scope 2 emissions allocated to Alphabet.

---

**Requesting member**

Alphabet, Inc.

**Group type of project**

Reduce Logistics Emissions

**Type of project**

Consolidated logistics

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

3-5 years

**Estimated lifetime CO2e savings**

1400

**Estimated payback**

Cost/saving neutral

**Details of proposal**

In Alphabet's publicly disclosed 2018 CDP Climate Change response, an overall Scope 1 + 2 + 3 emissions reduction target is provided. Celestica is also working towards calculating more of our Scope 3 emissions to improve transparency and overall coverage. Further, it would be mutually beneficial to work with Alphabet on climate-related projects to reduce our downstream transportation and distribution logistics emissions as this would in turn reduce Alphabet's upstream transportation and distribution logistics emissions. The total emissions savings is an approximated percentage of our Scope 3 "downstream transportation and distribution" calculation.

---

**Requesting member**

Alphabet, Inc.

**Group type of project**

Change to supplier operations

**Type of project**

Other, please specify (Energy productivity in operations)

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

1-3 years

**Estimated lifetime CO2e savings**

717

**Estimated payback**

1-3 years

**Details of proposal**

In previous years, Celestica developed an Energy Literacy program and IoT Energy tool kit that was implemented internally at some of our sites. We would like to continue emphasizing Alphabet's voice and direct participation on optimizing systems that track, manage and lower our greenhouse gas emissions and energy consumption in factories where we perform services for Alphabet. As a customer first culture, having buy-in from our customers is instrumental in enacting positive change in our factories. Additionally, the deployment of our technology may lead to insights where process improvements, such as functional test time reductions or an improved test strategy, increase energy productivity on the customer account. These improvements and collaborations could lead to significant emission and energy savings for both Alphabet and Celestica. While we cannot promise similar savings in every factory, we anticipate opportunities throughout our network as all factories can improve their energy productivity. The emissions savings from energy productivity in operations is approximated by taking a 10 percent reduction off of Alphabet's allocated Scope 2 emissions.

---

**Requesting member**

Cisco Systems, Inc.

**Group type of project**

Change to supplier operations

**Type of project**

Increased levels of purchased renewable energy

**Emissions targeted**

Actions that would reduce our own operational emissions (our scope 1 & 2)

**Estimated timeframe for carbon reductions to be realized**

Other, please specify (Depending on method, i.e. 0-1 years for RECs or 1-3 years for on-site solar)

**Estimated lifetime CO2e savings**

21384

**Estimated payback**

Other, please specify (Depending on method, i.e. no cost savings for RECs or 3-5 year payback for on-site solar)

**Details of proposal**

Cisco has publicly disclosed their energy and greenhouse gas reduction goals, including a goal of using electricity generated from renewable sources for at least 85% of their global electricity by FY22. It would benefit Cisco reputationally if they were able to help their suppliers source more renewable energy. Increasing the use of renewable energy can provide significant emissions reductions and may provide financial savings, depending on the type procured (e.g. solar, geothermal, power purchasing agreements, or renewable energy certificates). We feel that we could learn from Cisco on what approach they used to procure additional renewable energy and ensure that we maximize our investments. Celestica is interested in working with Cisco to leverage contracts with Cisco's renewable energy providers to also act as sources of supply for Celestica's own operations. Celestica is also willing to support Cisco's objectives to increase the use of renewable energy through their own operations and their suppliers' operations. By increasing our use of renewable energy sources we could levy a proportionate charge to such customers for the incremental cost of converting to renewable energy from lower cost fossil fuel suppliers. The emissions savings from renewable energy would be the total Scope 2 emissions allocated to Cisco.

---

**Requesting member**

Cisco Systems, Inc.

**Group type of project**

Change to supplier operations

**Type of project**

Other, please specify (Energy productivity in operations)

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

1-3 years

**Estimated lifetime CO2e savings**

2138

**Estimated payback**

1-3 years

**Details of proposal**

Improving energy efficiency is a high priority for Cisco, as outlined in their CSR 2018 report. There are additional opportunities to collaborate with Cisco on reducing energy consumption. To begin, we would like to continue working within one of our factories to improve energy modelling. We can do this by developing models for different areas in the factory and then combining these into a larger factory model. Secondly, there may be opportunities to work with Cisco on process improvements directly related to the models which we have proposed to develop. Once we have models for specific areas, there would be increased visibility to the energy consumption in those areas, which should lead to additional energy saving ideas. Finally, we may explore machine learning and AI to help us smooth out consumption spikes and time-shift processes to lower our overall consumption and the day/night variation in our consumption curve. The potential emissions savings from energy productivity in operations is approximated by taking a 10 percent reduction off of Cisco's allocated Scope 2 emissions.

---

**Requesting member**

Dell Inc.

**Group type of project**

Change to supplier operations

**Type of project**

Increased levels of purchased renewable energy

**Emissions targeted**

Actions that would reduce our own operational emissions (our scope 1 & 2)

**Estimated timeframe for carbon reductions to be realized**

Other, please specify (Depending on method, i.e. 0-1 years for RECs or 1-3 years for on-site solar)

**Estimated lifetime CO2e savings**

8815

**Estimated payback**

Other, please specify (Depending on method, i.e. no cost savings for RECs or 3-5 year payback for on-site solar)

**Details of proposal**

Dell has publicly disclosed their energy and greenhouse gas reduction goals, including a new goal set to source 50% of Dell's total electricity from renewables (both purchased and on-site generation). It would benefit Dell reputationally if they were able to help their suppliers source more renewable energy. Increasing the use of renewable energy can provide significant emissions reductions and may provide financial savings, depending on the type procured (e.g. solar, geothermal, power purchasing agreements, or renewable energy certificates). We feel that we could learn from Dell on what approach they used to procure additional renewable energy and ensure that we maximize our investment. Celestica is interested in working with Dell to leverage contracts with Dell's renewable energy providers to also act as sources of supply for Celestica's own operations. Celestica is also willing to support Dell's objectives to increase the use of renewable energy through their own operations and their suppliers' operations. By increasing our use of renewable energy sources we could levy a proportionate charge to such customers for the incremental cost of converting to renewable energy from lower cost fossil fuel suppliers. The emissions savings from renewable energy would be the total Scope 2 emissions allocated to Dell.

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**Requesting member**

Dell Inc.

**Group type of project**

Change to supplier operations

**Type of project**

Other, please specify (Energy productivity in operations)

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

1-3 years

**Estimated lifetime CO2e savings**

882

**Estimated payback**

1-3 years

**Details of proposal**

Dell disclosed in their FY19 Corporate Social Responsibility Report their commitment to reduce GHG emissions, increase the usage of electricity from renewable energy sources and waste diversion rate. Additionally, in the 2018 Supply Chain Sustainability Progress Report, Dell discusses reducing energy use in the supply chain and their suppliers' commitments to sustainability reporting. In previous years, Celestica developed an Energy Literacy program and IoT Energy tool kit that was implemented internally at some of our sites. We would like to continue emphasizing Dell's voice and direct participation on optimizing systems that track, manage and lower our greenhouse gas emissions and energy consumption in factories where we perform services for Dell. As a customer first culture, having buy-in from our customers is instrumental in enacting positive change in our factories. Additionally, the deployment of our technology may lead to insights where process improvements, such as functional test time reductions or an improved test strategy, increase energy productivity on the customer account. These improvements and collaborations could lead to significant emission and energy savings for both Dell and Celestica. While we cannot promise similar savings in every factory, we anticipate opportunities throughout our network as all factories can improve their energy productivity. The emissions savings from energy productivity in operations is approximated by taking a 10 percent reduction off of Dell's allocated Scope 2 emissions.

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**Requesting member**

Dell Inc.

**Group type of project**

Relationship sustainability assessment

**Type of project**

Aligning goals to feed into customers targets and ambitions

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

3-5 years

**Estimated lifetime CO2e savings**

1400

**Estimated payback**

Cost/saving neutral

**Details of proposal**

Dell has publicly disclosed a Supply chain target that by 2020, Dell's suppliers representing 95% of direct materials spend and key logistics suppliers will set specific greenhouse gas (GHG) emissions targets and report on their emissions inventory. In future reporting years, Celestica can look at setting a Scope 3 reduction target that would benefit both Celestica (supplier) and Dell (customer). The total emissions savings is an approximated percentage of our Scope 3 "downstream transportation and distribution" calculation.

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**Requesting member**

HP Inc

**Group type of project**

Change to supplier operations

**Type of project**

Other, please specify (Energy productivity in operations)

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

1-3 years

**Estimated lifetime CO2e savings**

674

**Estimated payback**

3-5 years

**Details of proposal**

HP disclosed in their 2018 Sustainable Impact Report their commitment to reduce suppliers CO2 emissions and supply chain and product portfolio GHG emissions. In previous years, Celestica developed an Energy Literacy program and IoT Energy tool kit that was implemented internally at some of our sites. We would like to continue emphasizing HP's voice and direct participation on optimizing systems that track, manage and lower our greenhouse gas emissions and energy consumption in factories where we perform services for HP. As a customer first culture, having buy-in from our customers is instrumental in enacting positive change in our factories. Additionally, the deployment of our technology may lead to insights where process improvements, such as functional test time reductions or an improved test strategy, increase energy productivity on the customer account. These improvements and collaborations could lead to significant emission and energy savings for both HP and Celestica. While we cannot promise similar savings in every factory, we anticipate opportunities throughout our network as all factories can improve their energy productivity. The emissions savings from energy productivity in operations is approximated by taking a 10 percent reduction off of HP's allocated Scope 2 emissions.

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**Requesting member**

HP Inc

**Group type of project**

Change to supplier operations

**Type of project**

Increased levels of purchased renewable energy

**Emissions targeted**

Actions that would reduce our own operational emissions (our scope 1 &amp; 2)

**Estimated timeframe for carbon reductions to be realized**

Other, please specify (Depending on method, i.e. 0-1 years for RECs or 1-3 years for on-site solar)

**Estimated lifetime CO2e savings**

6735

**Estimated payback**

Other, please specify (Depending on method, i.e. no cost savings for RECs or 3-5 year payback for on-site solar)

**Details of proposal**

HP has publicly disclosed a renewable energy consumption target, of using 40% renewable electricity in global operations by 2020. It would benefit HP reputationally if they were able to help their suppliers source more renewable energy. Increasing the use of renewable energy can provide significant emissions reductions and may provide financial savings, depending on the type procured (e.g. solar, geothermal, power purchasing agreements, or renewable energy certificates). We feel that we could learn from HP on what approach they used to procure additional renewable energy and ensure that we maximize our investments. Celestica is interested in working with HP to leverage contracts with HP's renewable energy providers to also act as sources of supply for Celestica's own operations. Celestica is also willing to support HP's objectives to increase the use of renewable energy through their own operations and their suppliers' operations. By increasing our use of renewable energy sources we could levy a proportionate charge to such customers for the incremental cost of converting to renewable energy from lower cost fossil fuel suppliers. The emissions savings from renewable energy would be the total Scope 2 emissions allocated to HP.

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**Requesting member**

HP Inc

**Group type of project**

Reduce Logistics Emissions

**Type of project**

Consolidated logistics

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

3-5 years

**Estimated lifetime CO2e savings**

1400

**Estimated payback**

Cost/saving neutral

**Details of proposal**

HP aims to reduce supply chain GHG emissions intensity by 10% by 2025. Celestica is also working towards calculating more of our Scope 3 emissions to improve transparency and overall coverage. It would be mutually beneficial to work with HP on climate-related projects to reduce our downstream transportation and distribution logistics emissions as this would in turn reduce HP's upstream transportation and distribution logistics emissions. The total emissions savings is an approximated percentage of our Scope 3 "downstream transportation and distribution" calculations.

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**Requesting member**

Juniper Networks, Inc.

**Group type of project**

Change to supplier operations

**Type of project**

Other, please specify (Energy productivity in operations)

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

1-3 years

**Estimated lifetime CO2e savings**

1707

**Estimated payback**

1-3 years

**Details of proposal**

In previous years, Celestica developed an Energy Literacy program and IoT Energy tool kit that was implemented internally at some of our sites. We would like to continue emphasizing Juniper's voice and direct participation on optimizing systems that track, manage and lower our greenhouse gas emissions and energy consumption in factories where we perform services for Juniper. As a customer first culture, having buy-in from our customers is instrumental in enacting positive change in our factories. Additionally, the deployment of our technology may lead to insights where process improvements, such as functional test time reductions or an improved test strategy, increase energy productivity on the customer account. These improvements and collaborations could lead to significant emission and energy savings for both Juniper and Celestica. While we cannot promise similar savings in every factory, we anticipate opportunities throughout our network as all factories can improve their energy productivity. The emissions savings from energy productivity in operations is approximated by taking a 10 percent reduction off of Juniper's allocated Scope 2 emissions.

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**Requesting member**

Juniper Networks, Inc.

**Group type of project**

Relationship sustainability assessment

**Type of project**

Other, please specify (Disclosing more details around our Scope 3 emissions)

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

1-3 years

**Estimated lifetime CO2e savings**

9489

**Estimated payback**

Cost/saving neutral

**Details of proposal**

Juniper expects their suppliers to measure and disclose GHG emissions, preferably through the CDP. As more suppliers disclose Scope 3 emissions, particularly those associated with the category "Purchased Goods and Services", it makes it possible for Juniper to report their Scope 3 emissions. It would then be mutually beneficial for both Celestica and Juniper if we worked towards reporting on our "Purchased Goods and Services" emissions, which is a category of Scope 3 emissions that Celestica has assessed internally. The total emissions savings is an approximated percentage of our Scope 3 "Purchased Goods and Services" calculations.

**Requesting member**

LinkedIn Corp.

**Group type of project**

Change to supplier operations

**Type of project**

Increased levels of purchased renewable energy

**Emissions targeted**

Actions that would reduce our own operational emissions (our scope 1 &amp; 2)

**Estimated timeframe for carbon reductions to be realized**

Other, please specify (Depending on method, i.e. 0-1 years for RECs or 1-3 years for on-site solar)

**Estimated lifetime CO2e savings**

12236

**Estimated payback**

Other, please specify (Depending on method, i.e. no cost savings for RECs or 3-5 year payback for on-site solar)

**Details of proposal**

LinkedIn has publicly disclosed their commitment to 100% renewable energy. LinkedIn aims to purchase enough renewable energy to match their total electricity consumption globally across their offices. In 2018, 80% of their office footprint was powered by wind and solar energy. This is spearheaded by their award-winning Net Zero Energy building in South Bay, California. Currently we are unable to allocate emissions to LinkedIn. However, we would like to work with LinkedIn in the future to procure more renewable energy. Increasing the use of renewable energy can provide significant emissions reductions and may provide financial savings, depending on the type procured (e.g. solar, geothermal, power purchasing agreements, or renewable energy certificates). We feel that we could learn from LinkedIn on what approach they used to procure additional renewable energy and ensure that we maximize our investments. In particular, we'd like to learn more about LinkedIn's Net Zero Energy building so that we can leverage this concept to create similar facilities within our network. Celestica is interested in working with LinkedIn to leverage contracts with LinkedIn's renewable energy providers to also act as sources of supply for Celestica's own operations. Celestica is also willing to support LinkedIn's objectives to increase the use of renewable energy through their own operations and their suppliers' operations. By increasing our use of renewable energy sources we could levy a proportionate charge to such customers for the incremental cost of converting to renewable energy from lower cost fossil fuel suppliers. It is difficult to determine the estimated CO2e savings as we cannot currently allocate emissions to LinkedIn. Thus these savings have been approximated as an average of the potential savings from increasing renewable energy with other customers.

**SC2.2****(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?**

Yes

**SC2.2a**

**(SC2.2a) Specify the requesting member(s) that have driven organizational-level emissions reduction initiatives, and provide information on the initiatives.**

**Requesting member**

Cisco Systems, Inc.

**Initiative ID**

2019-ID1

**Group type of project**

Relationship sustainability assessment

**Type of project**

Aligning goals to feed into customers targets and ambitions

**Description of the reduction initiative**

Cisco has targets to reduce Scope 1 and 2 greenhouse gas emissions worldwide by 60 percent and to use electricity generated from renewable sources for at least 85 percent of their global electricity by Fiscal Year 2022. This has helped to drive projects for reductions in our operations. For example, Celestica previously collaborated across functions to implement Internet of Things (IoT) tools to make an improvement in energy efficiency in one of our facilities that supports Cisco. While the IoT Energy system is still in place, the effects of the system were not quantified for 2018. Celestica still took steps to reduce emissions through increasing the amount of on-site electricity generation by installing additional solar panels on a facility which supports Cisco. In 2018, our total solar panel installation generated approximately 4,235 MWh of renewable electricity, up from 1,595 MWh in 2017. Of the total renewable electricity, 1,908 MWh is allocated to Cisco in 2018, which is an increase from 1,317 MWh in 2017. This is equivalent to an emissions reduction of about 980 mt CO2e.

**Emissions reduction for the reporting year in metric tons of CO2e**

980

**Did you identify this opportunity as part of the CDP supply chain Action Exchange?**

No

**Would you be happy for CDP supply chain members to highlight this work in their external communication?**

Yes

**SC3.1**

**(SC3.1) Do you want to enroll in the 2019-2020 CDP Action Exchange initiative?**

No

**SC3.2**

**(SC3.2) Is your company a participating supplier in CDP's 2018-2019 Action Exchange initiative?**

No

**SC4.1**

**(SC4.1) Are you providing product level data for your organization's goods or services?**

No, I am not providing data

**Submit your response**

**In which language are you submitting your response?**

English

**Please confirm how your response should be handled by CDP**

|                             | Public or Non-Public Submission | I am submitting to     | Are you ready to submit the additional Supply Chain Questions? |
|-----------------------------|---------------------------------|------------------------|--|
| I am submitting my response | Public                          | Investors<br>Customers | Yes, submit Supply Chain Questions now                         |

**Please confirm below**

I have read and accept the applicable Terms