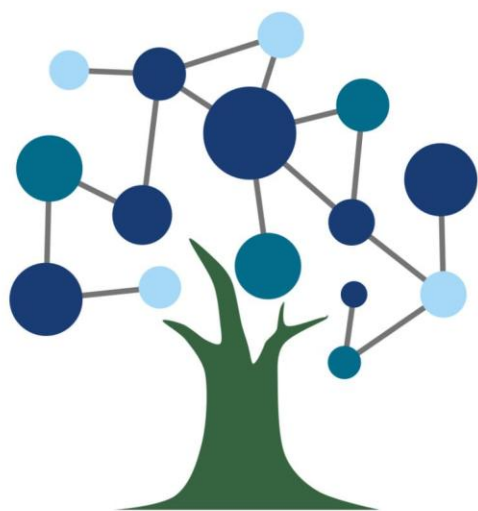




EGDC Case study – Bell Dispatch Screening

October 2025



**EUROPEAN GREEN
DIGITAL COALITION**



**Funded by
the European Union**

1 Introduction

The European Green Digital Coalition (EGDC) is an initiative of companies, supported by the European Commission and the European Parliament, based on the request of the EU Council, which aims to harness the enabling emission-reducing potential of digital solutions on all other sectors.

The main aim of the EGDC is to maximise the sustainability benefits of digitalisation within the ICT sector, while supporting sustainability goals of other key sectors such as energy, transport, agriculture, and construction. The Coalition recognises the need for science-based methods to estimate the reduction and avoidance of greenhouse gas (GHG) emissions by specific ICT solutions across sectors. This will accelerate the sustainability and circular transitions of these sectors while contributing to an innovative, inclusive, and resilient society.

To support the EGDC, a set of case study calculators are developed to provide a practical example of calculating the net carbon impact of a green digital solution in line with the European Green Digital Coalition (EGDC) methodology. This work aims to support the members of the EGDC with Action 2 of the [EGDC Declaration](#).

This case study methodology accompanies the ‘EGDC Case Study Calculator - Bell Dispatch Screening’ case study calculator and provides further details, additional context and transparency around the case study calculator to ensure the outcomes of the case study are interpreted and used correctly.



Disclaimer for European Parliament Pilot Project – European Green Digital Coalition (EGDC) Case Studies

The following disclaimer is intended to provide clarity and context for the case studies prepared as part of the EP Pilot Project, which have showcased the net carbon impact of specific digital solutions using the EGDC ICT Methodology developed during the project:

1. Purpose of the Case Studies:

The case studies served multiple purposes, including:

- **Development of the Methodology:** They contributed to the development of the EGDC ICT Methodology. These case studies were conducted concurrently with the methodology's creation and served as a valuable testing ground for its initial formulation.
- **Application Examples:** They provided practical examples of how the methodology can be applied to real-life use cases. These case studies were essential in demonstrating the practicality and effectiveness of the methodology when applied to concrete situations.
- **Identification of Improvement Areas:** By conducting these case studies, we aimed to highlight parts of the calculation in need of improvement. They shed light on the challenges and limitations inherent in using available data and indicated the necessary steps to move towards best practices in assessing net carbon impacts.

2. Data Quality as a Key Determinant:

It is imperative to emphasize that data quality is a fundamental determinant of the quality and reliability of the case studies. The accuracy and completeness of the data used significantly influence the outcomes and findings of these case studies.

It is essential to acknowledge that the data available for each case study may differ in terms of accuracy, granularity, and coverage. As a result, the case studies may not necessarily represent the best practice application of the EGDC ICT Methodology. Instead, they reflect the application of the methodology at various stages of data availability.

3. Liability for Errors/Omissions:

While reasonable steps have been taken to ensure that the information contained within the case studies is correct, the EGDC and Bell Canada give no warranty and make no representation as to its accuracy. EGDC and Bell Canada accept no liability for any errors or omissions that may be present in the case studies, methodology, or related information. Users and readers are advised to exercise their judgment and seek further clarification if needed, as the information provided may evolve over time and depend on external factors beyond EGDC's and Bell Canada's control.

4. Appropriate Use of the Case Study Calculators:

The case study calculators are intended for educational and informational purposes. They rely on certain assumptions and input data to generate results.

The results of the calculators are specific to the implementation of the ICT solution and may not be representative for other implementation contexts.

As such, it is imperative for users to refrain from directly extrapolating these results to ICT solutions or implementation contexts that may seem conceptually similar.

Instead, users are advised to use the calculators as a means to understand the practical application of the EGDC ICT Methodology, thereby equipping themselves with the knowledge required to develop customized calculators specifically tailored to their unique ICT solutions and implementation circumstances.

In conclusion, these case studies provide valuable insights into the calculation of the net carbon impact of digital solutions through the practical application of the EGDC ICT Methodology. However, it is vital to exercise caution when interpreting the results, considering the variances in data quality and the evolving nature of the methodology. The findings are indicative of the methodology's potential and its room for refinement as we work towards more accurate and comprehensive assessments of net carbon impacts.



2 Results

ICT Solution and assessment overview	Organisational contribution													
<p>Dispatch Screening is a proactive diagnostics solution that helps resolve connectivity issues before a technician is dispatched.</p> <p>When a repair appointment is scheduled, the system automatically runs remote diagnostics on Bell's connectivity services (Fibre Internet; DSL Internet; Wireless home internet) to identify and resolve common service issues, such as video, sync, or signal problems, without requiring any customer action. If the issue is resolved, customers are notified and given the option to cancel or keep the appointment via SMS or phone auto-dialer. If the appointment is subsequently cancelled, a technician driving a vehicle owned by Bell is not dispatched, which helps reduce either Bell's scope 1 or scope 2 emissions depending on the vehicle's drive train. This solution, if implemented by other Telcos could help reduce their scope 1 & 2 emissions.</p> <p>This case study is an ex-post assessment carried out on a sample dataset of Bell's use of dispatch screening from the period of roughly 1 year in 2024 and 2025, during which there were 211,541 separate technician appointments booked.</p>	<p>Bell Canada developed the solution to diagnose and resolve issues with their own network for commercial and residential customers. This aligns with A-level classification as defined by ITU-T L.1480 (contribution of implementing the integration or the innovation of the solution).</p> <p>The solution helps reduce Bell's scope 1 & 2 emissions associated with their vehicle fleet, reducing fuel and electricity consumption of their technician vehicles by reducing the number of call outs.</p>													
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3 Methodology

Assessment Objective	<p>The assessment aims to calculate the impact of Bell’s dispatch screening solution on emissions from technician truck rolls.</p> <p>The solution is operational in Ontario, Quebec and the Atlantic provinces of Canada.</p> <p>The assessment is carried out ex-post, with data from the sample on the total number of cancelled truck rolls and the number of truck rolls that still went ahead available.</p>
Solution Description	<p>Dispatch Screening is a proactive diagnostics solution that helps resolve connectivity issues before a technician is dispatched.</p> <p>When a repair appointment is scheduled, the system automatically runs remote diagnostics on Bell’s connectivity services (Fibre Internet; DSL Internet; Wireless home internet) to identify and resolve common service issues, such as video, sync, or signal problems, without requiring any customer action. If the issue is resolved, customers are notified and given the option to cancel or keep the appointment via SMS or phone auto-dialer.</p> <p>If the appointment is subsequently cancelled, a technician driving a vehicle owned by Bell is not dispatched, which helps reduce either Bell’s scope 1 or scope 2 emissions depending on the vehicle’s drive train. This solution, if implemented by other Telcos, could help reduce their scope 1 & 2 emissions.</p>
Solution Boundary	<p>This solution has been available to residential and SME customers in Quebec and Ontario, Canada for a longer time period but has more recently become available in the Atlantic provinces.</p> <p>Digital components: Running the dispatch screening solution requires:</p> <ul style="list-style-type: none"> • Authentication Hardware • Server • 5 x software bots <p>Non digital components: Bell Canada’s technician fleet</p>
Functional Unit	<p>The selected functional unit is per technician appointment booked per year.</p>



	<p>This is applicable in both the reference and solution scenario, as the solution works to cancel technician appointments before they occur.</p> <p>In the data sample, there were 211,541 separate technician appointments booked.</p>
Calculation Boundary	<p>Calculation represents the period of one year's sample data from 2024 and 2025.</p> <p>The geographic boundary of the solution is the Canadian Provinces of Quebec; Ontario; and the Atlantic Provinces (New Brunswick; Newfoundland and Labrador; Nova Scotia; and Prince Edward Island.)</p>
Reference scenario	<p>The reference scenario is essentially how technician appointments for Bell's customers occurred before the dispatch screening solution was available.</p> <p>A Bell customer (either residential or commercial) in Quebec, Ontario, or the Atlantic Provinces notices an issue and books a technician appointment to resolve their issue. The technician is then dispatched to resolve the issue, driving a Bell owned or leased fleet vehicle.</p>
Description of 1st order effects	<p>The dispatch screening solution did not require the installation of any new hardware or spinning up of hardware, with all infrastructure in place before the launch of the solution.</p> <p>Therefore, the only first order effects are the electricity consumption of servers that run the dispatch screening solution (2 x Authentication Hardware; Server; 5 x software bots)</p>
Description of 2nd order effects	<p>Bell's dispatch screening solution is run automatically when a repair appointment is scheduled to identify and resolve common issues. If resolved, customers are notified and can cancel their appointment.</p> <p>By cancelling their appointment, the technician does not need to drive to their address, reducing truck rolls and therefore fuel consumption.</p> <p>The avoided emissions mechanism is the reduced number of technician callouts, avoiding emissions from fuel consumption or EV charging.</p>



Description of higher order effects

Reduction in technician call outs creates a financial saving for Bell, reducing the total spend on fuel or for charging in the case of EV's.

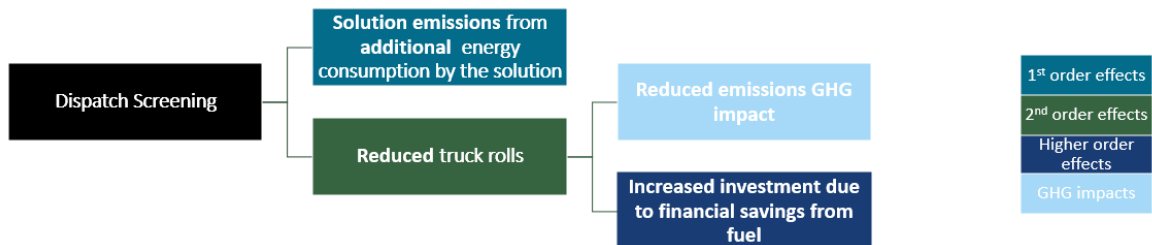
If all cost savings are invested into typical business carbon-intensive activities, this increase in emissions could result in a ~2% reduction of the total net impact.

We have calculated these higher order effects using the fuel economy of the most common vehicle in Bell's fleet, which we have assumed to be using diesel fuel. Based on the reported fuel economy of this vehicle, we have estimated the total volume of fuel saved which we then multiply by the average fuel cost at a Canadian forecourt during the sample period, as published by the Canadian government.

This financial saving is then multiplied by the Open CEDA emissions factor for "Satellite, telecommunications resellers, and all other telecommunications" to represent what re-investment of these savings would represent in terms of emissions.

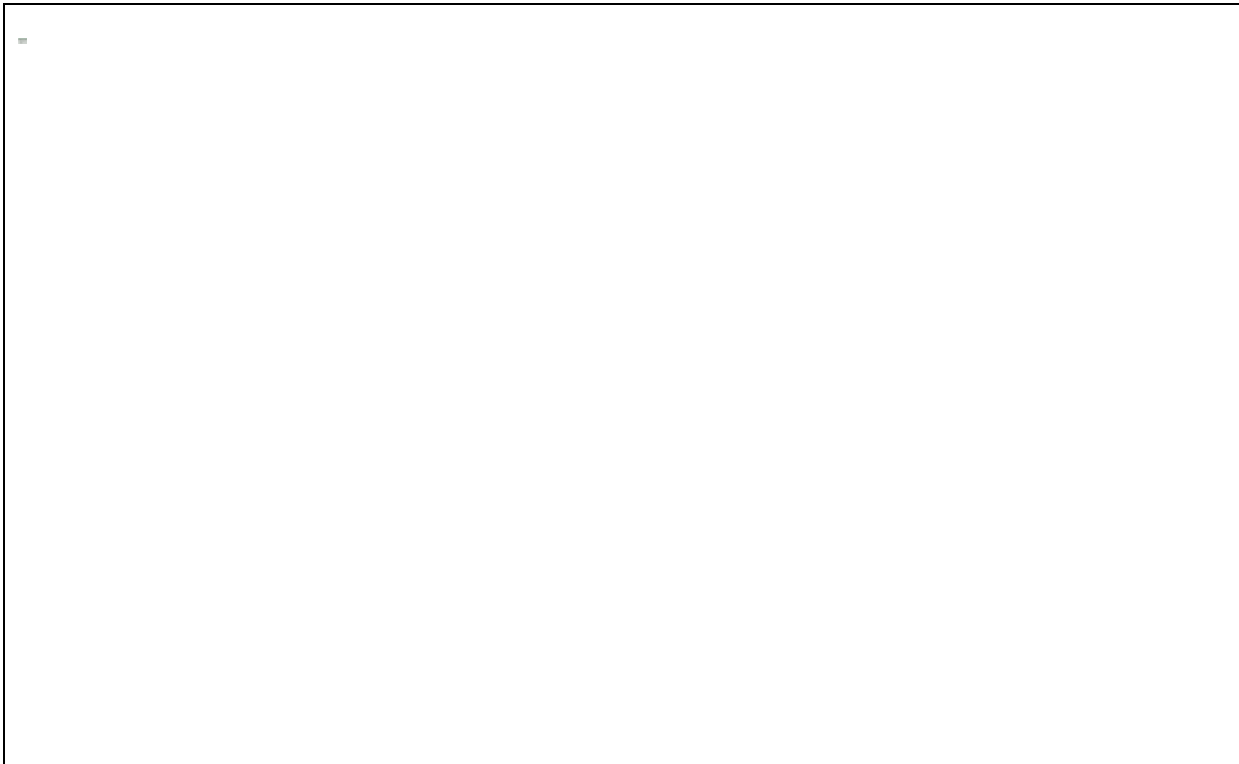
The total estimated rebound emissions are 0.54 tCO2e or around 2% of the total carbon savings enabled.

Mapping of 2nd order and higher order effects



Assessing the impact of higher order effects





<p>Description of calculation</p>	<p>1st Order Effects The solution emissions are calculated by summing the annualized energy consumption of the components required for use of the dispatch screening solution (2 x Authentication Hardware; Server; 5 x software bots) and multiplying this energy consumption by a grid emissions factor for Canada from the IEA.</p> <p>2nd Order Effects Bell provided 3 data sources from the sample period:</p> <ul style="list-style-type: none">• Fleet information and average distances for each region• Dispatch Screening Data• Hardware information <p>Information on their fleet was used to create a weighted average emissions factor for each region's fleet, reflected as kgCO₂e/km.</p> <p>They provided 4 distance ranges based on region and context. The regions are anonymized within the case study.</p> <p>The 2 contexts were "Rural" and "Urban", with a rural and urban distance provided for each region alongside a % split of truck rolls between rural and urban.</p> <p>In the dispatch screening data, there are 4 scenarios: "Cancelled Truck Rolls"; "Didn't Pass Dispatch Screening"; "Passed but Dispatched"; and "Not Eligible".</p>
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	<p>In the reference scenario, all 4 scenarios are applicable, whereas in the solution scenario, 3 of the 4 scenarios still occur: “Didn’t Pass Dispatch Screening”, “Passed but Dispatched”; and “Not Eligible” are applicable.</p> <p>In each scenario, the number of truck rolls in a region is split out using the % rural or urban figure provided by Bell and then multiplied to calculate total truck roll distance. This total distance for each scenario is multiplied by the weighted average fleet emissions factor for each region as described above.</p> <p>The total avoided emissions from reduced truck rolls therefore calculates as:</p> <p>(Sum of distance in all 4 scenarios*Weighted Average emission factor) – (Sum of distance in ¾ scenarios * Weighted Average emission factor)</p> <p>Net Carbon Impact Net carbon impact is calculated by subtracting the first-order emissions generated by the solution itself from the 2nd order effects. This ensures that the environmental benefit accounts for the emissions from energy consumed to operate the dispatch screening solution, providing a more accurate measure of the net reduction in greenhouse gas emissions.</p>
<p>Net Carbon Saving Impact of the Solution</p>	<p>Bell Dispatch Screening – Annual Impact</p> <p>1st order effect (emissions from solution components electricity consumption):</p> <ul style="list-style-type: none"> • 1.08 tCO₂e/year <p>2nd order effect (avoided emissions from reduced technician call outs):</p> <ul style="list-style-type: none"> • -27.50 tCO₂e/year <p>Total net carbon saving impact:</p> <ul style="list-style-type: none"> • -26.42 tCO₂e/year
<p>Uncertainty and sensitivity analysis</p>	<p>Total carbon savings enabled (tCO₂e):</p> <p>Calculated Net Avoided Emissions: -26.42</p> <p>Lower uncertainty range: -12.07</p>



	<p>Higher uncertainty range: -57.25</p> <p>Uncertainty analysis:</p> <p>Fleet emissions are the main uncertainty driver for the dispatch screening calculation. The calculator uses a weighted average per km emissions factor using the DESNZ conversion factors for 2025.</p> <p>Total carbon savings enabled (Lower range): -12.07 tCO₂e Total carbon savings enabled (Higher range): -57.25 tCO₂e</p> <p>Sensitivity analysis:</p> <p>A +/- 5% adjustment to total avoided truck roll distance or the weighted average fleet vehicle EF resulted in: +/- 5.21% change in emissions.</p> <p>A +/- 5% adjustment to Solution hardware electricity consumption or the Grid EF used resulted in: a +/- 0.21% change in emissions.</p>
<p>Assumptions</p>	<ul style="list-style-type: none"> • We assume the rural and urban distances provided for each region are accurate and conservative. • The calculation assumes that all data provided on IT hardware; fleet; and dispatch screening is complete and accurate. • In the absence of tracking what vehicle was used for each truck roll, we assume the weighted average emissions factor used is an accurate representation of fleet emissions. • Emissions factors for electric vehicles in Bell's fleet are calculated by adjusting the DESNZ EV emissions factors to account for Canada's grid emissions intensity in comparison to the UK's.
<p>Data sources</p>	<p>Data provided by Bell:</p> <ul style="list-style-type: none"> • Hardware Information.docx – containing electricity consumption of components • Fleet.xlsx – containing all the vehicles in Bell's technician fleet • Dispatch screening case study.xlsx – containing the number of technician call outs that were avoided through dispatch screening and all that still went ahead. <p>Emissions Factors:</p> <ul style="list-style-type: none"> • DESNZ 2025 Conversion Factors – Used for distance-based emissions factors for vehicles to calculate a weighted average fleet emissions factor for each region.



	<ul style="list-style-type: none"> • Emissions Factors 2025 - Data product - IEA – Used for Grid emissions factors to calculate solution IT emissions and the adjustment of UK specific vehicle emission factors. <p>Higher Order Effects: Ford Transit Connect (2014 - 2024) - Real MPG - used to calculate fuel savings from dispatch screening (most common model in Bell's fleet) Monthly average retail prices for gasoline and fuel oil, by geography – Used to calculate financial savings from dispatch screening solution</p>
<p>Input adjustments and key considerations for usage of results</p>	<p><i>Input adjustments can be made within the calculator for:</i></p> <ul style="list-style-type: none"> • Distance travelled per truck roll by region and context (Urban or Rural) • Can adjust the percentage split of truck rolls that fall into the urban or rural category. • Can adjust the % of each type of vehicle in the fleet, which changes the weighted average emissions factor. • Can input a different grid emissions factor to assess the impact of a change in location of IT/Server hardware
<p>'Do no significant harm' criteria</p>	<p>The solution only works to resolve customer connectivity issues and avoid unnecessary driving for Bell's technicians. Based on the % of technician appointments cancelled by dispatch screening (~2%) there is no risk of job loss currently for Bell technicians</p> <p>The electricity required to run the solution is minimal and requires no new hardware installation.</p>
<p>Key areas for improvement</p>	<ol style="list-style-type: none"> 1. More accurate calculation of truck roll distances by providing more regionalised averages rather than just "Urban" or "Rural" 2. Capturing which vehicle performed each truck roll to more accurately capture emissions from each technician appointment

