

Oracle Cloud Infrastructure: Technical Carbon Calculation Guidance to Support Customer Requests on Sustainability Reporting

OCI Data Center Engineering | Sustainability Team

February 2023, Version 1.0
Copyright © 2023, Oracle and/or its affiliates
Public

Purpose statement

This document provides technical guidance on how to calculate Oracle Cloud related carbon emissions for customer requests on sustainability reporting.

Disclaimer

This document in any form, software or printed matter, contains proprietary information that is the exclusive property of Oracle. Your access to and use of this confidential material is subject to the terms and conditions of your Oracle software license and service agreement, which has been executed and with which you agree to comply. This document and information contained herein may not be disclosed, copied, reproduced or distributed to anyone outside Oracle without prior written consent of Oracle. This document is not part of your license agreement nor can it be incorporated into any contractual agreement with Oracle or its subsidiaries or affiliates.

This document is for informational purposes only and is intended solely to assist you in planning for the implementation and upgrade of the product features described. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described in this document remains at the sole discretion of Oracle. Due to the nature of the product architecture, it may not be possible to safely include all features described in this document without risking significant destabilization of the code.

Table of contents

Purpose statement	2
Disclaimer	2
Our Commitment	4
Carbon Footprint Context	4
Carbon Footprint Customer Calculation	5
Calculation Methodology	5
Framework Alignment	6
References	6



Our Commitment

Oracle is building a more sustainable future and using technology as a force for good.

Oracle Cloud Infrastructure (OCI) endeavors to lead the way with our cloud regions. We challenge ourselves to address climate change and create a more circular economy. Oracle Cloud enables our customers to support their sustainable computing goals, while also achieving other benefits of the cloud, including security, reliability, and performance.

Oracle is setting the bar for environmental progress with goals that apply to our cloud regions:

- Carbon Neutral by 2025 including 100% renewable energy use for Oracle Cloud and Oracle operations,
- Net Zero by 2050 as aligned to the Exponential Roadmap Initiative, and
- 50% reduction in total emissions by 2030 relative to a 2020 baseline.

Carbon Footprint Context

Emissions accounting requires understanding that the same emissions that are Scope 1 or Scope 2 for one business are accounted as Scope 3 for another or may be deemed out of scope all together. The Greenhouse Gas Protocol (TGGP) allows for flexibility when determining how to classify a corporation’s emissions for voluntary carbon reporting.




Oracle Cloud Lifecycle	 Hardware Manufacturing	 Cloud and Applications	 End of Life Hardware
Hardware Manufacturer	Scope 1 Scope 2	Scope 3 (downstream)	Scope 3 (downstream)
OCI-Cloud	Scope 3 (upstream)	Scope 1 Scope 2	Scope 3 (downstream)
Hardware Disposal Vendor	Not Applicable	Note Applicable	Scope 1 Scope 2
Oracle Cloud Customer	Scope 3 (upstream) or Not Applicable*	Scope 3 (upstream)	Scope 3 (downstream) or Not Applicable*

Figure 1. Carbon emissions by scope for each participant in the Cloud value chain. Note, in corporate greenhouse gas accounting companies may opt to include upstream and downstream impacts one step removed from their value chain partners within their Scope 3 boundaries, or they may deem them out of scope and thus not applicable.

Oracle Cloud Infrastructure, for example, generates Scope 1, 2, and 3 emissions for Oracle Corporation, but for our customers who purchase our services, the allotted portion of these emissions qualifies as their Scope 3 emissions. The graphic depicts the life-cycle emissions associated with our value chain, our own activities, and our Oracle Cloud customers. Customers can estimate their

Our sustainability commitment to our customers

“Oracle is committed to embedding sustainability across our enterprise and delivering innovative cloud technology to accelerate meaningful change.”
- Safra Catz, CEO.

emissions using use emission factors from supplier emissions data as reported in annual sustainability reports and surveys such as CDP Climate Change.

Carbon associated with OCI cloud region operations is comprised of **Scope 1 – direct emissions**¹ associated with onsite emissions at the cloud regions and **Scope 2 – indirect emissions associated with the production of electricity** consumed by our cloud regions. Scope 2 emissions are reported in two forms: **location-based Scope 2 emissions** which account for the geographic location of our sites and inherent grid energy mix; and **market-based Scope 2 emissions** which account for the specific energy supply contracts in place and the specific energy suppliers’ emissions factors which can be zeroed out from the purchase of high-quality renewable energy². **OCI’s Scope 1 and 2 emissions contribute to our customers’ Scope 3 value chain emissions.**

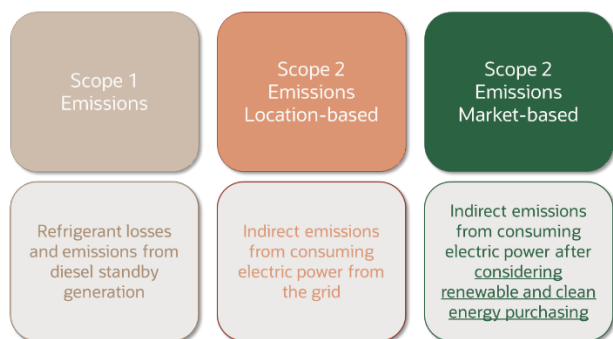


Figure 2. Sources of Oracle Cloud data center operational emissions.

Carbon Footprint Customer Calculation

To enhance transparency around the impact of our Oracle Cloud regions, we publish revenue-based carbon emissions factors to enable our customers to estimate their Scope 3 emissions across all Oracle products and services.

The formula for calculating carbon emissions is given below:

$$\text{Activity Data} \times \text{Conversion Factor} = \text{Carbon Emissions}$$

Using Oracle’s intensity metrics, customers can easily estimate their Scope 3 emissions using their monthly invoices. For the most current emissions factors, see Oracle’s [Clean Cloud OCI Data Sheet](#).

Calculation Methodology

Oracle’s Greenhouse Gas Inventory methodology is governed by the application of the Greenhouse Gas Protocol (TGGP) standards and guidance from CDP. Oracle’s emissions are externally assured by a third party using the ISO14064-3 greenhouse gas verification standard. Understanding that not every customer reports the same way, we value the importance of data and transparency. More information and details related to emissions and our full CDP Climate Change Response and program details are found on our website:

www.oracle.com/sustainability.

Framework Alignment



References

Oracle publishes social impact and environmental information in a variety of locations:

- **Oracle CDP Climate Change Survey:** <https://www.oracle.com/a/ocom/docs/cdp-climate-change-questionnaire-2022.pdf>
- **Oracle Clean Cloud Website:** <https://www.oracle.com/sustainability/green-cloud/>
- **Oracle Clean Cloud OCI Data Sheet:** <https://www.oracle.com/a/ocom/docs/corporate/citizenship/clean-cloud-oci.pdf>
- **Oracle Environmental Sustainability Website:** www.oracle.com/sustainability
- **Oracle ESG Hub:** <https://www.oracle.com/social-impact/esg-hub/>
- **Oracle Social Impact Report Website:** <https://www.oracle.com/corporate/citizenship/>
- **Oracle Social Impact Datasheet:** <https://www.oracle.com/a/ocom/docs/corporate/citizenship/ccr-datasheet.pdf>

Connect with us

Call +1.800.ORACLE1 or visit oracle.com. Outside North America, find your local office at: oracle.com/contact.

 blogs.oracle.com

 facebook.com/oracle

 twitter.com/oracle

Copyright © 2023, Oracle and/or its affiliates. All rights reserved. This document is provided for information purposes only, and the contents hereof are subject to change without notice. This document is not warranted to be error-free, nor subject to any other warranties or conditions, whether expressed orally or implied in law, including implied warranties and conditions of merchantability or fitness for a particular purpose. We specifically disclaim any liability with respect to this document, and no contractual obligations are formed either directly or indirectly by this document. This document may not be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without our prior written permission.

This device has not been authorized as required by the rules of the Federal Communications Commission. This device is not, and may not be, offered for sale or lease, or sold or leased, until authorization is obtained.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group. 0120

Disclaimer: If you are unsure whether your data sheet needs a disclaimer, read the revenue recognition policy. If you have further questions about your content and the disclaimer requirements, e-mail REVREC_US@oracle.com.