PURO STANDARD OUTPUT AUDIT REPORT

Orca

Puro Standard General Rules Edition 2023 (Version 3.1 published in 1.6.2023)

Audit Start - End date: 27.3.2024 - 15.4.2025

DNV Project Number: PRJN-868255

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Facility ID: 631817

Puro Standard: Geologically Stored Carbon Methodology Edition 2021, V1.1

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Attachments:

ATTACHMENT 1 GSC Compliance Checklist Edition 2023 – v1.1 – Monitoring Period Nov24-Feb25 – Final

Introduction

This report summarises the results and conclusions from the performed facility audit and output audit. The audit is performed as a formal part of the Puro Standard certification process. The key objective is to determine the compliance of the operations with the Puro requirements.

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Production facility standing data

(PURO General rules 3.1)

General information

Facility unique identity	631817
CO2 Removal Supplier registering the Production Facility	Climeworks AG.
Name	Orca
Location	Nordurvellir 4, 816 Ölfus, Iceland
Date on which the Production Facility became eligible to receive CORCs	01/12/2023
Removal Method(s) for which the plant is eligible to receive CORCs	Geologically Stored Carbon Edition 2021, v1.1
Production Facility has benefited from public support	No
Removal Method specific information as may be specified in the relevant Removal Method specific Methodology	Direct Air Capture and Geologically Stored Carbon

Base for calculations in Output report

Contributions Level 1	Total over period, tonne CO2-eq
C captured*	138.20
C loss	0.00
C stored	138.20
E capture	-60.36
E injection**	-0.97
E equipment***	0.00
CORCs	76.88

***** C captured is equal to C injected (gross) and therefore includes potential losses from venting or fugitive emissions prior to CO_2 injection

****** This figure includes energy use while injection system is on standby (not receiving CO_2)

*** No emissions were amortized during this monitoring period.

Short description of facility and any exclusions from verification scope observed

The Climeworks Orca facility is a Direct Air Capture plant in Iceland, where CO_2 is captured from the atmosphere using a sorbent. Captured CO_2 is transported and stored through Climeworks' partner, Carbfix. Here, the CO_2 is dissolved in water and injected into the subsurface to achieve permanent storage of CO_2 through rapid in-situ mineralisation. Climeworks AG, as the project applicant, has the relevant contractual agreements in place with all parties involved to ensure ownership of produced CORCs.

Statement of confidentiality

The contents of this report, including any notes and checklists completed during the audit will be treated in strictest confidence, and will not be disclosed to any third party without the written consent of the customer, except as required by the appropriate accreditation authorities.

Disclaimer

An audit is based on verification of a sample of available information. Consequently, there is an element of uncertainty reflected in the audit findings. An absence of nonconformities does not mean that they do not exist in audited and/or other areas. Prior to awarding or renewing certification this report is also subject to an independent DNV internal review which may affect the report content and conclusions.

Audit results

Detailed output removal verified

Contributions		Total over period, tonne CO2-eq
Level 1	**Level 2**	
C stored	C captured*	-138.20
C stored	C loss	0.00
E capture	Energy capture	47.70
E capture	Sorbent	6.75
E capture	Water	5.91
E injection**	Energy storage	0.97
E equipment***	Injection + transport equipment	0.00
E equipment***	DAC project equipment	0.00
	CORCs	76.88
	CORC factor (net removed / gross stored)	0.56
	Carbon stored (deducting losses)	-138.20
	Grey emissions / loss to LCA	61.3

***** C captured is equal to C injected (gross) and therefore includes potential losses from venting or fugitive emissions prior to CO_2 injection

****** This figure includes energy use while injection system is on standby (not receiving CO_2)

*** No emissions were amortized during this monitoring period.

Positive indications

• Maintained detailed and organised approach to data management. The people involved in the audit have expertise and detailed understanding of the operations, coupled with strong systems in place throughout.

Recommendations for improvement

• No recommendations for improvement with current operations

Audit findings

Detailed findings requiring corrective actions:

During this monitoring period, the data transmission of the energy meters at the injection site were malfunctioning. Therefore, a manual meter reading was taken for this monitoring period. Overall energy consumption is accounted for and no impact to Eproject and overall CORC calculation. The only result of this malfunction is the lack of the monthly consumption data. Climeworks applied an assumption for the monthly breakdown.

Minor Non-compliance raised with regards to the risk management around these meters. These meters are operated and maintained by local energy provider. This malfunction of data transmission of the smart meters was noticed by Climeworks in March and was logged in Climeworks' incident management system. Root cause and implementation of corrective measures to avoid further risk are ongoing, to be inspected in the next audit.

Conclusion

Conclusion	
The company is found compliant towards CORC requirement, and a certificate can be issued	Yes
The company is found NOT to be fully compliant towards CORC requirement and corrective actions are needed before a certificate can be issued	