

General information

Project name	Underground Forest Kockengen Korrel		
Project code	UGF-L-009		
Remover	Underground Forest		
Location	Kockengen, the Netherlands		
Area	0.0515	ha	
Start year	2025		
Duration	>1000	years	Estimated permanence of removal and storage
Holding pool	20%		Freed up when project is implemented

Per project

Baseline TEC	0	tCO2	Above Ground carbon if removed for project
Reference capacity	47	tCO2	Capacity of CO2 storage
LCA emissions	2.61	tCO2	Project related emissions
Storage potential	45	tCO2	Projection -/- baseline

Removal certificates

Holding pool	9		
Potential units issued	36	CRCs	

Field Code	Field name	Size (ha)	Owner	Notes
001	25015 Kockengi	0.0515	De heer Hendric	Carbon storage rights handed ov

er to Underground Forest BV

#	Field code	Field	Year	Date	Sample depth	SOC/AGB
001	001	25015 Kockengen	2022	1-1-2022	-	AGB
003		#REF!	#REF!			
005		#REF!	#REF!			
006		#REF!	#REF!			
007		#REF!	#REF!			
008						
009						
010						
011						
012						

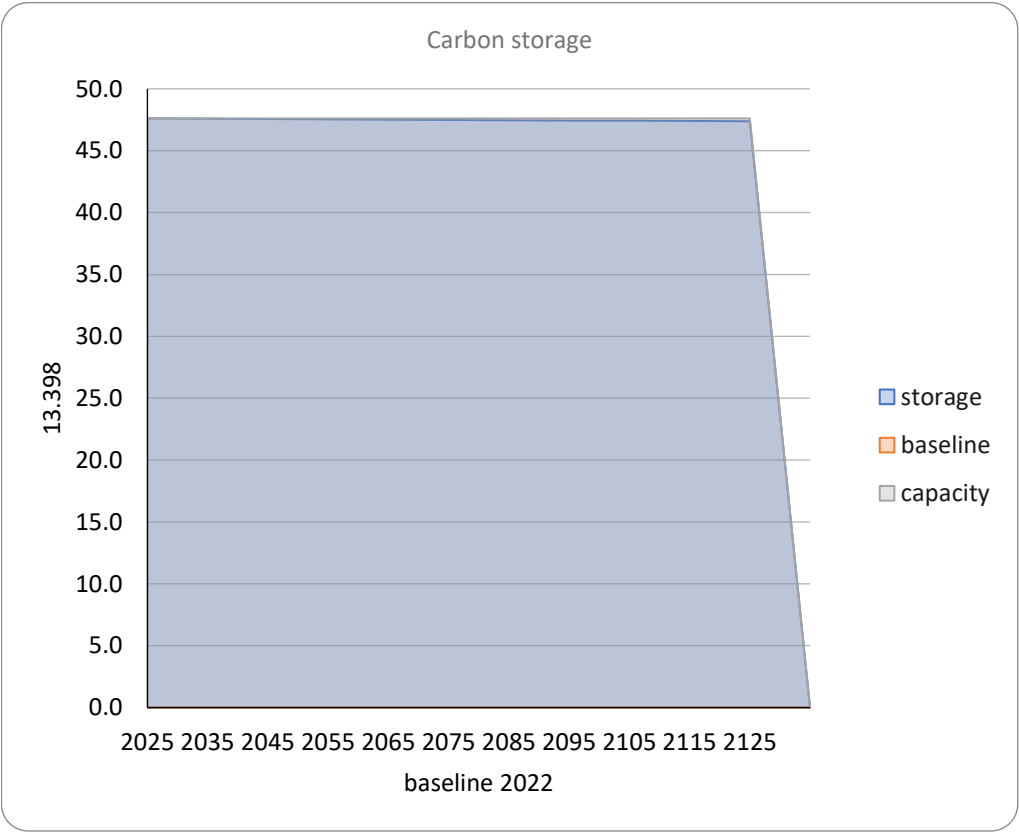
Carbon (g/kg)	AGB (tCO2/ha)	Sample/report nr.
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-	0.00	ESA baseline
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Carbon Calculation for UGF-L-009

Surface	0.0515 ha	Fields tab
Baseline AGB	0.00 tCO2e/ha	Measurements tab
Capacity Reference	47.6 tCO2e	References tab

	storage	baseline	capacity
2025	47.6	0.00	48
2035	47.6	0.00	48
2045	47.6	0.00	48
2055	47.5	0.00	48
2065	47.5	0.00	48
2075	47.5	0.00	48
2085	47.5	0.00	48
2095	47.4	0.00	48
2105	47.4	0.00	48
2115	47.4	0.00	48
2125	47.4	0.00	48



Sources

value	source	URL	Notes
CEDA aboveground biomass carbon	https://climate	https://dataceda	2010-2020 data
SOC	A critical review of the conventional SOC to SOM conversion fac		
Density	Wageningen L	https://edepot.w	We've added these soil density le
From C to CO2	3.666666667		

Yearly degradation 0.00005 <https://www.shr> Klaassen, 2015

Variables	Unit	Source	Corrections
Density of spruce	460 kg/m ³	https://www.wur	https://nmbu.bra
Spruce C content	50.35% C content	https://www.sciencedirect.com/scie	
Wood moisture content	12.70% water content	https://www.sciencedirect.com/scie	
CO2e per m3	754 kgCO2/m ³	formula from:	https://opslagco2
Total volume of spruce	63.18 m3		
Total Underground CO2	47.6 tCO2		
Total amount of wood	29 t		

	Number	Pile length (cm)	Pile point (cm)	Volume per pile (m3)
palenplan	66	12.0	14.0	0.333
	87	11.0	14.0	0.292
	28	10.5	14.0	0.273
	37	9.0	14.0	0.219
	0	0.0	0.0	0
	0	0.0	0.0	0
	0	0.0	0.0	0
	0	0.0	0.0	0
	0	0.0	0.0	0
	0	0.0	0.0	0
More lengths	0	0.0	0.0	0

Mean point diameter (cm)	14.000	14.000	14.000	14.0
Increase per m (cm)	0.800	0.800	0.800	0.800
Pile length	12.0	11.0	10.5	9.0
Mean measurement point	6.000	5.500	5.250	4.500
Mean diameter	0.188	0.184	0.182	0
Volume pile	0.333	0.292	0.273	0.219
Piles per m3	3.002	3.419	3.661	4.567

levels to the calculation factors tab

<https://www.agriculturejournals.cz/pdfs/jfs/2007/03/05.pdf>

<https://doi.org/10.1016/j.sbsbs.2019.05.001>

ence/article/pii/S0378112720310987

inhout.nl/motivatie#:~:text=Hout%2C%20afhankelijk%20van%20de%20soort,stoffen%20(2%2D15%25)

Volume sum (m3)
22
25
8
8
0.000
0.000
0.000
0.000
0.000
0.000

Total emissions	2.61 tCO2
emissions forestry	0.70 tCO2
emissions transport	0.76 tCO2
emissions piling	1.15 tCO2

Emissions forestry

Wood production emission: 11.1 kgCO2/m3 <https://www.storaenso.com/-/med>

Emission pile driving

	1152 kgCO2	
Hours per day	8 hr/day	
Piles per day	110 piles/day	
Piles project	218 piles	
Days of work	2	2 days
w2w emissions (diesel)	3.2 kgCo2/l	
2t2 bensing	2.7 kgCo2/l	

Distance 61.4 km Zijdepark 10, Ouderkerk aan de Vecht
Portengen 102, Kockengen

Per project

Lowboy		
Lowboy per km	0.5 l/km	
Diesel usage	61.4 l	196.48 kgCO2

per dag

Bus per km	0.07 /km	
Amount of days	2 days	
Bensin usage	16.37333333 l	89.73 kgCO2

Diesel per hour	4 diesel/hour	
Per day	32 l/dag	102.4 kgCO2
Chainsaw	1 l/u	
Hours per day	1 hr/day	
Usage per day	1 hr/day	2.74 kgCO2

Per pile

Piles per hour	13.75 piles/hr	
Pile driver	15 diesel/hr	
Diesel per pile	1.09 diesel/pile	
Amount of machines	1 machines	
Usage per pile	1.09 l/pile	761.02 kgCO2

Transport emission 760 kgCO2

Manhay distance	273 km	Rue du Vicinal 2, Manhay
Empty outward trip	1.5 km	
Total	409.5 km	
Usage truck	3.45 km/l	
Usage diesel	119 l/rit	
Amount per trip	38 m³	
Trips	1.7	
Trip rounded	2.0	
Total usage	237 l diesel	

fixed values
calculated fields
variable Rene
info transporter
info UF
fixed rene
fixed transport