

General information

Project name	Underground Forest Sleeuwijk		
Project code	UGF005		
Location	Sleeuwijk, Netherlands		
Area	2.12	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	2.59	tCO2	Above Ground carbon if removed for project
Reference capacity	105	tCO2	Capacity of CO2 storage
LCA emissions	7.85	tCO2	Project related emissions
Storage potential	95	tCO2	Projection -/- baseline

Removal certificates

Holding pool	19		
Potential units issued	76	CRCs	

Field Code	Field name	Size (ha)	Owner	Notes
002	Sleeuwijk	2.12		

#	Field code	Field	Year	Date	Sample depth	SOC/AGB
001	002	Sleeuwijk	2020	1-1-2020	-	AGB
003		#REF!	#REF!			
005		#REF!	#REF!			
006		#REF!	#REF!			
007		#REF!	#REF!			
008						
009						
010						
011						
012						

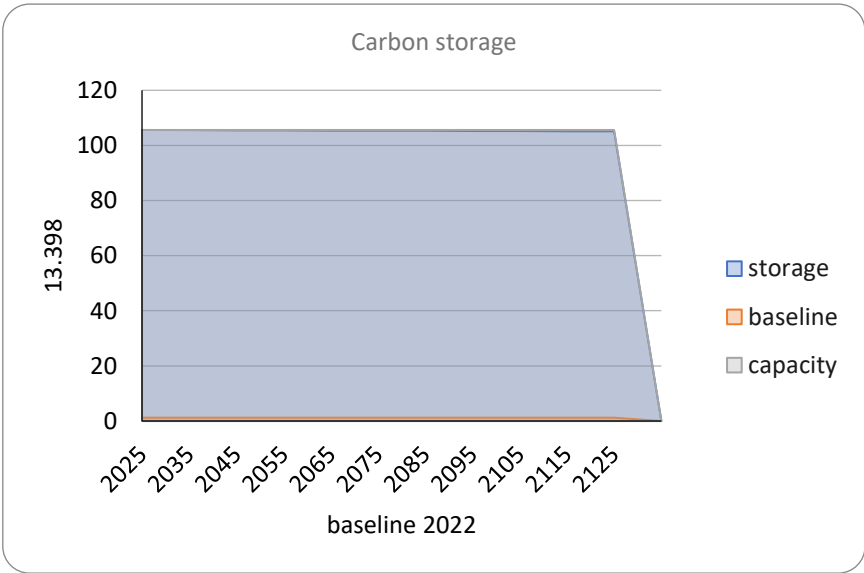
Carbon (g/kg)	AGB (tCO2/ha)	Sample/report nr.	Notes
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-	1.22	ESA	baseline
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Carbon Calculation for UGF005

Surface	2.12 ha	Fields tab
Baseline AGB	1.22 tCO2e/ha	Measurements tab
Capacity Reference	106 tCO2e	References tab

	storage	baseline	capacity
2025	106	1.22	106
2035	106	1.22	106
2045	105	1.22	106
2055	105	1.22	106
2065	105	1.22	106
2075	105	1.22	106
2085	105	1.22	106
2095	105	1.22	106
2105	105	1.22	106
2115	105	1.22	106
2125	105	1.22	106



Sources

value	source	URL	Notes
CEDA aboveground biomass carbon		https://climate	2010-2020 data
SOC		https://dataceda	A critical review of the conventional SOC to SOM conversion factor (G
Density	Wageningen L	https://edepot.w	We've added these soil density levels 1
From C to CO2	3.666666667		

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

Variables **Unit** **Source**

Density of spruce	460 kg/m ³	https://www.wur.nl/upload_mm/e/b/6/44e9e1ce-04b8-4b7c-bdce-0f269b999fa3_picabif.pdf
Spruce C content	50.35% C content	https://www.sciencedirect.com/science/article/pii/S0378112720310987
Wood moisture content	12.70% water content	https://www.sciencedirect.com/science/article/pii/S0378112720310987

CO2e per m3	754 kgCO2/m ³	formula from:
Total volume of spruce	140 m3	
Total Underground CO2	106 tCO2	
Total amount of wood	64 t	

	Number	Pile length	Volume per pile (m3)
palenplan	70	12.5	0.301
	99	12.0	0.282
	165	11.5	0.264
	20	11.0	0.247
	63	10.5	0.230
	69	10.0	0.214
	44	9.5	0.198
	21	9.0	0.183
	5	8.5	0.169
meer lengtes invoegen		8.0	0.247

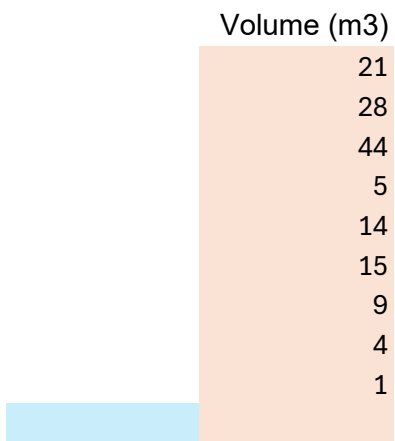
Mean point diameter (cm)	12.500	12.500	12.500
Increase per m (cm)	0.800	0.800	0.800
Pile length	12.5	12.0	11.5
Mean measurement point	6.250	6.000	5.750
Mean diameter	0.175	0.173	0.171
Volume pile	0.301	0.282	0.264
Piles per m3	3.326	3.545	3.786

eoderma,Volume 156, Issues 3–4, 15 May 2010, Pages 75-83)
to the calculation factors tab

Corrections

https://nmbu.brage.unit.no/nmbu-xmlui/bitstream/handle/11250/2688667/2016-43_Carolin%20Fischer_%28INA%29.pdf?sequence=1&isAllowed=y <https://www.agriculturejournals.cz/pdfs/jfs/2007/03/05.pdf>

[https://opslagco2inhout.nl/motivatief#:~:text=Hout%2C%20afhankelijk%20van%20de%20soort,stoffen%20\(2%2D15%25\)](https://opslagco2inhout.nl/motivatief#:~:text=Hout%2C%20afhankelijk%20van%20de%20soort,stoffen%20(2%2D15%25))



12.500	12.500	12.500	12.500	12.500	12.500
0.8	0.8	0.8	0.8	0.8	0.8
11.0	10.5	10.0	9.5	9.0	8.5
5.5	5.25	5	4.75	4.5	4.25
0	0	0	0	0	0
0.247	0.230	0.214	0.198	0.183	0.169
4.053	4.348	4.677	5.044	5.458	5.925

12.500	
0.8	
8.0	
4	
0	
0.155	
6.457	

Total emissions	7.85 tCO2
emissions forestry	1.56 tCO2
emissions transport	0.99 tCO2
emissions piling	5.31 tCO2

Emissions forestry

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

Emission pile driving

		5306 kgCO2
Hours per day	8 hr/day	
Piles per day	100 piles/day	
Piles project	556 piles	
Days of work	6	6 days
w2w emissions (diesel)	3.2 kgCo2/l	
2t2 bensine	2.7 kgCo2/l	

Distance 56.9 km

Per project

Lowboy		
Lowyboy per km	0.5 l/km	
Diesel usage	56.9 l	182.08 kgCO2

per dag

Bus per km	0.07 /km	
Amount of days	6 days	
Bensin usage	45.52 l	748.35 kgCO2

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

Per pile

Piles per hour	12.5 piles/hr	
Pile driver	15 diesel/hr	
Diesel per pile	1.2 diesel/pile	
Amount of machines	2 machines	
Usage per pile	2.4 l/pile	4270.08 kgCO2

[ia/documents/download-center/certificates/wood-products-approvals-and-certificates/epd/stora-enso-epd-kvh-](#)

Transport emission	985	kgCO2
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Manhay distance	236	km
Empty outward trip	1.5	km
Total	354	km
Usage truck	3.45	km/l
Usage diesel	103	l/rit
Piles per trip	200	
Trips	2.78	
Trip rounded	3	
Total usage	308	l diesel

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