



Final Forecast for Forest Carbon Capture

Álfabrekka, Grímsnes- og
Grafningshreppi

FOREST^{CARBON}**CO₂**

 skógræktin

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Introduction

This report gives the final carbon capture forecast project at Álfabrekka, Grímsnes- and Grafningshreppur in South Iceland, regarding the project validation. The area is 100 ha of which 97 ha are planted with tree seedlings. The project start date was in autumn 2022. The project is owned by Ásmundur Skeggjason.

Information on the area and the afforestation project was obtained from an assessment of site conditions and project design report by Jón Þór Birgisson forestry adviser. Further information on tree species distribution was provided by the project owner.

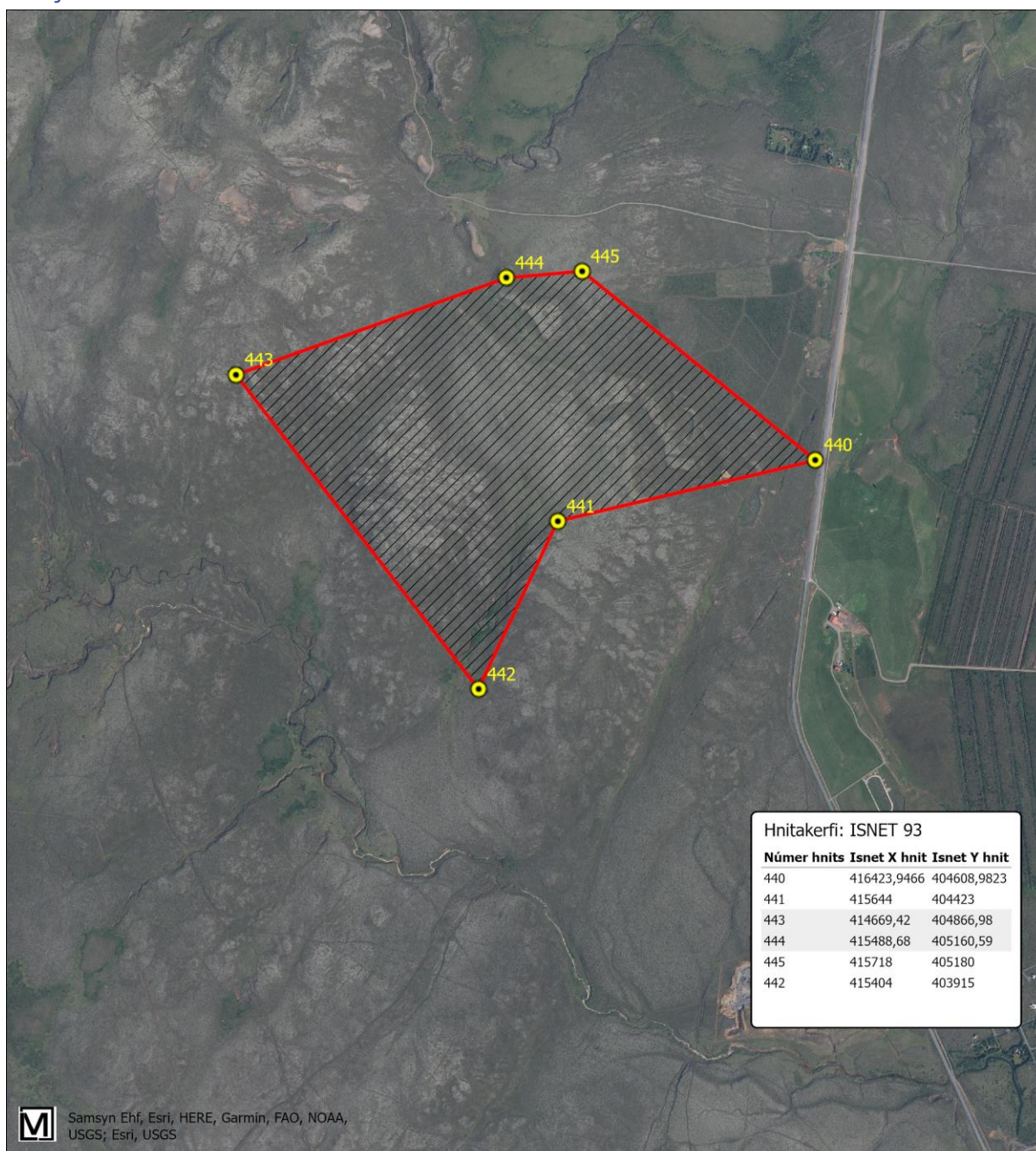
The carbon sequestration data was generated using the Icelandic Forest Carbon Calculator (<https://reiknival.skogur.is/>) which is a forest growth model based on long-term studies on various tree species across the country.

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Project location



Samningssvæði

Jörð: Álfabrekka
 Sveitarfélag: Grímsnes- og
 Landnr: 2112004
 Stærð samningssvæðis í ha: 100
 Jarðareigandi: Ásmundur Skeggjason

Kortagerð: Jón Þór Birgisson



Mælikvarði: 1:15.000 Dagsetning: 16.2.2022

0 250 500
m



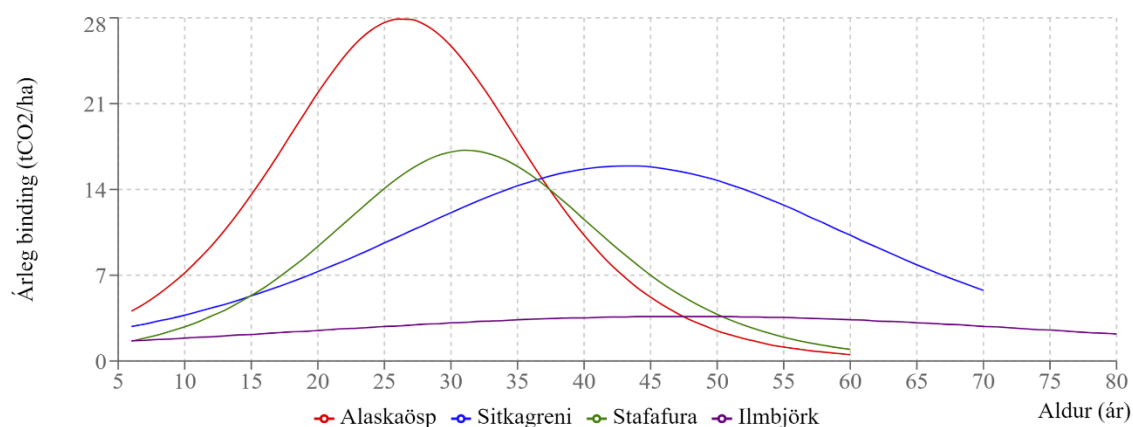
- Hnitpunktar Álfabrekka
- Samningssvæði Álfabrekka



Prerequisites of the Carbon Capture forecast

The table shows the land area planted for each tree species and their site classes. The total planted area is 97 ha.

Tree species	Land area (ha)	Site class
<i>Black cottonwood</i>	6	AÖ16
<i>Sitka spruce</i>	43	SG14-19
<i>Lodgepole pine</i>	46	SF15
<i>Downy birch</i>	2	IB8

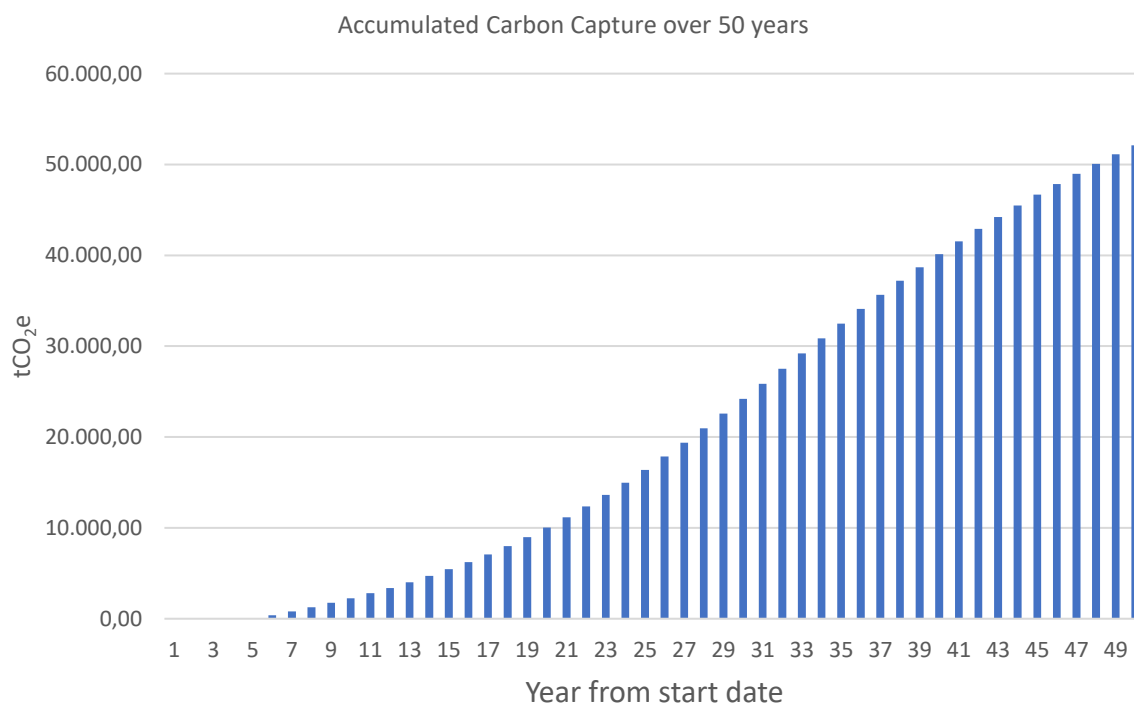
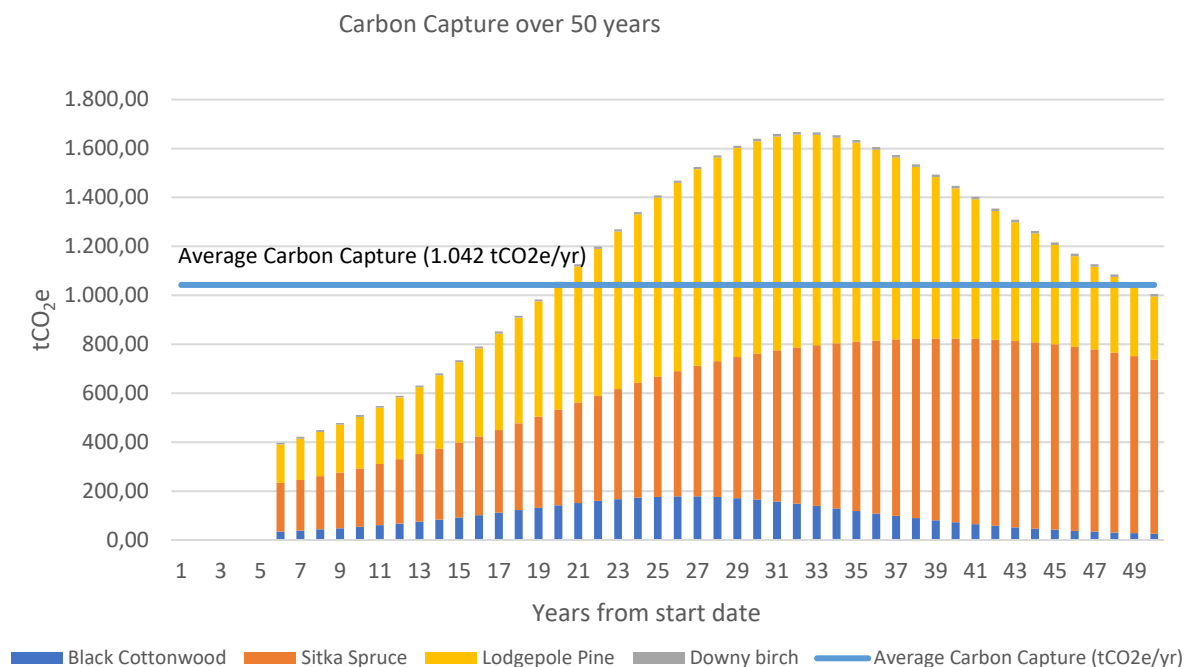


The figure above shows the annual carbon capture over 50 years at South Iceland inland sites, elevation 0-150 m a.s.l., for black cottonwood (alaskaösp), Sitka spruce (sitkagreni), lodgepole pine (stafafura) and downy birch (ilmbjörk). Source: <https://reiknival.skogur.is/>.

Carbon capture for the first five years after project start date is presently omitted from the final forecast. This is due to possible initial risks to tree seedlings and the rate of soil recovery after site preparations at the site. This omittance will be reevaluated on the forthcoming verification at year five.

Final forecast for Álfabrekka

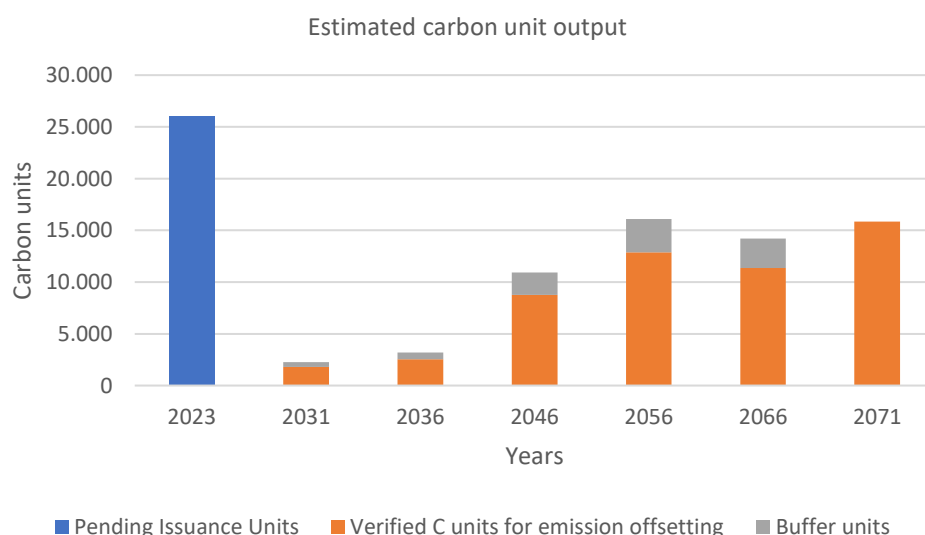
The annual average carbon capture at Álfabrekka is estimated to be 1.042 tCO₂e/yr. over a 50-year period. The total carbon capture is estimated to be 52.120 tCO₂e (see figures below).



Carbon units

Summarized in the table below are estimates of carbon units produced in the afforestation project Álfabrekka. A total of 26.060 Pending Issuance Units are issued to the project following validation. At each verification, 80% of the verified carbon units can be used for emission offsetting. The rest, 20%, is withheld as buffer units until the project's last date.

Years from project start date (Note: year 10 is optional)	Start of certification period	Project verification dates	Total Pending Issuance Units per certification period (50%)	Buffer units (20%)	Verified C units for emission offsetting per certification period (80%)	Total carbon units
5	1.10.2022	1.10.2026	0,0	0,0	0,0	0,0
10	1.10.2027	1.10.2031	1.128,7	451,5	902,9	2.257,3
15	1.10.2032	1.10.2036	1.593,3	637,3	1.274,6	3.186,6
25	1.10.2037	1.10.2046	5.470,8	2.188,3	4.376,7	10.941,7
35	1.10.2046	1.10.2056	8.049,4	3.219,8	6.439,5	16.098,9
45	1.10.2057	1.10.2066	7.101,3	2.840,5	5.681,1	14.202,6
50	1.10.2067	1.10.2071	2.716,4	1.086,6	2.173,1	5.432,8
Totals			26.060	10.424	20.848	52.120



The figure above illustrates carbon units issued to the project. Following validation in 2023, half of the estimated total C units are issued as Pending Issuance Units. The verified C units produced are shown in verification years. Also shown are non-tradable buffer units, which are withheld until the last project date in case of any losses of verified C units from a project.

Carbon unit evolution in Álfabrekka for 50 years following the project start date in 2022. The validation in 2031 is optional. The table continues on the next page.

Vintage	Estimated total carbon units (tCO ₂ e/yr)	Pending Issuance Units (50%) (tCO ₂ e/yr)	Estimated verified carbon units (tCO ₂ e/period)	Buffer units (20%) (tCO ₂ e/period)	Estimated carbon units for emission offsetting (tCO ₂ e/period)
2022	0	0			
2023	0	0			
2024	0	0			
2025	0	0			
2026	0	0	0	0	0
2027	398	199			
2028	422	211			
2029	449	224			
2030	479	239			
2031	511	255	2.257	451	1.806
2032	548	274			
2033	590	295			
2034	632	316			
2035	682	341			
2036	735	368	3.187	637	2.549
2037	791	395			
2038	852	426			
2039	917	458			
2040	983	492			
2041	1.055	527			
2042	1.127	563			
2043	1.199	599			
2044	1.270	635			
2045	1.340	670			
2046	1.408	704	10.942	2.188	8.753
2047	1.469	735			
2048	1.525	763			
2049	1.572	786			
2050	1.612	806			
2051	1.640	820			
2052	1.660	830			
2053	1.667	834			
2054	1.665	833			
2055	1.654	827			
2056	1.635	817	16.099	3.220	12.879
2057	1.606	803			
2058	1.574	787			
2059	1.535	768			

2060	1.493	747			
2061	1.448	724			
2062	1.403	701			
2063	1.355	678			
2064	1.309	654			
2065	1.263	631			
2066	1.216	608	14.203	2.841	11.362
2067	1.170	585			
2068	1.127	563			
2069	1.085	543			
2070	1.045	522			
2071	1.006	503	5.433	1.087	4.346
Total	52.120	26.060	52.120	10.424	41.696

SKÓGAR KOLEFNI **CO**  ₂

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