



Project description (PDD): Álfabrekka in Grímsnes

Template for carbon projects that seek certification according to FCC rules

1.2 Version

Date: 17. January 2023

Project description prepared by:

Project manager: Ásmundur Skeggjason

Name of the legal entity applying: Skógarálfar ehf.

Assistance with project description: Gunnlaugur Guðjónsson, Icelandic Forest Service
Úlfur Óskarsson, Icelandic Forest Service
Hafliði H. Hafliðason, Lífheimur

Completed and submitted to certification bodies on: **January 23, 2023**

Contact email: as@hofdi.is

Serial number in the Icelandic Climate Registry **FCC057**

Put the serial number for the project, location, country code and size:

Assignment	Serial number in Lí	Earth	Country no.	Municipality	Gross (ha)	Net (ha)
Álfabrekka	FCC057	Álfabrekka	233248	Grímsnes and Grafningshreppur	100	97

Before this project description is prepared, the following documents must be available:

1. A cultivation plan that includes a section on the Care Plan. The cultivation plan must include a precise species breakdown per hectare in order to make an accurate forecast of carbon sequestration.
2. Calculations from the Forest Carbon Calculator, see: <https://reiknival.skogur.is/>
3. Project Idea Note - PIN prepared in the Forest Carbon Project Calculator. For more information, please contact: Hafliði H. Hafliðason on hafliði@lifheimur.is.
4. Calculations from IceForest on the value of forestry in the proposed round. Further information is provided by Gunnlaugur Guðjónsson at gulli@skogur.is.

Note:

1. When completing each section of this document, it is important to refer to the requirements outlined in the relevant section of the Forest Carbon and in the online guidelines. You can expand text areas if they are not large enough.
2. This project description may only be used for one project.
3. The project description, map of area(s) and table from the Forest Carbon Calculator will be available in the Climate Registry once the application has been confirmed.
4. At the end of each section, there is a table where additional data can be added for certification bodies.
5. A project manager keeps a copy of the project description and any additional data during a project.

For information: Updates to the project description: Abstract – prepared by the Icelandic Forest Service

Issue No.	Date	Changes	Author
1	6/9 2022	First draft	DB
2	17/1 2023	Various updates	DB

For Projects: Version Control of completed PDDs:

Version No	Date	Amendment	Author
-------------------	-------------	------------------	---------------

Catalogue

<u>1. Project description</u>	4
1.1 Key project dates.....	5
1.2 Nature of tasks	5
1.3 The forestry area	5
1.4 Compliance with the law	6
1.5 Projects in accordance with the official forestry policy.....	6
1.6 Add-ons	6
<u>2. Project management</u>	9
2.1 Obligations of landowners and project managers	9
2.2 Cultivation plan	10
2.3 Safety and permanence	13
2.4 Consultation and public organisation	15
2.5 Monitoring.....	15
2.6 Registration and how to avoid double counting.....	17
2.7 Carbon accounting and reporting	17
3.1 Initial Carbon Status	18
3.2 Kolefnisleks	18
3.3 Carbon sequestration	19
3.4 Net carbon sequestration	21
<u>4. Environmental quality</u>	24
<u>5. Corporate Social Responsibility</u>	27

1. Project description

Write a concise description of the project: Strategy and objectives, type of forest area and treatment, as well as economic, social and environmental benefits.

Keep the following in mind when making a description:

- **Strategy and goals:** Production of wood, carbon sequestration, utilisation of land that is otherwise unused.
- **Type of forestry area:** Drained land or mountain meadows.
- **Treatment:** Commercial forestry with large trees, tillage and thinning and final cutting for use.
- **Economic benefits:** Creates income for landowners.
- **Social benefits:** Used for outdoor activities.
- **Environmental benefits:** Sequesters carbon, habitat for organisms.

Assignment	Description
Álfabrekka	<p>Production of carbon credits on an area of about 100 hectares in the Álfabrekka forestry area at Þóroddsstaðir in Grímsnes in South Iceland. The project is intended to improve land and air quality as well as generate income for landowners from the sale of carbon credits. The project will also create jobs in the area in the construction and maintenance of the area.</p> <p>The project is a multi-purpose forest with an emphasis on carbon sequestration, soil protection, outdoor recreation, timber production and other ecosystem services. The project has a wide range of environmental, economic and social benefits. The 100 hectares that are planned to be planted in this area at Álfabrekka at Þóroddsstaðir in Grímsnes in South Iceland are intended to sequester carbon and thus contribute to the fight against climate issues. This project also offers increased opportunities for landowners to increase income opportunities on the land, e.g. through planting and selling certified carbon units. The land has not been cared for very much in recent years and quite a while since it was a permanent residence. With afforestation, landowners want to cultivate the land even further and build up forestry areas and thereby increase the use of the land. This project is therefore important for landowners/occupants so that they can continue to generate income from the land. The policy is to follow this cultivation plan for 50 years (until the end of the carbon sequestration agreement) at least and possibly the part of the forest that is still being sequestered will be allowed to remain, until there is little or no sequestration. Then it will be possible to replant and the trees that will be felled, the aim is to continue to use the best possible so that the carbon remains in the trees/wood for as long as possible.</p>

The Project Manager confirms that everything stated in this document is correct and done to the best of our knowledge.

Yes No

1. Terms of Participation

1.1 Key project dates

1.1.1 Provide the start and end date of planting and the duration of the project.

Assignment	Planting start date	Year of planting	Planting end date	Project duration
Álfabrekka	01/06/2022	2022	01/10/2022	50 years

Provide the following documents to confirm the start date of the project:

Voucher	Select one option	Documents for the project
FSK1.1.1 Agreement on the financing of forestry	No	Own financing
Other data	Other data	Documents for the project
FSK1.1.2 Delivery slips from the nursery	Yes	FSK1.1.2_Álfabrekka_slóðar_framkvæmdir.pdf.
FSK1.1.3 Confirmation of the assessor or coordinates of planting	Yes	Planting sites at Álfabrekka 2019 and 2023

1.2 Nature of tasks

1.2.1 As far as is known, the land to be planted has been deforested for the past 25 years.

Yes No

The following documents shall be submitted to show that the country has been deforested for 25 years:

Voucher	Select at least one option	Documents for the project
FSK1.2.1 Aerial view over 25 years old	Yes	Older aerial photo at LMÍ from 1996 Aerial photo from 2020 and drone video see
FSK1.2.2 Recent aerial photograph	Yes	https://www.youtube.com/watch?v=2w9LgZBJWa8&t=3s
FSK1.2.3 Confirmation from an independent party	No	

1.3 The forestry area

1.3.1 Are there obligations in the country?

Yes No

1.3.3 Identify the owners of land by filling out a special form with contact information about the landowner and the occupier of the land.

FSK1.3.3 Forest Carbon Information on Landowner – Returned Yes No

In addition to the contact information document, the following additional information must be provided to confirm ownership. If land is being rented out, the owner's consent must be presented.

Confirmation of ownership	Tick at least one option	Documents for the project
FSK1.3.3.1 Deed of surrender	No	N/A
FSK1.3.3.2 Registers from the Real Estate Registry	Yes	Printout from the Property Registry
FSK1.3.3.3 Agreement on the financing of forestry	Yes	Own financing
Consent of the owner if land is being rented out	Land is rented out	Documents for the project
FSK1.3.3.4 Certified copy of a registered lease agreement	No	
Other documents	Other information	Documents for the project
FSK1.3.3.5 Other information to confirm the landowner's consent	Yes	Landowners' Statement

1.4 Compliance with the law

1.4.1 The project is, as far as is known, in accordance with current laws and regulations on forestry in Iceland when this document is completed.

Yes No

1.4.2 Is there any known, current, older (in the last 5 years) or upcoming court cases in connection with the project.

Yes No

1.4.3 Is there any known injunctions or warnings by the authorities in connection with the project.

Yes No

1.4.4 What kind of systems or procedures are in place to ensure that the project manager is aware and ensures compliance with applicable laws and possible legislative changes?

FSK1.4.4 Statement of the Project Manager – Laws. **Returned Yes No**

NOTE: Certification bodies must confirm that the project manager has familiarized themselves with applicable laws and regulations.

1.5 Projects in accordance with the official forestry policy

1.5.1 As far as is known, the project is carried out and managed in accordance with the official forestry policy and sustainability criteria for forestry.

Yes No

1.6 Add-ons

Describe how the carbon sequestration resulting from the project is or will be in addition to what would have happened if the project had not been created, as well as the financial carbon support.

1.6.1 Legal requirements

1.6.1.1 Are there legal requirements stipulating that the project must establish afforestation?

Yes No

1.6.1.2 Is the purpose of afforestation in the project to compensate for another forest area that has been lost?

Yes No

1.6.2 The Role of Carbon Capital

1.6.2.1 How much of the start-up costs for the first 10 years (all years included) will be processed for carbon capital?

Estimated value of carbon credits as percentage of total cost for the first 10 year is 22,7% as per final forecast report, while as per PIN it is 23.63%. However this could be 100% if sale of pending units were included.

(Even if we equate carbon capital with start-up costs, the carbon should actually be enough to continue to pay for administrative costs after the tenth year.)

1.6.3 Financing

Financial summary as per PIN report:

Verkefni: Álfabrekka		
Summary	Unit	Scenario
About the project		
Duration	Years	50
Total Area	Ha	100
Black Cottonwood	Ha	6
Sitka Spruce	Ha	30
Lodgepole Pine	Ha	62
Downy birch	Ha	2
Planting time	Duration	2022
Carbon capture		
Black Cottonwood	tCO2e/ha/yr	15,01
Sitka Spruce	tCO2e/ha/yr	11,14
Lodgepole Pine	tCO2e/ha/yr	10,37
Downy birch	tCO2e/ha/yr	4,33
Estimated mean C sequestration (per ha/yr)	tCO2e/ha/yr	10,63
Estimated total annual C sequestration (ár)	tCO2e/yr	1.063,07
Estimated total C sequestration over 50 years	tCO2e	53.153,44
Pending carbon units	tCO2e	37.207,41
Pending carbon units to the project	tCO2e	29.765,93
Security carbon units kept aside	tCO2e	7.441,48
Seedlings		
Black Cottonwood	Number	15.000
Sitka Spruce	Number	75.000
Lodgepole Pine	Number	155.000
Downy birch	Number	5.000
Costs		
Land rent	ISK	0
Management and monitoring	ISK	3.800.000
Seedlings	ISK	18.150.000
Planting	ISK	11.325.000
Site preparation	ISK	11.860.000
Registration and certification	ISK	1.300.000
Total cost	ISK	46.435.000
Income		
Carbon units	ISK	265.767.200
Timber sales	ISK	239.000.000
Total Income	ISK	504.767.200
Income - costs	ISK	458.332.200
Assets/ha (carbon credits)	ISK	2.657.672
Assets/ha (timber)	ISK	2.390.000
Assets/ha (total)	ISK	5.047.672
Cost/ha (total)	ISK	475.350
Cost per carbon unit	ISK	894
Estimated sale price per carbon unit	ISK	5.000
Proportion of establishment costs returned year 10	%	23,63%

1.6.3.2 Describe in one or two sentences why it is believed that the project could not be realized without the income from the carbon units sold (in the case of a sale) or without the possibility of creating or using carbon credits (in the case of a non-sale).

Assignment	Statement of Financial Benefit
Álfabrekka	The production of carbon credits increases the viability of a project and makes it financially feasible for the landowner. Without carbon capital, it is unlikely that a landowner will see an opportunity in engaging in the relevant forestry.

1.6.4. Barriers (fill in if carbon financing is negligible or not achievable.)

Describe what obstacles the project has overcome that set it apart from traditional business projects.

Assignment	Obstacles
Álfabrekka	As the project is already fully financed by the project owner with carbon finance, therefore no obstacles exist.

Submit the following documents for the project in support of items 2, 3, and 4:

Voucher	Check	Documents for each project
FSK1.6.4.1 Cost estimate for the project along with a breakdown of estimated costs and revenues.	Yes	Project Idea (PIN)
Other documents	Measure each data	Documents for the project
FSK1.6.4.2 Further data on barriers	No	

2. Project management

2.1 Obligations of landowners and project managers

2.1.1 Landowners have signed a declaration of the following commitments:

- Comply with the rules that apply to the project
- The area in question will be permanently reforested
- Comply with the submitted plan for planting and care throughout the project period
- Comply with the law and follow government policies
- Replant if or when it comes to logging
- Replant in the same place or similar if the forest is damaged by wind, fire, disease or construction, see section 2.3.
- When the land is sold, new landowners shall be informed of the obligations that membership of Skógarkolefni entails and all agreements that have been made on carbon sequestration
- Monitor and maintain certification throughout the contract period in accordance with FCC rules or ensure that the project manager is responsible for it, see section 2.5
- If something causes the forest's carbon reserves to decrease, it must be reported immediately to the Icelandic Forest Service and a report on the event must be submitted within 6 months
- Ensure that the registration, sale and deregistration of pending units due to transfer to permanent forest carbon units is always correct in the Icelandic Climate Registry ICR. The project owner is responsible for this himself or herself or has a project manager assigned to do so, see section 2.6.
- Provide true and accurate information on the forest carbon units in accordance with these rules, see section 2.7.
- Comply with rules on the use of the Skógarkolefni logo, see rules on the Skógarkolefnir website

Confirm: Yes No

Provide the following additional information to confirm the commitment of the landowner/occupier:

Landowner/Occupier Commitment	Tick at least one option	Documents for the project
FSK2.1.1 Agreement with the landowner containing the terms and conditions stated above	No	Own financing
FSK2.1.2 Signed declaration from the landowner containing the terms and conditions stated above	Yes	Signed statement
FSK2.1.3 Signed declaration from the occupant containing the terms and conditions stated above	No	Not applicable

2.1.2 The Project Manager, if other than the owner, has signed a declaration of the following commitments:

- Comply with the rules that apply to the project
- Comply with the law and follow government policies

- Monitor and maintain certification throughout the project period in accordance with FCC rules unless the owner of the land has undertaken it, see section 2.5
- Ensure that the registration of pending units, their sale and deregistration due to transfer to permanent Forest Carbon Units is always correct in the Icelandic Climate Registry ICR.
- Provide true and accurate information on the forest carbon units in accordance with these rules, see section 2.7.
- Present prospective buyers of forest carbon credits with Skógarkolefni's guidelines on carbon accounts and record in contracts for the sale, see section 2.7
- Comply with the rules on the use of the FCC logo and introduce them to landowners and buyers of forest carbon units, see rules on the Skógarkolefni website

Confirm: Yes No

Landowner/Occupier Commitment	Tick at least one option	Documents for the project
FSK2.1.2.1 Signed statement from the project manager containing the terms stated above	Yes	Signed statement

2.2 Cultivation plan

2.2.1 Is there a grant application for afforestation for the project?

Yes No

Voucher	Nature of the project	Partner (e.g. Kolviður)
FSK2.2.1	Not applicable	Not applicable

2.2.2 Is there a cultivation plan for the project?

Yes No

2.2.3 Specify (i) where to find a detailed description of treatment during the initial period (up to 10 years) and (ii) record the long-term management objectives for the project (including the care plan that will be followed – e.g. no intervention, weeding and method of renewal) during the project and beyond:

Assignment	(i) Where are the objectives of management during the founding period outlined?	(ii) Long-term management goals during a project and beyond
Álfabrekka	Care plan (part of a cultivation plan)	Carbon sequestration and timber production

Provide the following additional information for the project to confirm the care plans during the start-up period as well as the location and breeding plans:

To confirm the management of the initial period	Select at least one option	Documents for the project
FSK2.2.3.1 Data from the maintenance plan (part of the cultivation plan)	Yes	Cultivation plan

FSK2.2.3.2 Application for a grant for afforestation	No	Not applicable
FSK2.2.3.3 Financial analysis of costs and revenues	Yes	Project idea PIN
To confirm location/breeding plans	Select at least one option	Documents for the project
FSK2.2.3.4 Cultivation map that complies with the Forest Carbon Card's map rules (digital image or form file)	Yes	Cultivation plan
Other documents	Specify what	Information/documents for the project
FSK2.2.3.5 Other information	No	Not applicable

NOTE: Maps with the outskirts of the forest and planting areas must be uploaded to the Climate Registry of Iceland upon certification. The project will then be added to the FCC's LUK coverage.

2.2.4 Describe the key strategy and long-term goals of the project.

Assignment Project Strategy and Objectives

Production of carbon credits on an area of about 100 hectares in the Álfabrekka forestry area at Þóroddsstaðir in Grímsnes in South Iceland. The project is intended to improve land and air quality as well as generate income for landowners from the sale of carbon credits. The project will also create jobs in the area in the construction and maintenance of the area.

A multi-purpose forest with an emphasis on carbon sequestration, soil protection, outdoor recreation, timber production and other ecosystem services. The project has a wide range of environmental, economic and social benefits.

Álfabrekka

The 100 hectares that are planned to be planted in this area at Arnaldsstaðir in Fljótsdalur, are intended to sequester carbon and thus contribute to the fight against climate issues. This project also offers increased opportunities for landowners to increase income opportunities on the land, e.g. through planting and selling certified carbon units. The land has not been cared for very much in recent years and quite a while since it was a permanent residence. With afforestation, landowners want to cultivate the land even further and build up forestry areas and thereby increase the use of the land.

This project is therefore important for landowners/occupants so that they can continue to generate income from the land. The policy is to follow this cultivation plan for 50 years (until the end of the carbon sequestration agreement) at least and possibly the part of the forest that is still being sequestered will be allowed to remain, until there is little or no sequestration. Then it will be possible to replant and the trees that will be felled, the aim is to continue to use the best possible so that the carbon remains in the trees/wood for as long as possible.

Provide the following information for the assignment:

Vouchers	Select at least one option	Documents for the project
FSK2.2.4.1 Information on the skills of key employees	Yes	CVs of key employees
FSK2.2.4.2 Confirmation of previous experience of implementing or managing similar projects	Yes	CVs of key employees
Other documents	Specify what	Documents for the project
FSK2.2.4.3 Other information	No	Not applicable

2.2.5 Describe what kind of afforestation will be involved within the project.

Assignment Construction of afforestation as a project

Álfabrekka

A multi-purpose forest with an emphasis on carbon sequestration, soil protection, outdoor recreation, timber production and other ecosystem services, see cultivation plan.

2.2.6 Provide the following information to project parties.

Assignment	Álfabrekka
Role:	Project management
Name:	Ásmundur Skeggjason
Address	Blikanes 6
Zip code	210 Gardabaer
Telephone number	895-3000
E-mail address	as@hofdi.is
Assignment	Álfabrekka
Role:	Consultancy
Name:	Gunnlaugur Guðjónsson
Address	Bjarkasel 6
Zip code	700
Telephone number	860-3565
E-mail address	gulli@skogur.is
Assignment	Álfabrekka
Role:	Consultancy
Name:	Hafliði H. Hafliðason
Address	Laufás 4
Zip code	700 Egilsstaðir
Telephone number	899-9599
E-mail address	hafliði@lifheimur.is

Assignment**Maintenance and Installation**

Role:	Projects related to maintenance and planting (e.g. fencing, tillage etc.)
Name:	Ásmundur Skeggjason
Address	Blikanes 6
Zip code	210 Gardabaer
Telephone number	895-3000
E-mail address	as@hofdi.is

2.2.7 If the cultivation and care plan does NOT include information about who is involved in the project, their technical skills and experience, please specify this here:

Assignment**Who is involved in the project, technical skills and experience**

Álfabrekka Professionals (contractors) will be hired to, among other things, plant and earthworks.

2.3 Safety and permanence

1. Identify all possible risks to the permanence of the project (1) in each risk category
2. In categories with M/M, M/H, H/M, H/H, L/H, or H/L probability/effect of an event, describe how the risk will be minimized (2)
3. Outline what evidence you have to support your assessment of each risk category

Risk assessment and mitigation

Risk category	Potential risks	Event probability (L/M/H)	Event Impact (L/M/H)	Mitigation plan	Accessible data for each risk type
Legal/social (including land ownership, project management, and funding)	Change in ownership	L	M/H	Commitment of landowners and project managers	Signed declaration
Natural Disorder: Fire	Spring wildfires in the immediate vicinity	L	M	Fire safety plan, Easy access to water	Fire safety plan
Natural Distortion: Wind	Windfall	L	M	Not needed	Not needed
Natural Disorder: Drought/Flood	Unusually severe droughts	L	L	Not needed	Not needed
Natural Disorders: Pests and Diseases	Rusts and insects	L	M	Forest will be mixed tree species composition	Cultivation plan
Suitability of species in current and future climates	Tree species not adapted to warming winter	L	M	Mixed species and provenance selection, relatively short rotation forestry	Care plan
Livestock	Sheep browsing on small seedlings	L	M/H	Protection by constructing fence	Not needed

2.4 Consultation and public organisation

2.4.1.1 Describe how local stakeholders were identified, how the plan was consulted and summarise the main findings of this consultation.

Assignment	Who was consulted	Consultation process
Álfabrekka	Grímsnes- og Grafningshreppur, Mayor	Development permit

2.4.1.2 Explain how concerns and issues that arose were addressed and describe any changes made to the project structure as a result.

Assignment	Issues that arose and changes to the project as a result
Álfabrekka	No issues arose

Provide the following additional documents to confirm the scope of the consultation undertaken and the changes that resulted from this consultation:

To confirm the scope and outcome of the consultation	Tick at least one option	Documents for the project
FSK2.4.1.1 Grant application confirming the scope and outcome of the consultation	Yes	Development permit
FSK2.4.2 EIA ¹ / Environmental declaration confirming the scope and outcome of the consultation	Not required	Not applicable
Other documents	Specify what	Documents for the project
FSK2.4.3 Other data on the consultation and its conclusion	No	Not applicable

2.5 Monitoring

Monitoring changes in carbon reserves

The first monitoring and verification should take place five years after the start date. Subsequent monitoring and verifications should take place at least in year 15 and then every ten years during the project.

Projects shall use the Forest Carbon Calculator for year 5 and then appropriate methods approved by the Climate Department of the Icelandic Forest Service for year 15 and thereafter.

¹ Environmental Impact Assessment

2.5.1 Monitoring plan

Which one	Name of the person responsible (individual/organisation)	
Who is responsible for project monitoring?	Ásmundur Skeggjason	
Monitoring in year 5	Completed by (insert date of first certification period – (See table on pending forest carbon credits in section 3.4)	
Forest carbon criteria in year 5 for monitoring and certification	Quality audit after planting on February 1, 2023 Performance assessment 5 years after planting 1 October 2027	
Monitoring per year 10 –	When – Insert an end date for comparison with the methodology that is likely to be used during the certification period at the end of year 10 (See table on pending forest carbon units in section 3.4)	
Monitoring criteria for the Forest Carbon in year 5 (if the forest is slow-growing)	N/a	
Full monitoring of the Forest Carbon in year 15 and longer (if the forest is fast-growing)	N/a	
Monitoring per year 15	Select method – Provide a name for the tasks if different methods will be used within a group	When – Insert an end date for comparison with the methodology that is likely to be used during the certification period at the end of year 15 (See table on pending forest carbon credits in section 3.4)
Year 15 and beyond: Full monitoring and certification	Yes	October 1, 2037
Year 15 and longer: Basic monitoring and self-certification (provided that criteria are met)	No	
Frequency of monitoring after year 15 during the project period	Select the likely frequency of monitoring	
Every 5 years (optional)	No	
Every 10 years at the end of each certification period (minimum)	Yes	
Valve monitoring and certification	Required	When – Enter an expiration date that is at the end of the certification period. (See table on suspended forest carbon units in section 3.4)
Year 15 and beyond: Full monitoring and certification	Yes	October 1, 2072

2.5.2.1 Is the project certified or is applying for certification on criteria other than carbon sequestration?

Yes No

2.5.2.2 *If yes*, state whether the certification of the project is through The Forest Stewardship Council FSC or The Programme for the Endorsement of Forest Certification PEFC and provide the relevant certification number.

Assignment	FSC or PEFC?	FSC or PEFC certification number
------------	--------------	----------------------------------

2.6 Registration and how to avoid double counting

2.6.1.1 Has the project been certified or approved by another carbon standard or requested one?

Yes No

2.6.1.2 *If yes*, specify what is involved:

Assignment	Requested certification or certified by another carbon standard	Number from another carbon standard
------------	---	-------------------------------------

2.6.2 Do you agree to follow the rules of use of the Icelandic Climate Registry?

Yes No

2.7 Carbon accounting and reporting

2.7.1.1 Is it ensured that all carbon purchasers (current and future) are aware of the guidelines of the Icelandic Climate Registry on requirements?

Yes No

2.7.1.2 Are declarations or requirements regarding the expected carbon sequestration of a project (from the landowner, project manager or private party) in accordance with the guidelines of the Icelandic Forest Carbon Fund?

Yes No

2.7.2 *If yes*, indicate where the requirements have come from and provide examples/images/URLs to the certification body.

Media	Tick all the boxes that apply	Documents for the project
FSK2.7.2.1 On-site markings	No	
FSK2.7.2.2 Websites	No	
FSK2.7.2.3 Advertising brochures, etc.	No	
Other documents	Specify what	Documents for the project
FSK2.7.2.4 Other media	No	

3. Carbon sequestration assessment

3.1 Initial Carbon Status

The land considered for this afforestation project was hilly – untouched and had not been cultivated. Land use has been limited to a little sheep grazing from neighboring farms. Forest carbon calculator takes into account forestry conditions.

3.1.1.1 Will there be a significant increase in the area's carbon reserves without the project?

Yes No

3.1.1.2 *If yes*, describe in quantities, for each of the participating projects, the foreseeable changes in carbon reserves in the area without the involvement of the project.

Provide the following additional documents to confirm the assumptions or calculation of the starting position:

Vouchers	Mark at least one vegetation and soil type	Documents for the project
FSK3.1.1 Vegetation map	Yes	Afforestation plan
FSK3.1.2 Field survey of vegetation and soil type	Yes	Afforestation Plan
Other documents	Specify what	Documents for the project
Other information	No	Not applicable

3.2 Kolefnisleks

Leakage is GHG emissions outside the project boundary but within the country as a result of the project (e.g. displacement of agricultural activities might result in deforestation or intensification of use of non-wooded land elsewhere). Leakage is significant if it results in GHG emissions of magnitude $\geq 5\%$ of the project carbon sequestration over the duration of the project. There is no leakage associated with the project activity.

3.2.1 Specify the current land use in the project. Describe how the project will affect it (in the project area) and whether they will mean changes or increases in land use (outside the project area).

Assignment	Current land use (s.s. mikil beit)	What kind of impact will the project have on land use? (i.e. grazing will be stopped)	How will the project affect land use in a larger area? (e.g. the landowner will reduce the total number of sheep on a larger area, so there will be little change in the strength of agriculture there)
Álfabrekka	Protected land for forestry	A forest is formed	Nothing Beyond Earth

3.2.2.1 Will there be any significant increase in emissions over a larger area of land due to the forestry area in the project area? (A significant increase refers to $\geq 5\%$ of the estimated carbon sequestration of the new forest area).

Yes No

3.2.2.2 *If yes*, the extent of the leakage (increased emissions over a larger geographical area) must be assessed and included in carbon calculations. See more in Skógarkolefni.

3.2.2.3 *If a carbon leak occurs as a result of the project*, describe how the leakage will be monitored during the project period.

Carbon Leakage No Carbon Leakage

Provide the following additional documents to confirm the assumptions or calculations of the carbon leakage:

Vouchers	If the carbon leakage is significant, tick both columns	Documents for the project
FSK3.2.2.1 Map of areas and nearby areas where attention is drawn to the risk of carbon leakage	No	Not applicable
FSK3.2.2.1 More accurate calculations of carbon leakage are a part of the Forest Carbon Calculator	No	Not applicable
Other documents	Specify what	Documents for the project
FSK3.2.2.3 Other information	No	Not applicable

3.3 Carbon sequestration

Forest Carbon Calculator (Skógarkolefnisreiknir) on the Icelandic Forest Service website is used to predict the project carbon sequestration.

Factors that can cause sequestration or release in afforestation project at Álfabrekka.

1. Emissions from soil due to site preparation

Mechanical site preparation can result in emissions from soil and litter (dead vegetation). No direct measurements have been carried out in Iceland on this, but the method used to assess soil sequestration includes emissions from tillage i.e. comparing the carbon reserves of areas adjacent to forests with areas under forestry where site preparation was applied. The carbon reserves of forested areas have been found to store more carbon than comparable forest-free areas, and the carbon reserves increase with increasing age of the forest. Although the net carbon sequestration for the first years after afforestation is positive for dryland sites, the first 5 years is not included in the calculations for cautionary reasons, to accommodate possible higher initial emissions due to site preparation than assumed in the Forest Carbon Calculator. The Forest Carbon Calculator uses three different coefficients for soil sequestration. The coefficients include the emissions that occur as a result of site preparation. The different coefficients for soil carbon sequestration in excess of emissions for different sites are the following:

Type of site

Type of site	Carbon sequestration per year in excess of emissions (tonnes/ha/year)	Total carbon sequestration over 50 years in excess of emissions (tonnes/ha)
Sparsely vegetated dry land (<20-30% vegetation cover)	1,881	94,05

Semi- to fully vegetated dry land (>20-30% vegetation cover)	1,340	67,0
Drained mires	- 2,187	-109,35

2. Sequestration in litter

Litter is defined as a small dead organic material accumulating on the forest floor. Research in Iceland shows that during afforestation, carbon storage in litter averages around 0.517 tons CO₂ per ha per year following planting. Hence, litter storage in the project in Álfabrekka is estimated 97 ha x 0.517 = 50 tons CO₂e.

3. Emissions from dead wood

When the forest grows and is not thinned, some trees die due to competition for light. The carbon that belonged to biomass becomes dead wood. This also happens when forests are thinned. Dead wood can be both above-ground parts of standing dead trees or logs lying on the forest floor. Dead wood can also be underground in the stumps and thick roots of dead and felled trees. The carbon reserves in dead wood usually increase with the age of forests as more dead trees and stumps are added to the reserve. However, the reserves are also being depleted due to decomposition. It is our experience from measurements in cultivated forests in Iceland that new forests that are not thinned to any extent usually have no or very little dead wood. Zero emissions are therefore expected from dead wood in the project in Álfabrekka.

4. Emissions due to fertilizer applications

Fertilizer application with nitrogen fertilizer (nitrogen = N), can result in evaporation of N in the form of N₂O. The international emission index is 0.01 kg N₂O-N per kg N in synthetic fertilizer. One ton of N in fertilizer is therefore releasing 10 kg of N in the form of N₂O. This corresponds to 4.68 tons of CO₂ emissions. In Iceland the recommended application rate is 10-12 grams of fertilizer per seedling (see the blue spoon). The recommended planting density is around 2,500 seedlings per hectare, which makes around 30 kg of fertilizer per hectare, of which 20% is N. The project in Álfabrekka covers 97 hectares, and uses around 2,910 kg fertilizer, which makes around 0.58 tons N, which is equivalent to 2,71 tons CO₂ emissions.

5. Sequestration/release in vegetation other than trees

Icelandic studies have shown considerable fluctuations in carbon reserves in vegetation other than trees during afforestation, but in the long term (50 years) there has been neither an increase nor a decrease in the carbon reserves of vegetation other than in the trees in forests. Therefore, neither sequestration nor emissions from vegetation other than trees are expected.

Summary for Álfabrekka (50 years)	
1. Emissions from soil due to site preparation:	N/A
2. Storage in litter:	50 tons CO ₂ e
3. Emissions from dead wood:	N/A (Estimated close to zero)
4. Emissions from fertilizer application	-2.7 tons CO ₂ e
5. Sequestration/release in vegetation other than trees:	0.0 tons CO ₂ e

The completion of the Forest Carbon Calculator must be completed to evaluate the project and net carbon sequestration. The results must be uploaded to the Climate Registry and made available to the public along with this project description once certification has been achieved.

3.3.1 If necessary, use the space below to explain calculations in more detail.

Submit the following additional documents for the project to confirm the assumptions and calculation of carbon sequestration.

Vouchers	Tick the	Documents for the project
FSK3.3.1 Results from the Forest Carbon Project Calculator	Yes	Final forecast report
Other documents	Specify what	Documents for the project
FSK3.3.2 Other information	No	

NOTE: The final calculation of the FCC must be uploaded to Lí when certification has been achieved.

3.4 Net carbon sequestration

The Forest Carbon Calculator must be completed, including taking into account the starting position (3.2) and carbon leakage (3.3) to find out what the net carbon sequestration is.

The carbon baseline is included in the calculations and there is a zero chance of any carbon leakage therefore not included in the table.

Long-term binding is divided into certification periods corresponding to the monitoring periods discussed in section 2.5 above. When monitoring and verification are completed at the end of each certification period, pending Forest Carbon Units will be converted to Forest Carbon Units.

3.4.1 List the Forest Carbon Units Pending by the certification periods that will be assigned to the project and the insurance credits *[this information can be retrieved from the Forest Carbon Calculator. It is necessary to provide one table for the project].*

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

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

4. Environmental quality

4.1 Provide information on whether EIA is necessary for afforestation.

Assignment	Is the EIA necessary?
Álfabrekka	No, cf. Act No. 106/2000 on Environmental Impact Assessments, where the area is less than 200 ha in area and not in a protected area.

4.2 Biodiversity

4.2.1 For projects that are not subject to EIA, specify whether the areas or surrounding areas are in any of the following protection categories: Protected areas (FLS), Water protection areas (VVS), Neighbourhood protection areas (HVS), Landscape protection areas (LVS).

Assignment	Conservation category in an area	Conservation class near area
Álfabrekka	The area is not protected according to any law and does not fall into the category of land types that enjoy special protection according to the Nature Conservation Act No. 60/2013.	There are no protected areas close to the forestry area.

4.2.2 For projects that are not subject to the EIA, please explain how rare or endangered species have been taken into account as well as protected areas.¹

Assignment	Consideration of rare endangered species/species or protected areas
Álfabrekka	There is no place to find rare species in the area.

4.2.3 Biodiversity: Explain all the benefits of the project in terms of biodiversity

Item	Projects where profits are generated	If a benefit arises, explain in more detail
In particular, native species or natural self-seeding	<i>Not applicable</i>	
Contributes to creating/improving key habitat types, such as birch forests or wetlands	<i>Not applicable</i>	
Promotes development suitable for a diverse life	Álfabrekka	The emergence of forests creates habitats for a large number of organisms. The biodiversity of soil organisms, fungi, insects and birds is likely to increase. The biodiversity of other groups of organisms is likely to remain unchanged.
Is in an important area for biodiversity conservation	<i>Not applicable</i>	
Another	<i>Not applicable</i>	

4.3 Water: Detail all water benefits for each project

Item	Projects where benefits are created	If a benefit arises, explain in more detail
Water and wetland areas have been defined and dealt with in an appropriate manner	<i>Not applicable</i>	

New areas with fresh water/wetlands in the planned forest	Álfabrekka	The forest is partly on a slope and will reduce the surface flow of water with associated pollutants.
A new forest is located so that it helps to increase the quality of water	<i>Not applicable</i>	
Forest is planned to improve water quality	<i>Not applicable</i>	
New forest is located so that it reduces the risk of flooding	<i>Not applicable</i>	
Forest is planned to reduce the risk of flooding	<i>Not applicable</i>	
Another	<i>Not applicable</i>	

4.4 National teams

4.4.1 For projects that are not required to be covered by the EIA, specify whether the area or surrounding area has been registered on the Nature Conservation Register or as an important bird area.

Assignment	Registration of an area	Registration near area
Álfabrekka	No such registration	Nothing close.

4.4.2 Landscape Benefits: Outline any benefits for the project

Item	Projects where benefits are created	If a benefit arises, explain in more detail
Will the new forest be an addition/improve the existing landscape/townscape?	Álfabrekka	An endemic forest that is mostly deforested increases landscape diversity.

4.5 Historical landscapes

4.5.1 For projects that are not required to be covered by the EIA, specify whether the areas or surrounding areas have been registered according to the Heritage Act.

Assignment	Registration of an area	Registration near area
Álfabrekka	<i>Not applicable.</i>	No.

4.5.2 For projects that are not required to include EIA, specify how the historical landscape has been taken into account.

Assignment	Taking into account the characteristics of the historical landscape
Álfabrekka	Historically, the area was forested, but the forest was destroyed, and grazing shaped vegetation after that. There is no reason to preserve that history. A better goal is to rebuild the forest.

4.6 If the intention is to monitor the environmental benefits or impacts of the project during the project period, explain how this will be done.

The carbon sequestration of the forest will be measured regularly. Other environmental benefits will not be monitored.

Provide the following additional documents to confirm the information on the environmental impact or benefits of the project:

To confirm the status of the environmental impact assessment	Check at least one column	Documents for each project
FSK4.6.1 EIA report	No	Not applicable
FSK4.6.2 Opinion confirming that the EIA is not needed	Yes	Cf. Act No. 106/2000 on Environmental Impact Assessments, where the area is less than 200 ha in area and not in a protected area.
FSK4.6.3 Funding Body's Requirement for the EIA	No	Not applicable
Confirmation that environmental impact has been taken into account, including registered areas	Check a column if fields are listed	Documents for each project
FSK4.6.4 Map showing all recorded areas (digital image or form file)	Yes	Screenshot of the Nature Conservation Register map viewer https://natturuminjaskra.ni.is/
FSK4.6.5 Other data showing registrations	No	Not applicable
Other documents	Specify what	Documents for each project
CCS4.6.6 Other data	No	Not applicable

5. Corporate Social Responsibility

5.1 Forest and community Explain all benefits for each project

Item	Projects where benefits are created	If a benefit arises, explain in more detail
Located in an area where there is a lack of accessible green spaces	Álfabrekka	There is little forest on the land and the plan is, among other things, to improve the land quality of the area by cultivating increased forest.
The use of forests is introduced to selected groups throughout society	Not applicable	
Designed in such a way that the forest supports activities in the community	Álfabrekka	Increases the income potential of landowners as well as contributing to increased biodiversity.
The community participates in the planning of the forest	Álfabrekka	The willingness of landowners to participate in the development of the forest and select species.
Helps regulate air quality or temperature	Álfabrekka	With increased forestry on the land, it can be expected to improve the air quality
Another	Álfabrekka	The forest is on private land and not close to urban areas or other settlements. Social benefits are not among the main objectives of forestry in this area.

5.2 Forest and economy: Explain all benefits for each project

Item	Projects where benefits are created	If a benefit arises, explain in more detail
Planned with wood production as a goal	Álfabrekka	The cultivation of trees is likely to yield timber for various uses in a few decades, although the main goal of this project is carbon sequestration. In addition, when it comes to felling, it can be expected that value will be created through wood production. Responsible wood production will also be kept in mind, which is about making good use of the wood in the future.
Planned with the production of other forest products in mind?	Álfabrekka	Numerous side effects are created by afforestation and it is clear that opportunities will come. Efforts will be made to make the best use of them when they arise (e.g. outdoor activities, food production, etc.) Wood will be processed by processing companies.
The forest is expected to support local businesses in the future	Álfabrekka	It promotes innovation with this first certification of a forestry project. There are already forest production plants in close proximity to the earth. It is clear that they will benefit from increased forestry in the area. There are also opportunities for small-scale food production (e.g. mushrooms and berries) that could be utilized.
The forest is expected to promote innovation	Álfabrekka	Unsure.
Create opportunities for volunteering	Álfabrekka	No.
Will be used as a platform for training and skills enhancement	Álfabrekka	Possibly, but uncertain
Another	Not applicable	

5.3 If the intention is to monitor the social benefits or impacts of the project during the project period, explain how this will be done.

Job creation and sales of products will be recorded. (again cannot be filled in the frame). In other respects, it is not the intention to monitor the social benefits of this project.

Provide the following additional documentation to confirm the social impact or benefits of the project:

Vouchers	Specify what	Documents for the project
FSK5.3.1 Planning data confirming social impact/benefits	No	Not applicable
FSK5.3.2 Other data	No	Not applicable