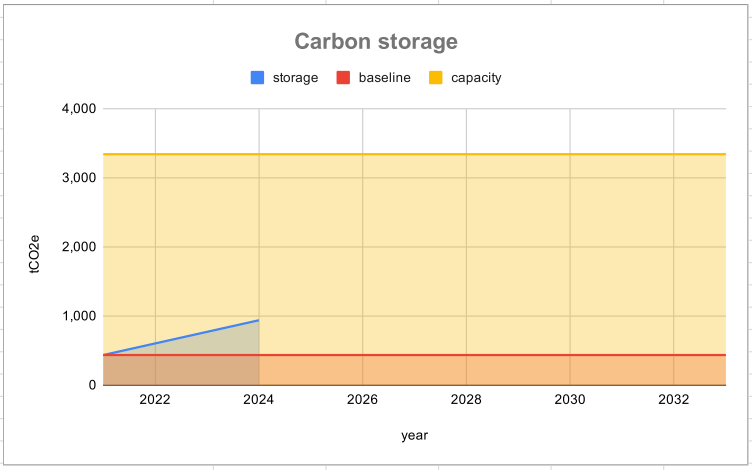
Project Model summary for BBL-L-001

General information			
Project code	BBL-L-001		
Project name	Bamboologic Alcoutim		
Location	Alcoutim, Portugal		
Start year	2021		
Area	4.5	ha	
Ex ante period	20	years	
Duration of storage	20	years	
Holding pool	20%		
Project emissions	20%		LCA estimate
Per Hectare			Above Ground, Below Ground and Soil Organic Carbon, following CDM AR-ACM0003
Baseline SOC	160	tCO2/ha	11,2g/kg from certified measurem 96.14333925
Projection TEC	742	tCO2/ha	INBAR / Van der Lugt et al (2018), range confirmed from Abebe et al (2021) and others
Storage potential	**582**	tCO2/ha	Projection -/- baseline
Per project			
Projected storage	2,621	tCO2	storage potential per ha x area
LCA emissions	524	tCO2	project related emissions
Net storage potential	2,096	tCO2	project storage -/- emissions
Holding pool	419	units	
CRCs issued	**1,677**	units	

Field Code	Field name	Size (ha)	Owner	Ownership contract
BBL-A001	Alcoutim 109	4.5	Bamboologic	
BBL-A002				

Measuren	Field code	Field	Year	Date	Sample depth	SOC/AGB/REF	Carbon (g/kg)	AGB (tCO2/ha)	Sample/report nr.	report link	Sample done by	Notes
001	BBL-A001	Alcoutim 109	2,021	5/4/2021	30	SOM	11.2			http://oncra.org/wp-content/uploads/2022/05/Annex-III-Alcoutim-115-base-soil-sample.pdf		
001	BBL-A001	Alcoutim 109	2,021	5/4/2021	30	SOC	6.496					SOM -> SOC
002	BBL-A001	Alcoutim 109	2,020	1/1/2020		AGB		3.336				
003		#N/A	2,024	1/1/2024	30	SOC	13.1					
004		#N/A	1,899									
005		#N/A	1,899									
006		#N/A	1,899									
007		#N/A	1,899									
008		#N/A	1,899									
			1,899									
			1,899									
			1,899									
			1,899									
			1,899									

Carbon Calculation for		**BBL-L-001**								
Surface	4.5	ha	Fields tab							
Capacity Reference SOC	30.00	SOC g/kg	References tab							
Capacity Reference AGB and BGB	324.55	tCO2e/ha	References tab							
	2021		**2024**		**2027**		**2030**		**2033**	
Measurement average	6.496	SOC g/kg	13.10	SOC g/kg	#N/A	SOC g/kg	#N/A	SOC g/kg	#N/A	SOC g/kg
Sample depth	30	cm	30	cm	#DIV/0!	cm	#DIV/0!	cm	#DIV/0!	cm
Calculation depth	30	cm	30	cm	30	cm	30	cm	30	cm
Soil density	1.3	g/cm3	1.444	g/cm3	#N/A	g/cm3	#N/A	g/cm3	#N/A	g/cm3
SOC (soil carbon) / ha	93	tCO2e/ha	208	tCO2e/ha	#N/A	tCO2e/ha	#N/A	tCO2e/ha	#N/A	tCO2e/ha
AGB (above ground) / ha	3.34	tCO2e/ha	3.34	tCO2e/ha	#N/A	tCO2e/ha	#N/A	tCO2e/ha	#N/A	tCO2e/ha
Storage current	433	tCO2e	936	tCO2e	#N/A	tCO2e	#N/A	tCO2e	#N/A	tCO2e
Storage capacity	3,339	tCO2e	3,339	tCO2e	3,339	tCO2e	3,339	tCO2e	3,339	tCO2e



Sources									
value	**source**	**URL**	Notes						
CEDA aboveground biomass carbon	https://climatee	https://datacedaa	2018 data						
SOC	A critical review of the conventional SOC to SOM conversion factor (Geoderma,Volume 156, Issues 3–4, 15 May 2010, Pages 75-83)								
Density	Wageningen Ur	https://edepot.wu	We've added these soil density levels to the calculation factors tab						
Reference data for capacity									
TEC	742	tCO2e/ha	Blan, Toulouse, F	https://research.t	Yuen et al., 2017	https://doi.org/10.1016/j.foreco.2017.01.017			
SOC (soil)	30	C g/kg							
AGB (biomass)	325	tCO2e/ha							

Measurement #	Field	size (ha)	date	Field CO2	(Avg)	SOC (g/kg from samples)	Sample depth	calc depth (cm)	soil density (g/cm3)	tCO2/ha	(tC/ha)
Capacity		115		70,845.06		43.08	30	30	1.3	616.04	168.012
001	#REF!	115	BBL-A001	49,335.00		30	5/4/2021	30	1.3	429.00	117
002	#REF!		BBL-A001	0.00		20	1/1/2020	30	1.3	286.00	78
003	#REF!			0.00			1/1/2024	30	1.3	0.00	0
				per ha							
	potential storage CO2 op 115ha		21,510	187.04							
	LCA substraction	20%	17,208	149.64							
	per year		1,434	12.47							
	per year per ha		12.47								
	apr-dec 2021		**1,076**								
	opbrengst per jaar teg	€80	€86,040								
			€748	/ha							

Measurement #	Field	size (ha)	date	TEC (g/kg from	tCO2/ha	Field CO2	Sample depth	calc depth (cm)	soil density (g/cm3	(tC/ha)	factor soc->tCO2/ha
Capacity		109.83		51.9	742.00	81,493.86	30	30	1.3	202.3636364	14.30
001	#REF!	109.83	BBL-A001	11.2	160.16	17,590.37	5/4/2021	30	1.3	43.68	14.30
001C	#REF!	109.83	#N/A	#N/A	#N/A	#N/A	#N/A	30	1.3	#N/A	#N/A
002	#REF!		BBL-A001		0.00	0.00	1/1/2020	30	1.3	0	#DIV/0!
003	#REF!				0.00	0.00	1/1/2024	30	1.3	0	
			draft calculation	4-12-2022							
	potential storage CO2 in/on field TEC		63,903	#N/A							
	LCA substraction	20%	12,781	#N/A							
	potential net storage		51,123	#N/A							
	per year		4,260	#N/A							
	per year per ha		38.79								
	2022 - 2033 total (11 yrs)	11	46,863	#N/A							
	holding pool	20%	9,373								
	Issued 18-5-2022		**37,490**								
	number range	2622	40,111								
per ha	Baseline TEC		160	#N/A							
	Projection capacity		742	742							
	Storage potential		582	#N/A							
project	Projected storage		63,903	#N/A							
	LCA emissions	20%	12,781	#N/A							
	Net storage potential		51,123	#N/A							
credits	CRCs first 12 years		30,674	#N/A							
	in hoolding pool	20%	6,135	#N/A							
	CRCs issued		24,539	#N/A							
credits 20 yrs	net potential		51,123	#N/A							
	in holding pool	20%	10,225	#N/A							
	issued		40,898	#N/A							

Bamboo		20	year						
value	**CO2/ha**	**CO2/ha/y**	**range low**	**range high**	**range avg**	**unit**	**source**	**URL**	Notes
Inda aboveground biomass carbon		79.11	15.36	27.79	21.575	tC/ha/y	Devi et al 2021	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7803772/	
AGB stock Ethiopia Oxytenanthera abyssinica forests AGB stock	305.07	15.25	83.2	83.2	83.2	tC/ha	Abebe et al 2021	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8447768/	
SOC stock Ethiopia Oxytenanthera abyssinica forests SOC stock	256.67	12.83	70	70	70	tC/ha	Abebe et al 2021	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8447768/	
AGB + SOC stock	561.73								
Guadua Aculatea in Nicuragua		29.68					Ecoplanet Bamb	https://www.reddi	1375 ha, 20yr, annual credits expected 40815, so 30 /ha/y CO2e
SOC average bamboo forest	495.00		70	200	135	tC/ha	Yuen et al (2017)	https://www.inbar.int/resources/inbar_publications/carbon-off-setting-with-bamboo/	
TEC Guadua and Moso	594.00		156	168	162	tC/ha	King, Van der Lu	https://www.inbar.int/wp-content/uploads/2021/03/Mar-2021_Integration-of-Bamboo-Forestry-into-Carbon-Markets-2.pdf	
TEC Total Ecosystem Carbon stock	891.00	44.55	94	392	243	tC/ha	King, Van der Lu	https://www.inbar.int/wp-content/uploads/2021/03/Mar-2021_Integration-of-Bamboo-Forestry-into-Carbon-Markets-2.pdf	
Average Guada-Moso and others	**742.50**	37.13							
Moso total carbon stock china (TEC)	380.11		87.83	119.5	103.665	tC/ha	Xu et al 2018	https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0193024	
	450	22.50			#DIV/0!			https://forest.kerala.gov.in/images/gwarm/17bmbopacs.pdf	
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					#DIV/0!				
					#DIV/0!				
					#DIV/0!				

from C to CO2	3.666666667		
soil density	1.3		
soil density	% organic matter	% organic carbon	soil density
1.59	0.5	0.25	1.59
1.583	0.6	0.3	1.583
1.576	0.7	0.35	1.576
1.569	0.8	0.4	1.569
1.562	0.9	0.45	1.562
1.555	1	0.5	1.555
1.548	1.1	0.55	1.548
1.541	1.2	0.6	1.541
1.534	1.3	0.65	1.534
1.527	1.4	0.7	1.527
1.52	1.5	0.75	1.52
1.513	1.6	0.8	1.513
1.506	1.7	0.85	1.506
1.499	1.8	0.9	1.499
1.492	1.9	0.95	1.492
1.485	2	1	1.485
1.478	2.1	1.05	1.478
1.471	2.2	1.1	1.471
1.464	2.3	1.15	1.464
1.457	2.4	1.2	1.457
1.45	2.5	1.25	1.45
1.444	2.6	1.3	1.444
1.438	2.7	1.35	1.438
1.432	2.8	1.4	1.432
1.426	2.9	1.45	1.426
1.42	3	1.5	1.42
1.414	3.1	1.55	1.414
1.408	3.2	1.6	1.408
1.402	3.3	1.65	1.402
1.396	3.4	1.7	1.396
1.39	3.5	1.75	1.39
1.385	3.6	1.8	1.385
1.38	3.7	1.85	1.38
1.375	3.8	1.9	1.375
1.37	3.9	1.95	1.37
1.365	4	2	1.365
1.36	4.1	2.05	1.36
1.355	4.2	2.1	1.355
1.35	4.3	2.15	1.35

1.345	4.4	2.2	1.345
1.34	4.5	2.25	1.34
1.335	4.6	2.3	1.335
1.33	4.7	2.35	1.33
1.325	4.8	2.4	1.325
1.32	4.9	2.45	1.32
1.315	5	2.5	1.315
1.31	5.1	2.55	1.31
1.305	5.2	2.6	1.305
1.3	5.3	2.65	1.3
1.295	5.4	2.7	1.295
1.29	5.5	2.75	1.29
1.285	5.6	2.8	1.285
1.28	5.7	2.85	1.28
1.275	5.8	2.9	1.275
1.27	5.9	2.95	1.27
1.265	6	3	1.265
1.26	6.1	3.05	1.26
1.255	6.2	3.1	1.255
1.25	6.3	3.15	1.25
1.245	6.4	3.2	1.245
1.24	6.5	3.25	1.24
1.234	6.6	3.3	1.234
1.228	6.7	3.35	1.228
1.222	6.8	3.4	1.222
1.216	6.9	3.45	1.216
1.21	7	3.5	1.21
1.204	7.1	3.55	1.204
1.198	7.2	3.6	1.198
1.192	7.3	3.65	1.192
1.186	7.4	3.7	1.186
1.18	7.5	3.75	1.18
1.175	7.6	3.8	1.175
1.17	7.7	3.85	1.17
1.165	7.8	3.9	1.165
1.16	7.9	3.95	1.16
1.155	8	4	1.155
1.15	8.1	4.05	1.15
1.145	8.2	4.1	1.145
1.14	8.3	4.15	1.14
1.135	8.4	4.2	1.135
1.13	8.5	4.25	1.13
1.126	8.6	4.3	1.126

1.122	8.7	4.35	1.122
1.118	8.8	4.4	1.118
1.114	8.9	4.45	1.114
1.11	9	4.5	1.11
1.106	9.1	4.55	1.106
1.102	9.2	4.6	1.102
1.098	9.3	4.65	1.098
1.094	9.4	4.7	1.094
1.09	9.5	4.75	1.09
1.086	9.6	4.8	1.086
1.082	9.7	4.85	1.082
1.078	9.8	4.9	1.078
1.074	9.9	4.95	1.074
1.07	10	5	1.07
1.066	10.1	5.05	1.066
1.062	10.2	5.1	1.062
1.058	10.3	5.15	1.058
1.054	10.4	5.2	1.054
1.05	10.5	5.25	1.05
1.046	10.6	5.3	1.046
1.042	10.7	5.35	1.042
1.038	10.8	5.4	1.038
1.034	10.9	5.45	1.034
1.03	11	5.5	1.03
1.026	11.1	5.55	1.026
1.022	11.2	5.6	1.022
1.018	11.3	5.65	1.018
1.014	11.4	5.7	1.014
1.01	11.5	5.75	1.01
1.005	11.6	5.8	1.005
1	11.7	5.85	1
0.995	11.8	5.9	0.995
0.99	11.9	5.95	0.99
0.985	12	6	0.985
0.98	12.1	6.05	0.98
0.975	12.2	6.1	0.975
0.97	12.3	6.15	0.97
0.965	12.4	6.2	0.965
0.96	12.5	6.25	0.96
0.957	12.6	6.3	0.957
0.954	12.7	6.35	0.954
0.951	12.8	6.4	0.951
0.948	12.9	6.45	0.948

0.945	13	6.5	0.945
0.942	13.1	6.55	0.942
0.939	13.2	6.6	0.939
0.936	13.3	6.65	0.936
0.933	13.4	6.7	0.933
0.93	13.5	6.75	0.93
0.927	13.6	6.8	0.927
0.924	13.7	6.85	0.924
0.921	13.8	6.9	0.921
0.918	13.9	6.95	0.918
0.915	14	7	0.915
0.912	14.1	7.05	0.912
0.909	14.2	7.1	0.909
0.906	14.3	7.15	0.906
0.903	14.4	7.2	0.903
0.9	14.5	7.25	0.9
0.897	14.6	7.3	0.897
0.894	14.7	7.35	0.894
0.891	14.8	7.4	0.891
0.888	14.9	7.45	0.888
0.885	15	7.5	0.885
0.882	15.1	7.55	0.882
0.879	15.2	7.6	0.879
0.876	15.3	7.65	0.876
0.873	15.4	7.7	0.873
0.87	15.5	7.75	0.87
0.867	15.6	7.8	0.867
0.864	15.7	7.85	0.864
0.861	15.8	7.9	0.861
0.858	15.9	7.95	0.858
0.855	16	8	0.855
0.852	16.1	8.05	0.852
0.849	16.2	8.1	0.849
0.846	16.3	8.15	0.846
0.843	16.4	8.2	0.843
0.84	16.5	8.25	0.84
0.837	16.6	8.3	0.837
0.834	16.7	8.35	0.834
0.831	16.8	8.4	0.831
0.828	16.9	8.45	0.828
0.825	17	8.5	0.825
0.822	17.1	8.55	0.822
0.819	17.2	8.6	0.819

0.816	17.3	8.65	0.816
0.813	17.4	8.7	0.813
0.81	17.5	8.75	0.81
0.808	17.6	8.8	0.808
0.806	17.7	8.85	0.806
0.804	17.8	8.9	0.804
0.802	17.9	8.95	0.802
0.8	18	9	0.8
0.798	18.1	9.05	0.798
0.796	18.2	9.1	0.796
0.794	18.3	9.15	0.794
0.792	18.4	9.2	0.792
0.79	18.5	9.25	0.79
0.788	18.6	9.3	0.788
0.786	18.7	9.35	0.786
0.784	18.8	9.4	0.784
0.782	18.9	9.45	0.782
0.78	19	9.5	0.78
0.778	19.1	9.55	0.778
0.776	19.2	9.6	0.776
0.774	19.3	9.65	0.774
0.772	19.4	9.7	0.772
0.77	19.5	9.75	0.77
0.768	19.6	9.8	0.768
0.766	19.7	9.85	0.766
0.764	19.8	9.9	0.764
0.762	19.9	9.95	0.762
0.76	20	10	0.76
0.758	20.1	10.05	0.758
0.756	20.2	10.1	0.756
0.754	20.3	10.15	0.754
0.752	20.4	10.2	0.752
0.75	20.5	10.25	0.75
0.748	20.6	10.3	0.748
0.746	20.7	10.35	0.746
0.744	20.8	10.4	0.744
0.742	20.9	10.45	0.742
0.74	21	10.5	0.74
0.738	21.1	10.55	0.738
0.736	21.2	10.6	0.736
0.734	21.3	10.65	0.734
0.732	21.4	10.7	0.732
0.73	21.5	10.75	0.73

0.728	21.6	10.8	0.728
0.726	21.7	10.85	0.726
0.724	21.8	10.9	0.724
0.722	21.9	10.95	0.722
0.72	22	11	0.72
0.718	22.1	11.05	0.718
0.716	22.2	11.1	0.716
0.714	22.3	11.15	0.714
0.712	22.4	11.2	0.712
0.71	22.5	11.25	0.71
0.709	22.6	11.3	0.709
0.708	22.7	11.35	0.708
0.707	22.8	11.4	0.707
0.706	22.9	11.45	0.706
0.705	23	11.5	0.705
0.704	23.1	11.55	0.704
0.703	23.2	11.6	0.703
0.702	23.3	11.65	0.702
0.701	23.4	11.7	0.701
0.7	23.5	11.75	0.7
0.699	23.6	11.8	0.699
0.698	23.7	11.85	0.698
0.697	23.8	11.9	0.697
0.696	23.9	11.95	0.696
0.695	24	12	0.695
0.694	24.1	12.05	0.694
0.693	24.2	12.1	0.693
0.692	24.3	12.15	0.692
0.691	24.4	12.2	0.691
0.69	24.5	12.25	0.69
0.688	24.6	12.3	0.688
0.686	24.7	12.35	0.686
0.684	24.8	12.4	0.684
0.682	24.9	12.45	0.682
0.68	25	12.5	0.68
0.678	25.1	12.55	0.678
0.676	25.2	12.6	0.676
0.674	25.3	12.65	0.674
0.672	25.4	12.7	0.672
0.67	25.5	12.75	0.67
0.668	25.65	12.825	0.668
0.666	25.8	12.9	0.666
0.664	25.95	12.975	0.664

0.662	26.1	13.05	0.662
0.66	26.25	13.125	0.66
0.658	26.4	13.2	0.658
0.656	26.55	13.275	0.656
0.654	26.7	13.35	0.654
0.652	26.85	13.425	0.652
0.65	27	13.5	0.65
0.647	27.2	13.6	0.647
0.644	27.4	13.7	0.644
0.641	27.6	13.8	0.641
0.638	27.8	13.9	0.638
0.635	28	14	0.635
0.632	28.2	14.1	0.632
0.629	28.4	14.2	0.629
0.626	28.6	14.3	0.626
0.623	28.8	14.4	0.623
0.62	29	14.5	0.62
0.618	29.2	14.6	0.618
0.616	29.4	14.7	0.616
0.614	29.6	14.8	0.614
0.612	29.8	14.9	0.612
0.61	30	15	0.61
0.608	30.2	15.1	0.608
0.606	30.4	15.2	0.606
0.604	30.6	15.3	0.604
0.602	30.8	15.4	0.602
0.6	31	15.5	0.6
0.598	31.2	15.6	0.598
0.596	31.4	15.7	0.596
0.594	31.6	15.8	0.594
0.592	31.8	15.9	0.592
0.59	32	16	0.59
0.588	32.2	16.1	0.588
0.586	32.4	16.2	0.586
0.584	32.6	16.3	0.584
0.582	32.8	16.4	0.582
0.58	33	16.5	0.58
0.578	33.2	16.6	0.578
0.576	33.4	16.7	0.576
0.574	33.6	16.8	0.574
0.572	33.8	16.9	0.572
0.57	34	17	0.57
0.568	34.2	17.1	0.568

0.566	34.4	17.2	0.566
0.564	34.6	17.3	0.564
0.562	34.8	17.4	0.562
0.56	35	17.5	0.56
0.558	35.2	17.6	0.558
0.556	35.4	17.7	0.556
0.554	35.6	17.8	0.554
0.552	35.8	17.9	0.552
0.55	36	18	0.55
0.548	36.2	18.1	0.548
0.546	36.4	18.2	0.546
0.544	36.6	18.3	0.544
0.542	36.8	18.4	0.542
0.54	37	18.5	0.54
0.538	37.2	18.6	0.538
0.536	37.4	18.7	0.536
0.534	37.6	18.8	0.534
0.532	37.8	18.9	0.532
0.53	38	19	0.53
0.528	38.2	19.1	0.528
0.526	38.4	19.2	0.526
0.524	38.6	19.3	0.524
0.522	38.8	19.4	0.522
0.52	39	19.5	0.52
0.518	39.2	19.6	0.518
0.516	39.4	19.7	0.516
0.514	39.6	19.8	0.514
0.512	39.8	19.9	0.512
0.51	40	20	0.51
0.508	40.2	20.1	0.508
0.506	40.4	20.2	0.506
0.504	40.6	20.3	0.504
0.502	40.8	20.4	0.502
0.5	41	20.5	0.5
0.499	41.2	20.6	0.499
0.498	41.4	20.7	0.498
0.497	41.6	20.8	0.497
0.496	41.8	20.9	0.496
0.495	42	21	0.495
0.494	42.2	21.1	0.494
0.493	42.4	21.2	0.493
0.492	42.6	21.3	0.492
0.491	42.8	21.4	0.491

0.49	43	21.5	0.49
0.488	43.2	21.6	0.488
0.486	43.4	21.7	0.486
0.484	43.6	21.8	0.484
0.482	43.8	21.9	0.482
0.48	44	22	0.48
0.478	44.2	22.1	0.478
0.476	44.4	22.2	0.476
0.474	44.6	22.3	0.474
0.472	44.8	22.4	0.472
0.47	45	22.5	0.47
0.469	45.2	22.6	0.469
0.468	45.4	22.7	0.468
0.467	45.6	22.8	0.467
0.466	45.8	22.9	0.466
0.465	46	23	0.465
0.464	46.2	23.1	0.464
0.463	46.4	23.2	0.463
0.462	46.6	23.3	0.462
0.461	46.8	23.4	0.461
0.46	47	23.5	0.46
0.458	47.2	23.6	0.458
0.456	47.4	23.7	0.456
0.454	47.6	23.8	0.454
0.452	47.8	23.9	0.452
0.45	48	24	0.45
0.448	48.2	24.1	0.448
0.446	48.4	24.2	0.446
0.444	48.6	24.3	0.444
0.442	48.8	24.4	0.442
0.44	49	24.5	0.44