(Convenience translation into English from the original previously issued in Portuguese)

GRANBIO INVESTIMENTOS S.A.

Independent auditor's review report

Individual and consolidated interim financial information
As at September 30, 2023

GRANBIO INVESTIMENTOS S.A.

Individual and consolidated interim financial information
As at September 30, 2023

Contents

Management report

Dear Shareholders,

In compliance with the legal and bylaw provisions, the Management of GranBio Investimentos S.A. submits the Company's individual and consolidated interim financial information for your appreciation, accompanied by the independent auditor's review report on the individual and consolidated interim financial information, prepared in accordance with Brazilian accounting practices, referring to the period ended September 30, 2023.

Tel.: + 55 11 3848 5880
Fax: + 55 11 3045 7363
www.bdo.com.br

Rua Major Quedinho 90
Consolação – São Paulo, SP
Brasil 01050-030

INDEPENDENT AUDITOR'S REVIEW REPORT ON THE INDIVIDUAL AND CONSOLIDATED INTERIM FINANCIAL INFORMATION

To the
Management and Shareholders of
GranBio Investimentos S.A.
São Paulo - SP

Introduction

We have reviewed the individual and consolidated interim financial information of GranBio Investimentos S.A. ("Company"), included in the quarterly information, for the quarter ended September 30, 2023, which comprise the statement of financial position as at September 30, 2023, and the respective statements of income and comprehensive income for the three- and nine-month periods then ended, and of changes in equity and cash flows for the nine-month period then ended, as well as the corresponding notes.

The Company's Management is responsible for the preparation of the individual interim financial information in accordance with NBC TG 21 (R4), and for the preparation of the consolidated interim financial information in accordance with NBC TG 21 (R4) and with International Accounting Standard (IAS) 34 - Interim Financial Reporting, issued by the International Accounting Standards Board (IASB), as well as for the presentation of this interim financial information in accordance with the standards issued by the Brazilian Securities and Exchange Commission (CVM) applicable to quarterly information. Our responsibility is to express a conclusion on this interim financial information based on our review.

Scope of the review

We conducted our review in accordance with Brazilian and international standards for reviewing interim financial information (NBC TR 2410 and ISRE 2410 - Review of Interim Financial Information Performed by the Independent Auditor of the Entity). A review of interim financial information consists principally of applying analytical and other review procedures and making enquiries of and having discussions with persons responsible for financial and accounting matters. An interim review is substantially less in scope than an audit conducted in accordance with auditing standards, and does not provide assurance that we would become aware of any or all significant matters that might be identified in an audit. Accordingly, we do not express such an audit opinion.

Conclusion on the individual interim financial information

Based on our review, we are not aware of any fact that leads us to believe that the individual interim financial information included in the accompanying quarterly information has not been prepared, in all material respects, in accordance with NBC TG 21 (R4), applicable to the preparation of quarterly information, and presented in accordance with the standards issued by CVM.

Conclusion on the consolidated interim financial information

Based on our review, we are not aware of any fact that leads us to believe that the consolidated interim financial information included in the quarterly information referred to above has not been prepared, in all material respects, in accordance with NBC TG 21 (R4) and IAS 34, applicable to Quarterly Information, and presented in accordance with the standards issued by CVM.

Emphasis

Investment realization stage

We draw attention to Note 1 to the individual and consolidated interim financial information, which describes that the Company and its controlled companies have reported recurring losses on their operations and accumulated loss in equity amounting to R$ 810,663 thousand (R$ 712,290 thousand as at December 31, 2022) in the individual and consolidated statements. This situation is mainly due to the fact that the ethanol plant of the controlled company BioFlex Agroindustrial S.A. is currently in the stage of investments to reach its business capacity of continual operations and, consequently, the recoverability of the investments made in fixed assets and technology (intangible assets). Our conclusion is not qualified in respect of this matter.

Related-party transactions

We draw attention to Notes 7, 10 and 19 to the individual and consolidated interim financial information, which describe that the Company and its controlled companies maintain balances and transactions in significant amounts with related parties, according to the conditions described therein. Accordingly, the results of these operations could have been different if they had been carried out with third parties. Therefore, the accompanying individual and consolidated interim financial information should be read in this context. Our conclusion is not modified in respect of this matter.

Other matters

Statements of value added

The accompanying interim financial information includes the individual and consolidated statements of value added for the nine-month period ended September 30, 2023, prepared under the responsibility of the Company's Management and presented as supplementary information for the purposes of IAS 34. These statements were submitted to the same review procedures followed for the review of the quarterly information, for the purpose of concluding on whether they are reconciled with the interim financial information and accounting records, as applicable, and if their form and contents meet the criteria defined in NBC TG 09 – Statement of Value Added. Based on our review, we are not aware of any fact that would lead us to believe that these statements of value added were not prepared, in all material respects, in accordance with the criteria established in this standard and consistently with the individual and consolidated interim financial information taken as a whole.

The accompanying financial information has been translated into English for the convenience of readers outside Brazil.

São Paulo, November 13, 2023.

BDO RCS Auditores Independentes SS Ltda.
CRC 2 SP 013846/O-1

Ricardo Vieira da Rocha
Accountant CRC 1 BA 026357/O-2 – S - SP

GRANBIO INVESTIMENTOS S.A.

Individual and consolidated interim statements of financial position
September 30, 2023 and December, 31, 2022
(In R$ thousand)

Assets		Parent Company		Consolidated	
	Note	09/30/2023	12/31/2022	09/30/2023	12/31/2022
Current					
Cash and cash equivalents	6	8	1	135	64,723
Short-term investments	7	13,724	7,186	13,724	7,186
Accounts receivable	8	-	-	1,940	2,032
Inventory	9	-	-	8,609	8,570
Advance to suppliers - related parties	10	-	-	-	12,979
Advances to suppliers		1	11	15,043	515
Recoverable taxes		372	6	2,114	1,803
Prepaid expenses		-	46	1,627	1,730
		14,105	7,250	43,192	99,538
Non-current					
Short-term investments	7	-	61,875	-	-
Recoverable taxes		-	-	3,091	2,850
Judicial deposits		112	166	473	770
Related-party loans	10	31,942	-	-	-
Investments	11	917,626	1,015,825	-	-
Property, plant and equipment	12	2,329	2,482	720,549	746,533
Intangible assets	13	-	-	552,437	580,562
		952,009	1,080,348	1,276,550	1,330,715
Total assets		966,114	1,087,598	1,319,742	1,430,253

Liabilities and equity		Parent Company		Consolidated	
	Note	09/30/2023	12/31/2022	09/30/2023	12/31/2022
Current					
Loans and borrowings	15	12,051	9,346	20,737	44,152
Trade payables	16	317	562	36,315	39,670
Tax and labor obligations		40	9	7,650	7,502
Other accounts payable		80	190	1,018	1,577
Advances to clients	17	-	-	1,002	5,739
Related-party loans	10	48,750	44,363	56,381	-
		61,238	54,470	123,103	98,640
Non-Current					
Loans and borrowings	15	115,610	123,030	301,875	298,101
Tax and labor obligations		-	-	6,934	7,081
Deferred income tax and social contribution	25.c	-	-	43,033	48,493
Labor contingencies	18	-	-	530	-
Other accounts payable		1,818	1,879	2,806	3,449
Other accounts payable to related parties	10	-	-	51,828	63,502
		117,428	124,909	407,006	420,626
Equity					
Share capital	19.a	977,662	977,662	977,662	977,662
Advance for future capital increase	19.b	341,059	341,059	341,059	341,059
Capital reserves	19.c	108,175	108,175	108,175	108,175
Asset and liability valuation adjustments	19.d	171,215	193,613	171,215	193,613
Accumulated losses		(810,663)	(712,290)	(810,663)	(712,290)
Equity attributable to controlling shareholders		787,448	908,219	787,448	908,219
Non-controlling interest	11.d	-	-	2,185	2,768
		787,448	908,219	789,633	910,987
Total liabilities and equity		966,114	1,087,598	1,319,742	1,430,253

The explanatory notes are part of the individual and consolidated interim financial information.

GRANBIO INVESTIMENTOS S.A.

Individual and consolidated interim statements of profit or loss
Three-month and nine-month periods ended September 30, 2023 and 2022
(In R$ thousand)

		Parent Company				Consolidated			
	Note	07/01/2023 to 09/30/2023	01/01/2023 to 09/30/2023	07/01/2022 to 09/30/2022	01/01/2022 to 09/30/2022	07/01/2023 to 09/30/2023	01/01/2023 to 09/30/2023	07/01/2022 to 09/30/2022	01/01/2022 to 09/30/2022
Revenue from goods sold and services rendered	20	-	-	-	-	1,464	4,508	5,678	19,635
Cost of goods sold and services rendered	21	-	-	-	-	(10,431)	(34,025)	(9,200)	(27,765)
Gross loss		-	-	-	-	(8,967)	(29,517)	(3,522)	(8,130)
Operating income and (expenses)									
Administrative and general expenses	22	(968)	(4,505)	(4,781)	(8,985)	(11,509)	(37,744)	(17,827)	(44,553)
Other operating income and (expenses)	23	22	22	434	1,528	1,455	825	21,003	12,279
Share of profit (loss) of equity-accounted investees	11.c	(30,319)	(91,586)	(8,321)	(76,966)	-	-	-	-
Net income before financial revenue (expenses)		(31,265)	(96,069)	(12,668)	(84,423)	(19,021)	(66,436)	(346)	(40,404)
Financial revenue	24	721	9,332	2,237	7,544	(1,929)	7,289	2,498	6,834
Financial expenses	24	(3,436)	(11,636)	(3,766)	(12,175)	(14,533)	(43,074)	(17,518)	(59,340)
Financial income (loss), net		(2,715)	(2,304)	(1,529)	(4,631)	(16,462)	(35,785)	(15,020)	(52,506)
Profit/loss before income tax and social contribution		(33,980)	(98,373)	(14,197)	(89,054)	(35,483)	(102,221)	(15,366)	(92,910)
Current income tax and social contribution	25	-	-	-	-	119	(243)	-	-
Deferred income tax and social contribution	25	-	-	-	-	1,139	3,508	1,226	3,596
Loss for the period		(33,980)	(98,373)	(14,197)	(89,054)	(34,225)	(98,956)	(14,140)	(89,314)
Controlling interest						(33,980)	(98,373)	(14,197)	(89,054)
Non-controlling interest						(245)	(583)	57	(260)
Loss for the period						(34,225)	(98,956)	(14,140)	(89,314)
Number of shares						108,133	108,133	108,133	108,133
Earnings per share						(0.3142)	(0.9097)	(0.1313)	(0.8236)

The explanatory notes are part of the individual and consolidated interim financial information.

GRANBIO INVESTIMENTOS S.A.

Individual and consolidated interim statements of comprehensive income
Three-month and nine-month periods ended September 30, 2023 and 2022
(In R$ thousand)

		Parent Company				Consolidated			
	Note	07/01/2023 to 09/30/2023	01/01/2023 to 09/30/2023	07/01/2022 to 09/30/2022	01/01/2022 to 09/30/2022	07/01/2023 to 09/30/2023	01/01/2023 to 09/30/2023	07/01/2022 to 09/30/2022	01/01/2022 to 09/30/2022
Loss for the period		(33,980)	(98,373)	(14,197)	(89,054)	(34,225)	(98,956)	(14,140)	(89,314)
Other comprehensive income to be reclassified to profit or loss in subsequent periods:									
Accumulated translation adjustment - CTA	11.c	19,927	(22,398)	17,692	(19,036)	19,927	(22,398)	17,692	(19,036)
Comprehensive income for the period		(14,053)	(120,771)	3,495	(108,090)	(14,298)	(121,354)	3,552	(108,350)
Profit attributable to:									
Controlling interest						(14,053)	(120,771)	3,495	(108,090)
Non-controlling interest						(245)	(583)	57	(260)
Total comprehensive income						(14,298)	(121,354)	3,552	(108,350)

The explanatory notes are part of the individual and consolidated interim financial information.

GRANBIO INVESTIMENTOS S.A.

Individual and consolidated interim statements of changes in equity
Nine-month periods ended September 30, 2023 and 2022
(In R$ thousand)

		Attributable to the controlling shareholders							
	Note	Share capital	Advance for future capital increase	Capital reserve	Asset and liability valuation adjustments	Accumulated losses	Equity attributable to shareholders	Noncontrolling interest	Total equity
Balances as at January 01, 2022		977,662	-	108,175	232,597	(739,472)	578,962	3,530	582,492
Accumulated translation adjustment - CTA	11.c	-	-	-	(19,036)	-	(19,036)	-	(19,036)
Loss for the period		-	-	-	-	(89,054)	(89,054)	(260)	(89,314)
Balances as at September 30, 2022		977,662	-	108,175	213,561	(828,526)	470,872	3,270	474,142
Balances as at January 01, 2023		977,662	341,059	108,175	193,613	(712,290)	908,219	2,768	910,987
Accumulated translation adjustment - CTA	11.c	-	-	-	(22,398)	-	(22,398)	-	(22,398)
Loss for the period		-	-	-	-	(98,373)	(98,373)	(583)	(98,956)
Balances as at September 30, 2023		977,662	341,059	108,175	171,215	(810,663)	787,448	2,185	789,633

The explanatory notes are part of the individual and consolidated interim financial information.

Individual and consolidated interim statements of cash flow
Nine-month periods ended September 30, 2023 and 2022
(In R$ thousand)

	Note	Parent Company 09/30/2023	Parent Company 09/30/2022	Consolidated 09/30/2023	Consolidated 09/30/2022
Cash flow from operating activities					
Loss for the period		(98,373)	(89,054)	(98,956)	(89,314)
Adjustments for:					
Depreciation	12	153	139	30,047	23,403
Amortization	13	-	-	12,704	13,483
Write-off of property, plant and equipment	23	-	-	55	91,634
Write-off of intangible assets	23	-	-	-	(115,047)
Earnings on short-term investments		(6,847)	(5,283)	(1,139)	-
Share of profit (loss) of equity-accounted investees	11.c	91,586	76,966	-	-
Provision for leasing interest		(54)	(50)	(54)	(50)
Provision for labor contingencies		-	-	530	-
Provision for interest on loans and borrowings	15.b	10,441	11,599	34,148	51,908
Deferred income tax and social contribution		-	-	(3,526)	(3,596)
Provision (reversal) for impairment losses		-	-	666	15,145
Reversal from inventories losses		-	-	-	(30)
Result for adjustments in the period		(3,094)	(5,683)	(25,525)	(12,464)
Change in assets and liabilities:					
Accounts receivable		-	-	(577)	156
Advance to suppliers		10	66	(14,528)	1,614
Advance to suppliers - related parties		-	-	12,979	-
Inventories		-	-	(39)	136
Recoverable taxes		(265)	188	(451)	(274)
Prepaid expenses		46	137	47	85
Other accounts receivable		-	-	-	1
Judicial deposits		54	11	297	(84)
Other accounts payable from related parties		-	-	(13,403)	(13,166)
Trade payables		(245)	(2,989)	(3,109)	(12,940)
Tax and labor obligations		31	114	149	4,617
Advances to clients		-	-	(4,529)	(5,190)
Other accounts payable		(117)	16	(1,352)	(267)
Net cash used in operating activities		(486)	(2,457)	(24,516)	(25,312)
Interest on amortized loans and borrowings	15.b	(10,481)	(11,191)	(10,481)	(19,099)
Net cash used in operating activities		(14,061)	(19,331)	(60,522)	(56,875)
Cash flows from investing activities					
Discharge (placement) of short-term investments		(5,500)	-	(5,500)	-
Increase in investments	11.c	(15,785)	(12,981)	-	-
Acquisition of property, plant and equipment	12	-	(7)	(4,346)	(120)
Amount received from the sale of property, plant and equipment		-	-	-	2,801
Acquisition of intangible assets	13	-	-	(7,302)	(577)
Amount received from the sale of intangible assets		-	-	-	117,310
Net cash produced by (used in) investment activities		(21,285)	(12,988)	(17,148)	119,414
Cash flows from financing activities					
Loans from related parties		40,028	46,521	17,748	63,594
Payment of loans and borrowings - principal	15.b	(4,675)	(14,201)	(4,675)	(14,201)
Net cash from financing activities		35,353	32,320	13,073	49,393
Effect of exchange variation on cash and cash equivalents		-	-	9	17
Increase (decrease) in cash and cash equivalents		7	1	(64,588)	111,949
Cash and cash equivalents as at January 01		1	-	64,723	274
Cash and cash equivalents as at September 30		8	1	135	112,223
Increase (decrease) in cash and cash equivalents		7	1	(64,588)	111,949

The explanatory notes are part of the individual and consolidated interim financial information.

GRANBIO INVESTIMENTOS S.A.

Individual and consolidated interim statements of added value
Nine-month periods ended September 30, 2023 and 2022
(In R$ thousand)

	Parent Company		Consolidated	
	09/30/2023	09/30/2022	09/30/2023	09/30/2022
Revenue				
Sales of merchandise, goods and services	-	-	4,508	20,902
Other revenue and (costs)	22	1,528	1,512	12,279
Impairment loss on trade receivables	-	-	(666)	-
	22	1,528	5,354	33,181
Inputs acquired from third parties				
Costs	-	-	(33,886)	(27,558)
Material, electricity, outsourced services and other operating expenses	(3,928)	(8,740)	(14,985)	(20,091)
	(3,928)	(8,740)	(48,871)	(47,649)
Gross value added	(3,906)	(7,212)	(43,517)	(14,468)
Depreciation and amortization	(153)	(139)	(13,714)	(14,855)
	(153)	(139)	(13,714)	(14,855)
Net value added	(4,059)	(7,351)	(57,231)	(29,323)
Transferred value added				
Share of profit (loss) of equity-accounted investees	(91,586)	(76,966)	-	-
Financial revenue	9,332	7,544	7,289	6,834
	(82,254)	(69,422)	7,289	6,834
Added value to be distributed	(86,313)	(76,773)	(49,942)	(22,489)
Distribution of added value				
Personnel				
Direct compensation	-	1	2,433	2,806
Benefits	113	76	924	1,307
Government Severance Indemnity Fund for Employees (FGTS)	-	-	224	645
	113	77	3,581	4,758
Taxes and contributions				
Federal	372	77	1,421	2,101
State	-	-	999	677
	372	77	2,420	2,778
Interest on third-party capital				
Interest on loans and borrowings	11,575	12,127	43,013	59,289
	11,575	12,127	43,013	59,289
Return on equity capital				
Profit (loss) retained	(98,373)	(89,054)	(98,373)	(89,054)
Non-controlling interest		-	(583)	(260)
	(98,373)	(89,054)	(98,956)	(89,314)
Total	(86,313)	(76,773)	(49,942)	(22,489)

The explanatory notes are part of the individual and consolidated interim financial information.

1. Reporting entity

GranBio Investimentos S.A. ("GranBio" or "Company") is a privately held company having its registered office at Av. Professor Almeida Prado, 532 – Edif. Prédio, 50, Butantã, in the city and state of São Paulo. It was founded on June 13, 2011. Its ultimate and direct parent company is GranInvestimentos S.A., which has its registered office at Av. Faria Lima, 3144 – 3º andar, Jardim Paulistano, in the city and state of São Paulo.

GranBio is a holding company and its subsidiaries are mainly engaged in: (a) logistical and technological solutions for supplying biomass (b) creating viable flexible biorefineries that can be rolled out on an industrial scale to convert biomass into cellulose sugar, biofuels, biochemicals, nanocellulose and other ligno-cellulosic materials, in addition to electricity; (c) developing and licensing patents and intellectual property in the renewables sector using biomass as a raw material; and (d) generating and cogenerating renewable electric power.

Through its subsidiaries in the United States of America (USA), the Company develops and licenses clean technology to produce nanocellulose and biochemicals. GranBio LLC has upwards of 350 patents, including registered patents and applications, for various proprietary technologies it has developed. The Thomaston Research Center in Georgia, USA, has four integrated pilot plants that have been continuously operating for 12 years.

AVAPCO LLC, a subsidiary of GranBio LLC, reached an agreement in September 2023 with UOP LLC, a subsidiary of the Honeywell International Company, supporting the construction of a plant to produce advanced aviation fuel (Sustainable Aviation Fuel – SAF) providing engineering services and technology licenses, in addition to the development of modular engineering in the design of the plant.

GranBio entered a global alliance with Nuseed through 2034 for the technical development of sugarcane varietals as a source of biomass for second-generation biochemicals and fuels (2G). The alliance with Nuseed guarantees GranBio an exclusive cane-energy licensing contract in 2G biorefineries worldwide.

The Company's quarterly information embraces the Company and its subsidiaries (jointly referred to as 'Group').

Continued operation

On September 30, 2023 the Company presented a consolidated net working capital deficiency of R$ 79,911 and accumulated losses of R$ 810,663.

Due to the business characteristics of a technology firm, Management is continuously evaluating the ability of the Company and its subsidiaries to keep generating sufficient cash flow to ensure the continuity of its operations for the foreseeable future, by either generating operating cash flows, disposing of assets, external funding, or shareholder funding.

As regards the subsidiary BioFlex Agroindustrial S.A., the Group monitors projected short-term cash flow, which reflects the expected use of the recently implemented asset and the investments being made to achieve commercial capacity in an ongoing operation. Additionally, in January 2023 we engaged consultancy services from a specialized engineering company to develop a project to increase production capacity from 30 million liters per year to 60 million liters per year.

The Company's Business Plan is based on the following actions already carried out impacting estimated future cash flows:

- By way of its shareholders, on March 09, 2022 the parent company GranInvestimentos S.A. fully settled the working capital loan, which stood at R$ 12,637 as of December 31, 2021, reducing the Company's overall indebtedness and increasing the balance of the loan payable to the Parent company;
- On September 08, 2022 the direct subsidiary BioEdge Agroindustrial Ltda. and Atlântica Sementes S.A, of Nuseed Group, entered into a long-term strategic alliance to accelerate investments in Research and Development (R&D) and sales in global sugarcane markets. Atlântica Sementes S.A acquired the commercial and sugarcane processing assets from the indirect subsidiary BioVertis Produção Agrícola Ltda. and the R&D program in order to improve the value of the energy produced by innovating in bioenergy cane. GranBio will continue investing in cane energy by way of Nuseed Group and will be the exclusive license holder of cane energy as a raw material for 2G applications in the ligno-cellulosic field, such as cellulose sugar and lignin, 2G ethanol, biochemicals, Sustainable Aviation Fuels (SAF) and renewable materials worldwide. The agreement will allow the value chain for biomass fuel to become a powerful solution to guarantee a secure supply of renewable raw material on a large-scale without competing with food products;
- On November 10, 2022 and December 05, 2022, the indirect subsidiary BioFlex Agroindustrial S.A. entered into a re-profiling agreement with Banco do Brasil S.A. and Bradesco S.A., respectively, which involved the granting of a partial reduction of the balance payable on the financing lines and guarantee commission contracted with the two institutions, as well as the granting of a grace period for principal and interest. The total exposure as of September 30, 2023 is R$ 114,417 and R$ 80,534 respectively;
- On December 30, 2022 the indirect subsidiary BioFlex Agroindustrial S.A. and the then investee Companhia Energética de São Miguel dos Campos (CESM) entered into an operation that involved the assumption by CESM of the entirety of the existing debt contracted by BioFlex Agroindustrial S.A. with the National Bank for Economic and Social Development - BNDES. This debt assumption will provide the Company and its subsidiaries with substantial debt relief, maintaining the long-term contract with CESM for the supply of energy and steam for the operations of the Company and its subsidiaries. On February 24, 2023, 50% of the CESM shares held by BioFlex were transferred to Usina Caeté S.A. without a gain or loss in the operation, as detailed in Note 5.a.
- Through its subsidiary AVAPCO, on January 26, 2023 GranBio obtained a new grant line of up to USD 80 million from the U.S. Department of Energy (DOE) for the construction of an integrated 2G SAF (Sustainable Aviation Fuel) biorefinery on a demonstrative scale, equivalent to 6 million liters per year, and a joint industrial-scale nanocellulose plant using wood and sugarcane trash as raw materials;
- On September 01, 2023, the debt of the indirect subsidiary BioFlex Agroindustrial S.A with Banco Itaú, originally classified as Guarantee Honor, was renegotiated through a Bank Credit Certificate (CCB) instrument. On September 13, 2023, the related party Olympia Shipping B.V, a subsidiary of Stratus Energy B.V, which has the same controlling shareholders as GranBio, assumed the loan on behalf of BioFlex in the amount of R$38,633 equivalent to USD 7,857. Subsequently, on October 19, 2023, Olympia Shipping B.V onerously assigned such credit which, on that date, was recognized in the amount of R$ 39,586, to its controlling company, Stratus Energy B.V, with the consent of BioFlex which, on the same date, through of a Private Payment Instrument and Other Covenants, assigned 22,848 units of BLFE11 Debentures, paying off the balance payable to the related party (Explanatory Note 30).

The planned actions that impact the future cash flow estimates are:

- The Company is implementing its capital restructuring plan through: (i) identifying a strategic partner for joint action in the development of its business plan for technology marketing and licensing, selling second generation ethanol and biochemicals, and an investing partner for the advanced jet fuel production plant (Sustainable Aviation Fuel – SAF); and (ii) negotiating cellulosic ethanol presale contracts as cash advances strategy to optimize its working capital equation and accelerate investments to raise BioFlex I's capacity.

As regards to the operations of the indirect subsidiary BioFlex Agroindustrial S.A., due to price fluctuations in the energy market verified in the 2022/2023 crop year, the Company's management opted to allocate straw biomass and bagasse inventories for the production and sale of energy on the spot market of the former joint venture Companhia Energética de São Miguel dos Campos (CESM).

Considering the business plan, Management believes that obligations will be paid as planned, and that the cash flow generation will be appropriate to meet its obligations in the foreseeable future.

However, if the business plan is not successful, the Company's current controlling shareholders have formally committed to continue supporting the Company in all actions required for continuity, including the commitment to allocate additional resources in sufficient amount.

Based on its evaluation, Management has concluded that there is no significant uncertainty as to the Company's ability to continue in operation for the foreseeable future. Therefore, the Company and its subsidiaries' quarterly information was prepared under the assumption of continuity.

2. List of Subsidiaries

Direct subsidiaries

- BioEdge Agroindustrial Ltda.: Company that invests, on a commercial scale, in second-generation ethanol and biochemical plants;
- GranBio LLC: A US-based company engaged in investing in companies strategically related to the Company's business plan, by creating technologies for converting biomass into cellulose sugar for biochemicals and second-generation ethanol, in addition to developing nanocellulose for a range of industries.

Indirect subsidiaries

- BioFlex Agroindustrial S.A.: Company engaged in the production of biomass, processing biomass for the production and sale of biofuel, electricity, biochemicals and pharmachemicals, technological research and development, sale of sugarcane straw, bagasse and biomass;
- GranBio Intellectual Property Holdings LLC: Owner of all the patents and industrial and technological secrets developed by GranAPI LLC and its subsidiaries;
- GranBio Conversion Technologies LLC: Company that owns the Thomaston asset, a demonstration plant for existing biomass conversion technologies. This company has a leasing agreement of its assets with AVAPCO LLC;
- American Green + LLC: Company that holds the sublicensing rights of technologies owned by GranBio Intellectual Property Holdings LLC for converting biomass into cellulosic ethanol;

- AVAPCO LLC: Company that holds the sublicensing rights of technologies owned by GranBio Intellectual Property Holdings LLC for converting biomass into cellulosic ethanol and nanocellulose. This company leases the Thomaston asset (a demonstration plant) from GranBio Process Conversion Technologies LLC to develop new technologies and provide services to clients;
- GranBio Services Inc.: A US-based company that invests in companies strategically related to the Company's business plan. It is the holding company of the three companies below:
- Alpena Biorefinery Inc.: Company providing water treatment services to the paper and pulp company Decorative Panels International, located in Alpena, MI, and the production and sale of molasses to other clients;
- Alpena Protoype Bioref LLC: Nonoperating company owner of the Alpena Biorefinery land;
- Alternative Bioprod Inv. LLC: Nonoperating company.

Joint Ventures

- Companhia Energética de São Miguel dos Campos: Company dedicated to developing an integrated electricity and steam generation system running on biomass - cogeneration, electricity and steam supply and provision of services related to energy efficiency enhancement and generation. Energy generation is substantially to meet the demand of its shareholders and the excess of its generation is included in electrical grid system;
- On February 24, 2023, 50% of the CESM shares held by BioFlex were transferred to Usina Caeté S.A. without no gain or loss on the transaction, as detailed in Note 5.a.

Note 5 shows the percentage of interests in the direct and indirect subsidiaries and joint ventures.

3. Basis of preparation and presentation of the individual and consolidated quarterly statements

The Executive Board approved the preparation of the individual and consolidated quarterly financial statements on November 13, 2023.

The preparation of the individual and consolidated quarterly financial statements for the period ended September 30, 2023 includes the individual and consolidated quarterly financial information.

The Company's individual and consolidated quarterly information as at September 30, 2023 comprise the individual and consolidated quarterly information of the Company and its subsidiaries. In the individual quarterly reports, the corresponding interest in the subsidiaries is presented using the equity method.

Statement of compliance

The Company's individual quarterly statements have been prepared and are being presented in accordance with the standard NBC TG 21 (R4) and the consolidated interim financial statements in accordance with NBC TG 21 (R4) and the international standard IAS 34 - "Interim Financial Reporting", issued by the "International Accounting Standards Board - (IASB)" and the standards issued by the Brazilian Securities Commission, applicable to the individual and consolidated quarterly statements. NBC TG 21 (R4) / IAS 34 requires the use of certain accounting estimates by Company Management. The quarterly financial statements have been prepared on the historical cost basis, except for certain financial assets and liabilities, which are measured at fair value.

These Quarterly Statements do not include all the information and disclosures required in annual financial statements and should therefore be read in conjunction with the financial statements for the financial year ended December 31, 2022, which were prepared in accordance with IFRS and the accounting practices adopted in Brazil. There were no changes to the accounting practices adopted in the period ended September 30, 2023 in relation to those applicable at December 31, 2022.

Details on the Group's main accounting policies are presented in Note 5.

Functional and presentation currency

The individual and consolidated quarterly statements are being presented in Brazilian Reais, which is the Company and its subsidiaries' functional currency, except the subsidiary GranBio LLC and its direct and indirect subsidiaries, whose functional currency is the US Dollar. All balances have been rounded to the nearest thousand, unless otherwise indicated.

Use of estimates and judgments

In preparing the individual and consolidated quarterly statements, Management has made judgments and used estimates that affect the application of the accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to estimates are recognized prospectively.

a. Judgments

The information on judgments made in applying the accounting policies that have significant effects on the amounts recognized in the individual and consolidated quarterly statements are included in the following notes:

- Note 1 – Reporting Entity (Operation continuity): Management's evaluation of how the Group will produce and/or obtain capital to support operations over the next 12 months;
- Note 5 – Significant accounting policies (a. Consolidation basis): determination whether the Company actually has control over an investee;
- Note 10 – Related-party transactions: the shareholder GranInvestimentos S.A. repurchased the debentures issued by BioFlex Agroindustrial S.A for R$ 1,00, with each share of the debenture payable by BioFlex being update by its market value until its completion;
- Note 11 - Investments: determines whether the Company has influence over an investee;
- Note 12 – Property, plant and equipment and Note 13 – Intangible assets: impairment test, key assumptions underlying the recoverable amounts. For further information see Note 14;
- Note 15 – Loans and borrowings: Compliance with the contractual terms of loans and borrowings;
- Note 20 – Net revenue from goods and services sold: the Group recognizes revenue when it transfers the control of a product or service to the client.

b. Uncertainties about assumptions and estimates

Information about assumptions and estimation uncertainties as of September 30, 2023 that have a significant risk of resulting in a material adjustment to the carrying amounts of assets and liabilities within the coming financial year are included in the following notes:

- Note 9 – Inventories: recoverable value of inventory based on market replacement cost, slow-moving products, expired products or products nearing the expiration date and products that do not meet quality standards, recorded as “Cost of products sold” and replacement cost in the market;
- Note 12 – Property, plant and equipment: Assessing the need to conduct impairment tests on property, plant and equipment and key assumptions underlying recoverable amounts. For further information see Note 14;
- Note 13 – Intangible assets: main assumptions underlying the recoverable amounts, including the recoverability of development costs, licenses, intellectual property and goodwill deriving from the business combination; for further information see Note 14.

Measurement of fair value

Several of the Company's accounting policies and disclosures require the measurement of fair values, for both financial and non-financial assets and liabilities; disclosures are shown in Note 26.

When measuring the fair value of an asset or a liability, the Group used observable market data as far as possible. Fair values are categorized into different levels in a fair value hierarchy based on the inputs used in the valuation techniques as follows.

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2: inputs, other than quoted prices included within Level 1, that are observable for the asset or liability, either directly (i.e., as prices) or indirectly (i.e., derived from prices);
- Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs);
- Further information about the assumptions adopted in measuring fair values is included in Note 14.

4. Basis of measurement

The individual and consolidated financial statements have been prepared on the historical cost basis, except for the valuation of certain assets and liabilities, such as financial instruments, which are measured at fair value.

5. Significant accounting policies

The accounting policies set out below have been applied consistently to all periods presented in these individual and consolidated quarterly statements.

(In R$ thousand)

a. Basis of consolidation

Percentage interest in investees

See below the percentage interest in the direct and indirect subsidiaries and joint ventures as at September 30, 2023 and December 31, 2022.

	Country	% Interest	
Direct Subsidiaries		09/30/2023	12/31/2022
GranBio LLC	United States of America	100.00%	100.00%
BioEdge Agroindustrial Ltda.	Brazil	100.00%	100.00%
Indirect Subsidiaries			
BioFlex Agroindustrial S.A.	Brazil	100.00%	100.00%
GranBio - Intellectual Property Holdings LLC	United States of America	97.00%	97.00%
GranBio Conversion Technologies LLC	United States of America	100.00%	100.00%
American Green + LLC	United States of America	100.00%	100.00%
AVAPCO LLC	United States of America	100.00%	100.00%
GranBio Services Inc.	United States of America	96.10%	96.10%
Alpena Biorefinery INC	United States of America	100.00%	100.00%
Alpena Protoype Bioref LLC	United States of America	100.00%	100.00%
Alternative Bioprod Inv. LLC	United States of America	100.00%	100.00%
Joint Ventures			
Companhia Energética de São Miguel dos Campos – CESM (a)	Brazil	-	50.00%

(a) In FY 2022 the indirect subsidiary BioFlex entered into various negotiations with the then Joint Venture, Companhia Energética de São Miguel dos Campos (CESM): (i) On September 30, 2022 the Company's management authorized the sale of property, plant and equipment related to the thermoelectric plant; (ii) on December 30, 2022 the amount that the indirect subsidiary BioFlex had receivable from Companhia Energética São Miguel dos Campos (CESM) was fully amortized due to the agreement between the companies by which CESM assumed the entire existing debt contracted by the indirect subsidiary BioFlex from the National Bank for Economic and Social Development– BNDES; (iii) On February 24, 2023, 50% of the CESM shares held by BioFlex were transferred to Usina Caeté S.A. without a gain or loss in the operation, to cover the pass-through of the debt to BNDES.

(i) Subsidiaries

The Group controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and could affect those returns through its power over the entity. The quarterly statements of subsidiaries are included in the consolidated quarterly statements from the date on which control commences until the date on which control ceases.

The subsidiaries' quarterly information is recognized in the parent company's quarterly financial statements by the equity-income method.

(ii) Investments in equity-accounted investees

The Group's investments in entities valued by the equity method consists of interest in subsidiaries, in the individual financial statements.

(iii) Transactions eliminated on consolidation

Intra-group balances and transactions and any unrealized income and expenses arising from intra-group transactions are eliminated in preparing the consolidated quarterly statements. Unrealized gains arising from transactions with investees recorded by the equity income method are eliminated against the investment in proportion to the Group's interest in the investee. Unrealized losses are eliminated in the same way as unrealized gains, but only to the extent that there is no evidence of an impairment loss.

(iv) Loss of control

When the Group loses control over a subsidiary, it derecognizes the assets and liabilities of the subsidiary, and any related NCI and other components of equity. Any gain or loss arising from the loss of control is recognized in profit or loss.

(v) Non-controlling interests

NCI are measured initially at their proportionate share of the acquiree’s identifiable net assets at the date of acquisition. Changes in the Group’s interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions.

b. Foreign currency

(i) Foreign-currency transactions

Foreign-currency transactions are translated to the respective functional currencies of Company's entities at exchange rates on the dates of the transactions.

Cash assets and liabilities denominated in foreign currencies are translated into the functional currency at the exchange rate on the reporting date. Non-cash assets and liabilities that are measured at fair value in a foreign currency are translated to the functional currency at the exchange rate when the fair value was determined. Non-monetary items that are measured based on historical cost in a foreign currency are translated at the exchange rates on the date of the transaction. Foreign currency differences are generally recognized in profit or loss.

The investees’ statements of profit or loss and cash flow, not in the parent company’s functional currency, are translated to Brazilian Real at the average monthly exchange rate; assets and liabilities are translated at the closing rate and other equity items are translated at the historic rate.

Exchange variation on investments in subsidiaries and associated companies, with a functional currency different from the Parent Company, are recorded in equity as an accumulated translation adjustment, and are transferred to profit or loss when investments are sold.

(ii) Overseas subsidiaries

The assets and liabilities of overseas subsidiaries, including goodwill and fair value adjustment from acquisition, are translated into Brazilian Real at the exchange rate on the reporting date. The income and expenses of overseas subsidiaries are translated into Brazilian Real at the exchange rate on the dates of the transactions.

Foreign currency differences generated on translation into the presentation currency are recognized in other comprehensive income and accumulated in the asset and liability valuation adjustment in equity. If the subsidiary is not a wholly owned subsidiary, the corresponding proportion of the translation difference is attributed to non-controlling interests.

c. Revenue

Revenue is measured based on the consideration specified in a contract with the client. The Group recognizes revenue when it transfers control over a good or service to a client or when the sale/concession of the license takes place.

The following topics provide information about the nature and timing of the satisfaction of performance obligations in contracts with clients, including significant payment terms, and the related revenue recognition policies:

- Service fee income: revenue is recognized over time as services are provided. The stage of completion to determine the amount of revenue to recognized is assessed based on surveys of work performed. If the services under a single arrangement are rendered in different reporting periods, then the consideration is allocated based on their relative stand-alone selling prices. The stand-alone selling price is determined based on the list prices at which the Group sells the services in separate transactions. Invoices are issued monthly and are usually payable within 30 days;
- Resale of goods and sugarcane and energy cane (Vertix): revenue is recognized when the goods are delivered and have been accepted by clients at their premises. Clients obtain control of products when the goods are delivered to and have been accepted at their premises. This sales revenue is recognized when the performance obligation is fulfilled, i.e., when the promised product is physically transferred, and the client obtains control over this product;
- License revenue: the Company's license revenue is recognized at the specific time of sale or concession, since, at that time, the client can determine how and when to use this license without needing the Company’s performance, that is, the Company will no longer carry out any activities that significantly affect the intellectual property under that license to which the client has rights. Therefore, the license provides the right to use the Company's intellectual property as it exists at the time it is sold and granted and, for this reason, revenue is recognized at that specific time of the sale and concession of the license, as its intellectual property does not change, and the client obtains control at the time the license is granted;
- Revenue from collaboration agreements: revenue is deferred and recognized over time, on a straight-line basis, according to the time determined in the agreement between the parties. Revenue from collaboration agreements also includes revenue recognition from the development of new products. The price and billing methods are determined in specific negotiations with each client.

d. Employee benefit

Short-term employee benefits

Short-term employee benefits obligations are recognized as personnel expenses as the corresponding service is provided. The liability is recognized for the expected payable amount if the Group has a present legal or constructive obligation to pay this amount as a result of service provided by the employee, and the obligation can be reliably estimated.

e. Financial income and costs

The Company's financial income and costs include:

- Interest income and expenses;
- The net gain/loss on financial assets at fair value through profit/loss;
- The foreign-currency gain/loss on financial assets and liabilities.

Interest income or expense is recognized using the effective interest method.

Effective interest rate' is the rate that exactly discounts the estimated future cash payments or receipts through the expected life of the financial instrument by:

- Gross carrying amount of the financial asset; or
- At amortized cost of the financial liability.

When calculating the interest income or expense, the effective interest rate is charged on the gross carrying amount of the asset (when the asset is not impaired) or at the amortized cost of the liability. However, interest revenue is calculated by applying the effective interest rate to the amortized cost of the financial asset suffering impairment after initial recognition. If the asset is no longer impaired, the interest revenue is once again calculated on the gross amount.

f. Inventories

Inventories are valued at the lowest average purchase or production cost and net realizable value. The Group considers the following when determining the provision for inventory losses: low turnover products, expired or expiring products and products that do not meet quality standards at market replacement cost, recorded as “Cost of products sold”. As described in Note 9, inventories are classified into raw materials and inputs necessary for the production of 2G ethanol.

g. Property, plant and equipment

(i) Recognition and measurement

Items of property, plant and equipment are measured at historical cost of acquisition or construction, which includes the capitalized borrowing costs, less accumulated depreciation and any impairment losses, when applicable.

If parts of an item of property, plant and equipment have different useful lives, they are recorded as individual items (major components) of property, plant and equipment. Gains and losses on the sale of an item of property, plant and equipment (calculated by the difference between the proceeds from the sale and the book value of the property, plant and equipment) is recognized in other operating income/loss.

(ii) Subsequent expenditure

Subsequent expenses are capitalized to the extent that it is probable that future benefits associated with the expenditures will accrue to the Group. Recurring maintenance and repair expenses are recorded in profit/loss.

(In R$ thousand)

(iii) Depreciation

Depreciation is calculated to amortize the cost of property, plant and equipment items, net of their estimated residual values, using the straight-line method on the estimated useful lives of the items and the depreciation is recognized in profit/loss. Depreciation is recognized in profit or loss. The right-of-use asset is subsequently amortized using the straight-line method from the inception date to the end of the lease term, unless the lease transfers ownership of the underlying asset to the Group at the end of the lease term or the cost of the lease right-of-use asset reflects that the Group will exercise a call option. In that case the right-of-use asset will be amortized over its lifetime. Land is not depreciated.

Property, plant and equipment items are depreciated from the date they are installed and available for use, or in the case of internally built assets, from the day construction is completed and the asset is available for use.

The estimated useful lives are (in years):

Property, plant and equipment	09/30/2023	12/31/2022
IT equipment	2 – 10	3 – 5
Vehicles	5	5
Furniture and fixtures	10 – 15	3 – 10
Lab plant and equipment	10 - 25	2 – 10
Agricultural plant and equipment	10 - 30	4 – 12
Improvements to rented property	30	25
Machinery, equipment, and industrial facilities	5 - 60	2 – 40
Lease rights-of-use	10	10
Buildings and constructions	30 - 60	2 – 60

Depreciation methods, useful lives and residual values are reviewed annually and adjusted if appropriate.

The Company hired a company specialized in evaluating the useful lives of the main assets of the indirect subsidiary BioFlex, and the new useful lives began to be considered in January 2023.

h. Intangible assets and goodwill

(i) Goodwill

The goodwill resulting from the acquisition of subsidiaries is measured at cost, less impairment test losses.

(ii) Research and development

Expenditure on research activities is recognized in profit or loss as incurred.
Development expenditures are capitalized only if development costs can be reliably measured, if the product or process is technically and commercially viable, if future economic benefits are probable, and if the Group has the intention and sufficient resources to complete development and use or sell the asset. After initial recognition, capitalized development expenditures are measured at cost, less accumulated amortization, and any impairment losses.

(i) Other intangible assets

Other intangible assets that are acquired by the Group that have finite useful lives are measured at cost, less accumulated amortization and accumulated impairment losses. Subsequent expenditures are capitalized only when they increase the future economic benefits embodied in the specific asset to which they relate. Amortization is calculated on the cost of an asset, or other equivalent cost, less the residual value.

(ii) Subsequent expenses

Subsequent expenses are only capitalized when they increase the future economic benefits embodied in the specific asset to which they relate. All other expenses are recognized in the statement of profit or loss when incurred.

(iii) Amortization

Amortization is recognized in profit of loss using the straight-line method based on the estimated useful lives of intangible assets, from the date they are available for use.

The estimated useful lives are as follows (in years):

Intangible assets	09/30/2023	12/31/2022
Software	5	5
Technology licenses and intellectual property	30	30
Development - Energy Cane	12	-

(iv) Licenses, technological intellectual property and goodwill arising from the business combination

Intangible assets are recorded at acquisition cost or at the fair value of intangible assets acquired in a business combination, less accumulated amortization calculated using the straight-line method, when applicable. These intangible assets are tested for impairment according to the accounting policy in Note 5 (k.ii). Goodwill is not amortized.

i. Financial instruments

(i) Recognition and initial measurement

Trade receivables and issued debt securities are initially recognized on the date they were originated.

All other financial assets and liabilities are initially recognized when the Group becomes a party to the contractual provisions of the instrument.

A financial asset (unless it is a trade receivable without a significant financing component) or financial liability is initially measured at fair value. A trade receivable without a significant financing component is initially measured at transaction price.

(ii) Classification and subsequent measurement

On initial recognition, a financial asset is classified as measured: at amortized cost or fair value through profit or loss - FVTPL.

Financial assets are not reclassified subsequent to initial recognition, unless the Group changes its business model for managing financial assets, in which case all affected financial assets are reclassified on the first day of the reporting period subsequent to the change in business model.

A financial asset is measured at amortized cost if it meets both of the following conditions below and it is not designated as being measured at FVTPL:

- It is held within a business model whose objective is to hold financial assets to receive contractual cash flows; and
- Its contractual terms generate, on specific dates, cash flows that are related only to the payments of principal and interest on the outstanding principal amount.

A debt instrument is measured at FVTPL.

Financial assets held for trading or managed with performance evaluated based on fair value are measured at FVTPL.

Financial assets

These assets are subsequently measured at amortized cost using the effective interest method. The amortized cost is reduced by impairment losses. Interest revenue, exchange gains and losses and impairment are recognized in profit or loss. Any gain or loss on derecognition is recognized in profit or loss.

Financial liabilities

Financial liabilities were classified as measured at amortized cost or at FVTPL. A financial liability is classified at FVTPL if it is classified as held for trading, is a derivative or is designated as such upon initial recognition. Financial liabilities measured at FVTPL are measured at fair value and net income (loss), including interest, is recognized in profit or loss. Other financial liabilities are subsequently measured at amortized cost using the effective interest rate method. Interest expenses, exchange gains and losses are recognized in profit or loss. Any gain or loss on derecognition is also recognized in profit or loss.

(iii) Derecognition

Financial assets

The Group derecognizes a financial asset when the contractual rights to the cash flows from the asset expire, or when the Group transfers the contractual rights to receive the contractual cash flows on a financial asset in a transaction in which substantially all the risks and rewards of ownership of the financial asset are transferred or in which the Group neither transfers nor retains substantially all the risks and rewards of ownership of the financial asset and also does not retain control over the financial asset.

Financial liabilities

The Group derecognizes a financial liability when its contractual obligation is discharged, canceled, or expires. The Group also derecognizes a financial liability when the terms are modified and the cash flows of the modified liability are substantially different, in which case a new financial liability based on the modified terms is recognized at fair value.

Upon derecognition of a financial liability, the difference between the former carrying amount and the consideration paid (including assets transferred that do not carry cash or liabilities assumed) is recognized in profit or loss.

(iv) Offsetting

Financial assets and financial liabilities are offset, and the net amount presented in the statement of financial position when, and only when, the Group currently has a legally enforceable right to offset the amounts and intends to settle them on a net basis or to realize the asset and settle the liability simultaneously.

j. Capital share

Common shares are classified as equity.

Additional costs directly attributable to the issuance of common shares and share options are recognized as a deduction from equity. Tax effects relating to transaction costs of these transactions are accounted for in accordance with CPC 32. /IAS 12.

k. Impairment

(i) Non-derivative financial assets

Financial instruments and contractual assets

The Group recognizes provisions for expected credit losses on:

- Financial assets measured at amortized cost; and
- Contract assets.

The Group measures the loss allowance at an amount equal to the ECL. Provisions for losses on trade receivables and contract assets are measured at an amount equal to the expected credit loss for the entire life of the instrument.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating the ECL, the Group considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes quantitative and qualitative information and analyses based on the Company's historical experience, credit assessment and forward-looking information.

The Group assumes that the credit risk of a financial asset has increased substantially if it is more than 30 days overdue.

The Group considers a financial asset to be in default when:

- It is highly unlikely that the debtor will pay all its credit obligations without resorting to actions such as enforcing the guarantee (if applicable); or
- The financial asset is more than 90 days overdue.

The Group considers that a debt security has a low credit risk when its credit risk rating is equivalent to the globally accepted definition of "investment grade".

- Lifetime ECLs are ECLs that result from all possible default events over the expected life of a financial instrument;
- 12-month ECLs are ECLs that result from possible default events within the 12 months after the reporting date (or a shorter period if the expected life of the instrument is less than 12 months).

The maximum period considered to estimate the expected credit loss is the maximum contractual period during which the Group is subject to credit risks.

Measuring expected credit losses

Expected credit losses are estimates weighted by the probability of credit loss. Credit losses are measured at present value based on all cash shortfalls (i.e., the difference between the cash flows due to the Group under the contract and the cash flows expected to be receive). Expected credit losses are discounted at the financial asset's effective interest rate, when applicable.

Impaired financial assets

At each reporting date, the Group evaluates whether the financial assets recorded at amortized cost are impaired. A financial asset is 'impaired' when one or more events occur that have a detrimental impact on the estimated future cash flows of the financial asset. Objective evidence that a financial asset is impaired includes the following observable data:

- Significant financial difficulty of the issuer or borrower; violation of contractual clauses, such as default or being more than 90 days overdue;
- Restructuring of an amount due to the Group under conditions that will not be accepted under normal circumstances;
- The probability that the borrower will file for bankruptcy or undergo another type of financial reorganization;
- The disappearance of an active market for that financial asset because of financial difficulties.

Presenting the provision for expected credit losses in the statement of financial position

The provision for financial asset losses measured at amortized cost is deducted from the gross carrying amount of the assets, when applicable.

Write-off

The gross carrying amount of a financial asset is written-off when the Group does not have a reasonable expectation to recovering the financial asset in whole or in part. The Group does not expect any significant recovery of the written-off amount. However, written-off financial assets may still be subject to credit enforcement for compliance with the Company's procedures for recovering amounts due.

(ii) Non-financial assets

At each reporting date the Group reviews the carrying amounts of its non-financial assets (except biological assets and inventory) for signs of impairment. If there is such an indication, the asset's recoverable amount is estimated. Goodwill is tested annually for impairment.

For impairment testing, assets are grouped into the smallest group of assets that generate cash inflows from continuing use that are largely independent of cash inflows from other assets or CGUs (cash generating units). Goodwill resulting from a business combination is allocated to the CGUs or groups of CGUs that are expected to benefit from the synergies of the combination.

The recoverable amount of an asset or CGUs is the higher of its value in use and its fair value less selling expenses. Value in use is based on estimated future cash flows, discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and risks specific to the asset or CGU.

An impairment loss is recognized if the carrying amount of an asset or CGU exceeds its recoverable amount.

Impairment losses are recognized in profit or loss. They are allocated first to reduce the carrying amount of any goodwill allocated to the CGU (or group of CGUs) and then to reduce the carrying amount of the other assets in the CGU (or group of CGUs) on a pro rata basis.

An impairment loss with respect to goodwill is not reversed. For other assets, an impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized.

l. Provisions

Provision are recognized when the Group has a present obligation (legal or constructive) as a result of past events, it is probable that an outflow of resources will be required to settle the obligation and a reliable estimate of the amount of the obligation can be made. When the Group expects the amount of a provision to be reimbursed, in whole or in part, for example under an insurance contract, the reimbursement is recognized as a separate asset, but only when the reimbursement is virtually certain. The expense relating to any provision is presented in the statement of profit or loss, net of any reimbursement. The increase in the obligation due to the passage of time is recognized as a financial expense.

m. Statement of added value

The Group prepared the statements of value added pursuant to technical pronouncement CPC 09 - Statement of value added, which are presented as an integral part of the quarterly information in accordance with the BR GAAP applicable to publicly held companies, while for IFRS they represent supplementary financial information.

(In R$ thousand)

6. Cash and cash equivalents

	Parent Company		Consolidated	
	09/30/2023	12/31/2022	09/30/2023	12/31/2022
Cash and banks - checking account	1	1	128	107
Short-term investments	7	-	7	64,616
Total	8	1	135	64,723

Cash and cash equivalents include cash, bank deposits used for payments and receipts for the Company's operations, in addition to short-term investments.

Short-term investments classified as current, have a maximum grace period of three months from investment to redemption, and are used to manage immediate obligations. The yield on short-term investments is fixed income with an average of 75% of the CDI rate as at September 30, 2023 (102% of the CDI rate as at December 31, 2022).

7. Short-term investment

	Parent Company		Consolidated	
	09/30/2023	12/31/2022	09/30/2023	12/31/2022
Cash Collateral (i)	13,724	7,186	13,724	7,186
Debenture (ii)	-	61,875	-	-
Total	13,724	69,061	13,724	7,186
Current	13,724	7,186	13,724	7,186
Non-current	-	61,875	-	-

As at September 30, 2023 and December 31, 2022, the short-term investments refer exclusively to:

(i) Short-term investment made by the Company in October 2022 and April 2023, yielding 99.5% of the CDI rate. Investment made to create a guarantee to secure the FINEP loan;
(ii) Short-term investment made by the Company in 39.229 units of BFLE11 debentures for R$ 61,875 on December 31, 2022. On December 29, 2023, the Company transferred all units of debentures to its indirect subsidiary BioFlex Agroindustrial S.A., which booked then in Treasury.

8. Accounts receivable

	Consolidated	
	09/30/2023	12/31/2022
Accounts receivable	2,606	2,032
(-) Provision for impairment losses	(666)	-
	1,940	2,032

(In R$ thousand)

Receivables maturities

The maturities of receivables are presented below:

	Consolidated	
	09/30/2023	12/31/2022
Neither past due nor impaired	983	1,287
1 to 30 days past due	909	50
91 to 360 days past due	48	2
More than 1 year past due	-	693
	1,940	2,032

9. Inventories

	Consolidated	
	09/30/2023	12/31/2022
Consumables (i)	5,797	5,797
Finished goods	25	25
Storeroom materials	2,787	2,748
Total	8,609	8,570

(i) Balance of various consumables used to produce 2G ethanol. One of the main inputs for producing 2G ethanol are the enzymes which are stored in a specific location with a suitable temperature so as not to lose their productive capacity. On September 30, 2023 and December 31, 2022 R$ 4,753, equivalent to 286,000 Kg is held by third parties.

Inventory risk:

- Inventory counts are carried out periodically and, when necessary, the corresponding adjustments are recorded. However, in recent years there have been no significant inventory adjustments.

Management valued the inventory based on its recoverable amount as at September 30, 2023 and December 31, 2022 as follows:

Movement	Provision
Balances as at December 31, 2021	(212)
Use of provision for losses	30
Balances as at September 30, 2022	(182)
Balances as at December 31, 2022	(182)
Use of provision for losses	-
Balances as at September 30, 2023	(182)

(In R$ thousand)

10. Related-party transactions

The Company has transactions with its direct subsidiaries, indirect subsidiaries, joint ventures, parent companies and associated companies, with the objective of providing funds for the maintenance of its operations. These operations have no remuneration or maturity, as agreed between the parties.

Transactions between related parties refer to loans to supply cash and commercial transactions that refer to transacted amounts of shared costs and other commercial transactions.

As at September 30, 2023 and December 31, 2022, the balances are presented as follows:

- Parent Company:

		09/30/2023		12/31/2022	
	Relation	Assets	Liabilities	Assets	Liabilities
Loans to related parties					
GranBio LLC (i)	Subsidiary	-	31,713	-	33,044
BioEdge Agroindustrial Ltda. (ii)	Subsidiary	31,942	-	-	11,319
GranInvestimentos S.A. (iii)	Parent Company	-	17,037	-	-
Total		31,942	48,750	-	44,363
Current		-	48,750	-	44,363
Non-current		31,942	-	-	-

- Consolidated:

		09/30/2023		12/31/2022	
	Relation	Assets	Liabilities	Assets	Liabilities
Advances to suppliers					
Companhia Energética São Miguel dos Campos (iv)	Joint subsidiary	-	-	12,979	-
Total		-	-	12,979	-
Loans to related parties					
GranInvestimentos S. A (iii)	Parent Company	-	17,037	-	-
Olympia Shipping B.V. (v)	Other	-	39,344		
Total		-	56,381	-	-
Other accounts payable to related parties					
Fundo de investimentos de acionistas (vi)	Other	-	31,010	-	27.815
GranInvestimentos S.A. (vii)		-	-	-	35.687
Stratus Energy B.V. (viii)	Parent Company	-	20,818	-	-
Total		-	51,828	-	63.502
Grand Total		-	108,209	12,979	63.502
Current		-	56,381	12,979	-
Non-current		-	51,828	-	63,502

(In R$ thousand)

Operations affecting profit or loss for the periods:

	Relation	07/01/2023 to 09/30/2023	01/01/2023 to 09/30/2023	07/01/2022 to 09/30/2022	01/01/2022 to 09/30/2022
Lease income					
Companhia Energética São Miguel dos Campos (ix)	Joint subsidiary	-	-	3,312	13,251
Income from the sale of thermoelectric plant	Joint subsidiary				
Companhia Energética São Miguel dos Campos (x)		-	-	(90,636)	(90,636)

(i) Interest-free loans taken out from GranBio LLC with a defined maturity;

(ii) Denote the amounts in the Company's current account with its subsidiaries. The loans are interest free and have no defined maturity date.

(iii) Cash received from the Parent Company to supply cash for operating activities;

(iv) Denotes the supply of electricity, steam, treated water and inputs for the production process of 2G ethanol. As all the shares held by BioFlex in CESM (Joint Venture) had been transferred to Usina Caeté S.A., it was no longer presented as a related party. For further information see Note 5.a;

(v) On September 13, 2023, the related party Olympia Shipping B.V, a subsidiary of Stratus Energy B.V, which has the controlling shareholders as GranBio, assumed the debt with Banco Itaú, originally classified as Guarantee Honor on behalf of BioFlex in the amount of R$38,633 equivalent to USD 7,857. As the debt is now in Dollars, the updated value on September 30, 2023 is R$39,344 (USD 7,857). More information on Explanatory Notes 1 and 15.

(vi) Part of the debentures issued by the indirect parent company BioFlex Agroindustrial S.A. were purchased by an investment fund of the final beneficiaries of GranInvestimentos S.A. (18,000 shares in the updated amount of R$ 31,010), consequently the payable balance of the debentures started to be reclassified as other accounts payable with related parties;

(vii) Part of the debentures issued by the indirect parent company BioFlex Agroindustrial S.A. were purchased in August 2021 by the shareholder GranInvestimentos S.A. for R$ 1.00 (22,771 shares), consequently the balance payable of the debentures started to be reclassified as other accounts payable with related parties. On 2023, the debentures held by GranInvestimentos S.A were settled, as follows: (a) On June 28, 2023, the indirect subsidiary BioFlex purchased on the secondary market (7,345 shares) for the amount of R$12,247; (b) On September 29, 2023, it was also transferred to the indirect subsidiary BioFlex (3,342 shares) for the amount of R$5,756, and (c) On July 7, 2023, a private instrument of payment was signed between GranInvestimentos and with the related party Stratus Energy B.V., which has the same final shareholders as GranBio, being transferred (12,084 shares) for the amount of R$20,220.

(viii) Refers to 12,084 units of BFLE11 debentures for the amount of R$ 20,220 which were transferred as payment to Stratus by the former holder of the debentures, GranInvestimentos. The updated value on September 30, 2023 is R$20,818.

(ix) Billing referring to the lease of the boiler between the indirect subsidiaries BioFlex Agroindustrial S.A. and Companhia Energética São Miguel dos Campos – CESM. This billing ceased to exist in October 2022, after the sale of property, plant and equipment related to the thermoelectric power plant, as per Note 5 a.

(x) On September 30, 2022, BioFlex's thermoelectric assets were sold to Companhia Energética São Miguel dos Campos – CESM, the result of this sale generated a loss of R$90,636. More information on Explanatory Note 23.

(In R$ thousand)

Key management personnel compensation:

	Parent Company				Consolidated			
	07/01/2023 to 09/30/2023	01/01/2023 to 09/30/2023	07/01/2022 to 09/30/2022	01/01/2022 to 09/30/2022	07/01/2023 to 09/30/2023	01/01/2023 to 09/30/2023	07/01/2022 to 09/30/2022	01/01/2022 to 09/30/2022
Key management personnel compensation	(59)	(175)	(57)	(177)	(333)	(937)	(258)	(764)
Total	(59)	(175)	(57)	(177)	(333)	(937)	(258)	(764)

The amount paid as key management personnel compensation is included in personal expenses disclosed in Note 22.

(In R$ thousand)

11. Investments

a. Breakdown of balances:

	Parent Company	
	09/30/2023	12/31/2022
Direct and indirect subsidiaries	917,626	1,015,825
Total	917,626	1,015,825

b. Direct investments:

	Equity		Loss for the period	
	09/30/2023	12/31/2022	09/30/2023	09/30/2022
Investees				
BioEdge Agroindustrial Ltda.	389,971	464,182	(74,211)	(54,036)
BioVertis Produção Agrícola Ltda.	-	-	-	(3,171)
GranBio LLC	527,655	551,643	(17,375)	(19,759)

(In R$ thousand)

Changes in investments

c. Direct subsidiaries:

	Balance on 12/31/2022	Translation adjustments	Investments	Equity result	Balance on 09/30/2023
Subsidiaries					
BioEdge Agroindustrial Ltda.	464,182	-	-	(74,211)	389,971
GranBio LLC (i)	551,643	(22,398)	15,785	(17,375)	527,655
Total investment	1,015,825	(22,398)	15,785	(91,586)	917,626

(i) The amount of R$ 15,785 consists of financial contributions made in the investee based on its cash needs.

	Balance on 12/31/2021	Translation adjustment	Investments	Incorporation	Equity result	Balance on 09/30/2022
Subsidiaries						
BioEdge Agroindustrial Ltda.	379,032	-	-	16,471	(54,036)	341,467
BioVertis Produção Agrícola Ltda.	19,642	-	-	(16,471)	(3,171)	-
GranBio LLC (i)	592,481	(19,036)	12,981	-	(19,759)	566,667
Total investment	991,155	(19,036)	12,981	-	(76,966)	908,134

(i) The amount of R$ 12,981 consists of financial contributions made in the investee based on its cash needs.

d. Summary of direct subsidiaries' equity accounts

Direct subsidiaries on September 30, 2023	Assets	Liabilities	Controlling interest	Non-controlling interest	Equity
BioEdge Agroindustrial Ltda.	1,123,452	733,481	389,971	-	389,971
GranBio LLC	596,621	66,781	527,655	2,185	529,840

Direct subsidiaries on December 31, 2022	Assets	Liabilities	Controlling interest	Non-controlling interest	Equity
BioEdge Agroindustrial Ltda.	1,045,969	581,787	464,182	-	464,182
GranBio LLC	634,009	79,598	551,643	2,768	554,411

(In R$ thousand)

Direct subsidiaries	Net income (loss) 09/30/2023	Net income (loss) 09/30/2022
BioEdge Agroindustrial Ltda.	(74,211)	(54,036)
BioVertis Produção Agrícola Ltda.	-	(3,171)
GranBio LLC	(17,375)	(19,759)
	(91,586)	(76,966)

12. Property, plant and equipment

a. Breakdown of carrying amount

- Parent Company:

	09/30/2023			12/31/2022
	Cost	Depreciation	Net	Net
IT equipment	837	(819)	18	24
Improvement to rented properties	688	(65)	623	662
Furniture and fixtures	874	(872)	2	6
Administrative facilities	84	(84)	-	-
Right of use	2,081	(395)	1,686	1,790
	4,564	(2,235)	2,329	2,482

- Consolidated:

	09/30/2023			12/31/2022
	Cost	Depreciation	Net	Net
IT equipment	3,314	(3,076)	238	153
Furniture and fixtures	1,730	(1,626)	104	118
Lab plant and equipment	5,327	(4,782)	545	753
Agricultural plant and equipment	39,924	(34,279)	5,645	6,493
Improvement to rented properties	4,929	(2,763)	2,166	2,252
Industrial machinery, equipment and facilities	841,268	(178,170)	663,098	691,190
Property, plant and equipment in progress	8,169	-	8,169	3,942
Right of use	2,081	(395)	1,686	1,790
Land	2,162	-	2,162	2,247
Buildings and constructions	42,135	(5,399)	36,736	37,595
Total	951,039	(230,490)	720,549	746,533

(In R$ thousand)

b. Movement in property, plant and equipment:

- Parent Company

	Balance on 12/31/2022	Additions	Balance on 09/30/2023
Costs			
Improvements to rented property	688	-	688
Property, plant and equipment in progress	-	-	-
Furniture and fixtures	874	-	874
IT equipment	837	-	837
Administrative facilities	84	-	84
Right of use	2,081	-	2,081
Total	4,564	-	4,564
Depreciation			
Improvements to rented property	(26)	(39)	(65)
Furniture and fixtures	(868)	(4)	(872)
IT equipment	(813)	(6)	(819)
Administrative facilities	(84)	-	(84)
Right of use	(291)	(104)	(395)
Total	(2,082)	(153)	(2,235)
Total property, plant and equipment	2,482	(153)	2,329

	Balance on 12/31/2021	Addition	Write-off	Reclassification	Balance on 09/30/2022
Cost					
Improvements to rented property	-	-	-	688	688
Property, plant and equipment in progress	1,191	-	(503)	(688)	-
Furniture and fixtures	874	-	-	-	874
IT equipment	808	7	-	-	815
Administrative facilities	84	-	-	-	84
Right of use	2,081	-	-	-	2,081
Total	5,038	7	(503)	-	4,542
Depreciation					
Improvements to rented property	-	(13)	-	-	(13)
Furniture and fixtures	(846)	(16)	-	-	(862)
IT equipment	(808)	(4)	-	-	(812)
Administrative facilities	(82)	(2)	-	-	(84)
Right of use	(152)	(104)	-	-	(256)
Total	(1,888)	(139)	-	-	(2,027)
Total property, plant and equipment	3,150	(132)	(503)	-	2.515

(In R$ thousand)

- Consolidated:

	Balance on 12/31/2022	Addition	Write-off	Exchange variation	Balance on 09/30/2023
Costs					
IT equipment	3,257	119	-	(62)	3,314
Furniture and fixtures	1,734	-	-	(4)	1,730
Lab plant and equipment	5,495	-	-	(168)	5,327
Agricultural plant and equipment	40,209	-	(285)	-	39,924
Improvements to rented property	4,929	-	-	-	4,929
Industrial machinery, equipment and facilities	846,263	-	-	(4,995)	841,268
Property, plant and equipment in progress	3,942	4,227	-	-	8,169
Right of use	2,081	-	-	-	2,081
Land	2,247	-	-	(85)	2,162
Buildings and constructions	42,284	-	-	(149)	42,135
Total	952,441	4,346	(285)	(5,463)	951,039
Depreciation					
IT equipment	(3,104)	(30)	-	58	(3,076)
Furniture and fixtures	(1,616)	(15)	-	5	(1,626)
Lab plant and equipment	(4,742)	(198)	-	158	(4,782)
Agricultural plant and equipment	(33,716)	(829)	266	-	(34,279)
Improvements to rented property	(2,677)	(86)	-	-	(2,763)
Industrial machinery, equipment and facilities	(155,073)	(27,999)	-	4,902	(178,170)
Right of use	(291)	(104)	-	-	(395)
Buildings and constructions	(4,689)	(786)	-	76	(5,399)
Total	(205,908)	(30,047)	266	5,199	(230,490)
Total property, plant and equipment	746,533	(25,701)	(19)	(264)	720,549

(In R$ thousand)

	Balance on 12/31/2021	Additions	Write-off	Incorporation	Exchange variation	Reclassification	Balance on 09/30/2022
Cost							
IT equipment	3,489	120	(253)	(41)	(41)	-	3,274
Vehicles	20	-	(20)	-	-	-	-
Furniture and fixtures	2,020	-	(88)	(190)	(4)	-	1,738
Lab plant and equipment	6,433	-	(245)	(417)	(140)	-	5,631
Agricultural plant and equipment	43,601	-	(2,033)	(1,359)	-	-	40,209
Improvements to rented property	9,543	-	(5,302)	-	-	688	4,929
Machinery, equipment and facilities	1,015,660	-	(160,361)	(412)	(4,135)	-	850,752
Property, plant and equipment in progress	5,761	-	(1,131)	-	-	(688)	3,942
Right of use	2,081	-	-	-	-	-	2,081
Land	2,394	-	-	-	(70)	-	2,324
Buildings and constructions	44,925	-	(1,532)	(853)	(123)	-	42,417
Total	1,135,927	120	(170,965)	(3,272)	(4,513)	-	957,297
Depreciation							
IT equipment	(3,481)	(3)	253	41	48	-	(3,142)
Vehicles	(20)	-	20	-	-	-	-
Furniture and fixtures	(1,827)	(52)	76	190	6	-	(1,607)
Lab plant and equipment	(4,922)	(506)	121	417	107	-	(4,783)
Agricultural plant and equipment	(31,996)	(3,223)	1,142	1,359	-	-	(32,718)
Improvements to rented property	(3,299)	(190)	859	-	-	-	(2,630)
Machinery, equipment and facilities	(192,583)	(18,562)	52,035	412	3,533	-	(155,165)
Right of use	(152)	(104)	-	-	-	-	(256)
Buildings and constructions	(4,680)	(763)	24	853	48	-	(4,518)
Total	(242,960)	(23,403)	54,530	3,272	3,742	-	(204,819)
Total property, plant and equipment	892,967	(23,283)	(116,435)	-	(771)	-	752,478

Property, plant and equipment in progress

As at September 30, 2023 and December 31, 2022, the balance of property, plant and equipment in progress refers to expenses to upgrade consumables processing and feeding machinery and upgrades to the dedusting system. In addition, a consultancy was hired to project the expansion of 2G ethanol plant's production capacity from 30 million to 60 million liters/year. Expansion expenses started in the first quarter of 2023.

Guarantees

The residual carrying amount of property, plant and equipment pledged as collateral for loans and borrowings amounts to R$ 704,571 as at September 30, 2023. For more information see Note 15 c.

Write-off of assets

As at September 30, 2023, the amount of R$ 19 represents the write-off for the sale of a vehicle. For more information see Note 23.

(In R$ thousand)

13. Intangible assets

- Consolidated:

	Software	Development (Yeast and Energy cane)	Joint development (Energy cane)	Licenses and intellectual property	Goodwill	Total
Balance as at December 31, 2021	116	28,500	-	494,883	129,931	653,430
Addition	-	-	-	577	-	577
Write-off	-	(15,789)	-	(225)	-	(16,014)
Amortization (a)	(5)	(821)	-	(12,657)	-	(13,483)
Exchange variation	-	-	-	(15,013)	(4,049)	(19,062)
Balance as at September 30, 2022	111	11,890	-	467,565	125,882	605,448
Balance as at December 31, 2022	111	11,890	-	447,077	121,484	580,562
Additions	-	-	6,484	818	-	7,302
Amortization (a)	(111)	-	(405)	(12,188)	-	(12,704)
Exchange variation	-	-	-	(17,831)	(4,892)	(22,723)
Balance as at September 30, 2023	-	11,890	6,079	417,876	116,592	552,437

(a) Amortization expenses were booked as administrative and general expenses.

- Development (yeast and energy cane) - Development of genetically modified yeast to ferment cellulose sugar in the amount of R$ 11,890 on September 30, 2023. On September 30, 2022 the balance comprises R$ 11,890 for the development of yeast.
- Joint development (energy cane) – GranBio signed a global alliance with Nuseed Group until 2034 for the technical development of sugarcane varietals as a source of biomass for second-generation biochemicals and fuels (2G). The alliance with Nuseed guarantees an exclusive licensing agreement for energy cane in 2G biorefineries worldwide. In January 2023, R$ 6,484 (USD 1,250) was paid for the first phase of the partnership;
- Licenses and intellectual property – Amounts referring to the development of licenses and intellectual property in the development of nanocellulose technology, biorefineries and commercial and industrial secrets. On March 31, 2019, the amount of R$ 368,086 was recognized referring to the intangible assets identified by Management in the business combination between Granbio LLC and the companies GranAPI LLC, API- Property-Intellectual Holdings LLC, American Process Conversion Technologies LLC and American Process Conversion Technologies Holdco LLC. The amount of technology licenses and intellectual property was calculated based on the expected revenue generated by the sale of licenses to third parties, based on the existing commercial pipeline and growth expected for the number of projects for converting biomass into cellulosic ethanol, biochemicals and nanocellulose;
- Goodwill – Value refers to the expected future earnings of the companies GranAPI LLC, API-Propriety Intellectual Holdings LLC, American Process Conversion Technologies LLC and American Process Conversion Technologies Holdco LLC, through their existing technology. Management used the relief-from-royalty method to estimate the fair value of these companies' technology. This method assumes that, rather than paying to acquire a business, a company would be willing to pay to exploit the benefits related to this class of assets. This goodwill is not deductible for tax purposes.

14. Impairment analysis

a. Property, plant and equipment

At each annual reporting date, the Group checks whether there is evidence that the carrying amount of a definite-lived asset has incurred impairment. If there is evidence of impairment, a test is carried out to quantify the asset's recoverable value. The recoverable value of an asset is determined by the higher of: (a) its fair value less estimated costs to sell and (b) its value in use. The value in use is measured based on the discounted cash flows (before tax) deriving from the continuous use of an asset until the end of its useful life.

Although management understands that there is evidence that its property, plant and equipment has suffered impairment, given that the fair value less costs to sell indicates that the construction of a plant similar to that of BioFlex Agroindustrial S.A. would result in values higher than the depreciated carrying amount, due to the short operational history resulting from strategic decisions made by Management, which considered micro and macroeconomic issues for past periods and investments in innovation, the Group also performs an impairment test on the value in use for the property, plant and equipment intended for the production of 2G ethanol at BioFlex Agroindustrial S.A., substantially developed based on internal management assumptions.

(In R$ thousand)

Management's assessment shows that in the last year there are no indications of a significant change in their calculations and analyses that could lead to the need to recognize impairment losses on property, plant and equipment. However, if current or future results are not consistent with the estimates and assumptions used in the estimated future cash flows and determination of the property, plant and equipment's fair value, the Company may be exposed to losses.

As at September 30, 2023, the Group assessed its property, plant and equipment and did not identify any evidence of impairment.

b. Intangible assets and goodwill

Goodwill resulting from business combinations and indefinite-lived intangible assets are tested for impairment at least once a year, in December.

As regards the impairment test for the subsidiary GranBio LLC, as at December 31, 2022 the Group used a 10-year cash flow plus perpetuity, which reflects the expected use of the recently implemented asset and the investments being made to achieve commercial capacity in an ongoing operation based on financial estimates approved by Senior Management.

The licenses' sale prices were determined based on evidence from target markets. The opex projection was compiled based on the history of costs incurred adjusted to an industrial capacity level of use.

As at September 30, 2023, the Group assessed its intangible assets and did not identify any evidence of impairment.

15. Loans and borrowings

				Parent Company		Consolidated	
Type	Index	Interest	Maturity	09/30/2023	12/31/2022	09/30/2023	12/31/2022
FINEP – Financing	TJLP	2% to 5%	Feb/29	127,661	132.376	127.661	132.376
Working Capital	CDI	+1.19	Dec/27	-	-	194.951	175.072
Honoring bank guarantees	CDI	-	Jun/22	-	-	-	34.805
				127,661	132.376	322.612	342.253
Current				12.051	9.346	20.737	44,152
Non-current				115.610	123.030	301.875	298,101

Short-term debt had been putting pressure on the Group's cash flow. Management concluded some renegotiations with financial institutions to lengthen the debt profile in order to readjust its operating cash flow. See Note 1.

Finep - Financing

FINEP financing was contracted with the objective of supporting the research and development projects for biomass (Energy Cane Vertix) and yeast, in addition to the development of technologies for converting biomass into biochemicals and biofuel.

(In R$ thousand)

Working capital and Honoring Bank Guarantees

In FY 2021, the Company carried out a restructuring of its loans and borrowings with the main creditors, and the guarantees on loans and borrowings from public banks were exercised by private banks. Negotiations were made with some of these private banks and the renegotiated debt was reclassified as Working Capital. On September 01, 2023, the debt of the indirect subsidiary BioFlex Agroindustrial S.A with Banco Itaú, originally classified as Guarantee Honor, was renegotiated through a Bank Credit Certificate (CCB) instrument. On September 13, 2023, the related party Olympia Shipping B.V, a subsidiary of Stratus Energy B.V, which has the same controlling shareholders as GranBio, assumed the loan on behalf of BioFlex in the amount of R$38,633 equivalent to USD 7,857. Subsequently, on October 19, 2023, Olympia Shipping B.V onerously assigned such credit which, on that date, was recognized in the amount of R$ 39,586, to its controlling company, Stratus Energy B.V, with the consent of BioFlex which, on the same date, through of a Private Payment Instrument and Other Covenants, assigned 22,848 units of BLFE11 debentures, paying off the balance payable to the related party (Explanatory Note 1, 10 and 30).

a. Debt amortization schedule

See below the contractual maturities of financial liabilities:

	Parents Company		Consolidated	
	09/30/2023	12/31/2022	09/30/2023	12/31/2022
1 year	12,051	9,346	20,737	44,152
2 years	26,187	14,798	57,955	20,025
3 years	23,756	27,257	48,342	55,865
4 years and onwards	65,667	80,975	195,578	222,211
Total	127,661	132,376	322,612	342,253

b. Reconciliation of equity changes with cash flows arising from financing activities

	Parent Company	Consolidated
Balance as at December 31, 2021	147,439	551,017
Amortization of loans and borrowings (principal)	(14,201)	(14,201)
Provision for interest on loans and borrowings	11,599	51,908
Amortization of loans and borrowings (interest)	(11,191)	(19,099)
Balance as at September 30, 2022	133,646	569,625
Balance as at December 31, 2022	132,376	342,253
Amortization of loans and borrowings (principal)	(4,675)	(4,675)
Provision for interest on loans and borrowings	10,441	34,148
Amortization of loans and borrowings (interest)	(10,481)	(10,481)
Assumption for related parties – Olympia	-	(38,633)
Balance as at September 30, 2023	127,661	322,612

(In R$ thousand)

a. Guarantees

The Company's debts are secured by bank guarantee and corporate guarantee and real guarantees. Real guarantees are imposed on property, plant and equipment in favor of BNDES, FINEP, Bradesco and Banco do Brasil. The institutions have mortgages on the industrial assets of the subsidiary BioFlex, and FINEP also has a guarantee on agricultural equipment. See amounts of property, plant and equipment given as collateral in Note 12.

b. Covenants

The Group has loans and borrowings in the parent company and in the consolidated statements, maturing in February 2029.

The loans and borrowings contain non-financial operating covenants establishing a range of obligations, listed below:

- Compliance with environmental obligations and legislation, the biosafety quality certificate (CQB) and the Gene Pool Management Council (CGEN);
- Submit federal, state and municipal tax debt clearance certificates;
- Have not incurred protests for indisputable debts;
- Pausing of operating activities;
- Corporate and equity restructuring.

The Executive Board and its legal advisers understand there was no breach of covenants during the nine-month period ended September 30, 2023 until the date of approval of these individual and consolidated interim financial statements.

16. Trade payables

	Parent Company		Consolidated	
	09/30/2023	12/31/2022	09/30/2023	12/31/2022
Domestic payables	317	562	9,574	10,584
Overseas payables	-	-	26,741	29,086
Total	317	562	36,315	39,670

Trade payables are mainly due to the purchase of raw materials for the 2G ethanol production process and independent auditing and consultancy services acquired.

The Group has not yet developed a proprietary enzyme solution, which means that its technological and licensing process depend on enzyme suppliers, which are currently sourced exclusively from Novozymes North America INC.

(In R$ thousand)

17. Advances from clients

	Consolidated	
	09/30/2023	12/31/2022
Collaboration agreement - NextChem (i)	1,002	5,739
Current	1,002	5,739

(i) On July 31, 2020, the Group established a strategic alliance with NextChem, a subsidiary of the Italian engineering group Maire Tecnimont with a worldwide presence in renewable energy. This is a 10-year partnership and has the following values and premises:

- USD 4,000 thousand received after signing the contract;
- USD 4,000 thousand will be received after the technology license has been sold;
- USD 4,000 thousand will be received after the plant starts production for the sale of the first license or the sale of the second technology license;
- USD 3,000 thousand will be received in engineering services to optimize the technology and develop a “process design package”.

The first tranche of R$ 21,855 (USD 4,000) thousand was received in August 2020 and recognized as advances to clients, in which the amortization will occur within 40 months, according to the contract. The contract has a total value of R$ 78,050 (USD 15,000 thousand), with residual tranches of R$ 57,236 (USD 11,000 thousand), of which R$ 41,626 (USD 8 thousand) will be received in cash and R$ 15,610 (USD 3,000 thousand) in services provided by Nextchem. These amounts were converted to dollars at the time of the operation.

There was a partial pro-rata amortization of the 40 months (USD 100 per month) of the contract, with the carrying amount of R$ 1,002 (USD 200 thousand) converted into the exchange rate as at September 30, 2023.

18. Provision for contingencies

The Company and its subsidiaries are defendants in lawsuits rated as probable defeats by our legal advisers in the consolidated amount of R$ 530 as at September 30, 2023.

The Company and its subsidiaries are defendants in lawsuits rated as possible defeats by our legal advisers in the consolidated amount of R$ 2,592 as at September 30, 2023 (R$ 4,349 as of December 31, 2022), for which no provisions were recorded.

19. Equity

a. Share capital

The ownership structure is as follows:

	September 30, 2023		
	Capital - R$	No. of shares	Interest
Shareholder			
GranInvestimentos S/A	377,662	93,038,165	86%
BNDES Participações S/A	600,000	15,094,340	14%
Total	977,662	108,132,505	100%

(In R$ thousand)

	December 31, 2022		
	Capital - R$	No. of shares	Interest
Shareholder			
GranInvestimentos S/A	377,662	93,038,165	86%
BNDES Participações S/A	600,000	15,094,340	14%
Total	977,662	108,132,505	100%

b. Advances for Future Capital Increase (AFAC)

On December 30, 2022, the shareholder GranInvestimentos S.A. resolved, in a private instrument of advance for future capital increase, to transfer to the AFAC the amount of R$ 341,059, which it had receivable from its direct subsidiary GranBio Investimentos S.A. referring to the amounts sent for supply cash from operating activities which will be converted into registered common shares. The Company expects to pay in capital by the end of FY 2023.

c. Capital reserve

In a Shareholders' Agreement signed on April 30, 2013 between BNDESPAR and GranInvestimentos S.A. (shareholders), it was stipulated that the shares were initially issued at R$ 39.75 each. Capital contributions after the signature of this Agreement had the share price updated by the Extended National Consumer Prices Index (IPCA). The variation in the share price between the date of the Shareholders' Agreement and the date of the effective receipt of the capital contribution was multiplied by the total number of paid-in shares, with this variation being recorded as a Capital Reserve.

d. Assets and liabilities valuation adjustments

The asset and liability valuation adjustments item includes accumulated adjustments for foreign currency differences resulting from the translation of the interim individual and consolidated financial statements of foreign operations. In the nine-month period ended September 30, 2023, a translation of R$ 22,398 was recognized. On September 30,2023, the balance of the item is R$ 171,215.

20. Revenue from goods and services sold

The table below breaks down the company’s gross revenue in accordance with CPC 47- item 112A.

	Consolidated			
	07/01/2023 to 09/30/2023	01/01/2023 to 09/30/2023	07/01/2022 to 09/30/2022	01/01/2022 to 09/30/2022
Revenue from collaboration agreement (i)	1,464	4,508	2,581	7,208
Revenue from royalties (ii)			100	442
Revenue	1,464	4,508	2,681	7,650
Revenue from equipment leasing (iii)	-	-	3,312	13,251
Other revenues	-	-	3,312	13,251
Total revenue	1,464	4,508	5,993	20,901
Sales taxes	-	-	(315)	(1,266)
Revenue from goods and services sold	1,464	4,508	5,678	19,635

(In R$ thousand)

(i) Revenue of R$ 4,508 (USD 900) due to recognition of revenue from the contract with Nextchem;
(ii) Operating revenue from energy cane royalties;
(iii) Operating revenue of the indirect subsidiary BioFlex Agroindustrial S.A. arising from the leasing of electricity cogeneration assets with CESM.

For further information on operating revenue see Note 27 - Segment Reporting.

21. Cost of goods sold and services rendered

	Consolidated			
	07/01/2023 to 09/30/2023	01/01/2023 to 09/30/2023	07/01/2022 to 09/30/2022	01/01/2022 to 09/30/2022
Cost from commercial partner and services provided (i)	(26)	(3,025)	(3,160)	(9,201)
Leasing cost (ii)	-	-	(1,116)	(4,463)
Idleness cost (iii)	(10,405)	(31,000)	(4,924)	(14,101)
	(10,431)	(34,025)	(9,200)	(27,765)

(i) Operational cost of US indirect subsidiaries;
(ii) Depreciation cost of leased thermoelectric assets;
(iii) Idleness cost of the 2G ethanol production plant of the indirect subsidiary BioFlex.

(In R$ thousand)

22. Administrative and general expenses

	Parent Company				Consolidated			
	07/01/2023 to 09/30/2023	01/01/2023 to 09/30/2023	07/01/2022 to 09/30/2022	01/01/2022 to 09/30/2022	07/01/2023 to 09/30/2023	01/01/2023 to 09/30/2023	07/01/2022 to 09/30/2022	01/01/2022 to 09/30/2022
Depreciation and amortization (i)	(51)	(153)	(55)	(139)	(4,458)	(13,714)	(4,866)	(14,855)
Third-party services (ii)	(570)	(3,196)	(4,147)	(7,496)	(2,473)	(10,370)	(9,449)	(17,029)
Personnel expenses	(37)	(119)	(44)	(249)	(1,330)	(4,186)	(2,218)	(5,869)
Taxes and fees	(143)	(617)	(236)	(579)	(455)	(2,559)	407	(407)
Insurance	(47)	(139)	(46)	(137)	(1,188)	(3,180)	(1,007)	(4,830)
General expenses (iii)	(57)	(67)	(15)	(54)	(1,465)	(3,192)	(381)	(943)
Occupation expenses	(61)	(189)	(227)	(297)	(82)	(245)	(269)	(441)
Travel	(1)	(20)	(11)	(30)	(26)	(243)	(38)	(130)
Vehicle expenses	(1)	(1)	-	-	(32)	(45)	(6)	(45)
Selling expenses	-	(4)	-	(4)	-	(10)	-	(4)
Total	(968)	(4,505)	(4,781)	(8,985)	(11,509)	(37,744)	(17,827)	(44,553)

(i) Depreciation of other assets such as furniture, vehicles and IT equipment are recognized as an administrative and general expense. In the consolidated quarterly statement, the depreciation expense as at September 30, 2023 was R$ 1,010 (R$ 1,373 as at September 30, 2022) and the amortization expense for intangible assets as at September 30, 2023 was R$ 12,704 (R$ 13,482 as at September 30, 2022);
(ii) Denotes expenses on third-party services provided such as audit, tax and legal;
(iii) General expenses with mail, fuel, materials for use and consumables, costs with legal proceedings, property security and others.

(In R$ thousand)

23. Other operating income

	Consolidated			
	07/01/2023 to 09/30/2023	01/01/2023 to 09/30/2023	07/01/2022 to 09/30/2022	01/01/2022 to 09/30/2022
Proceeds from sale of property, plant and equipment (i)	-	55	-	-
Proceeds from the sale of intangible assets (ii)	-	-	111,740	115,047
Other operating income	1,455	770	5,165	4,011
Total other income	1,455	825	116,905	119,058
Provision for related-party losses (iii)	-	-	(4,661)	(15,145)
Proceeds from sale of property, plant and equipment (iv)	-	-	(91,241)	(91,634)
Other operating income	-	-	-	-
Total other expenses	-	-	(95,902)	(106,779)
Total	1,455	825	21,003	12,279

(i) Proceeds from the sale of a vehicle authorized by the Company's management to be used as payment to a supplier. This transaction did not generate cash, as stated in Note 12;

(ii) On September 8, 2022, the indirect subsidiary BioFlex Agroindustrial S.A. and Atlântica Sementes S.A, from the Nuseed Group, signed a long-term strategic alliance to accelerate investments in Research and Development (R&D) and commercialization in global energy-cane markets. Atlântica Sementes S.A. acquired the commercial and energy cane improvement assets and the R&D program with the aim of improving the value of energy produced through innovation in bioenergy cane. The transaction involved the receipt of U$25,000, of which R$120,111 (U$23,000) in cash and R$10,813 (U$2,000) due until December 31, 2022. The result of this sale generated a gain of R$115,767 , of which R$112,460 came from the sale of intangible assets and R$3,307 from the transfer of customer advances that must be performed by the buyer. In addition to this operation with Atlântica Sementes S.A, the Company wrote off R$720 in intangible assets due to project discontinuation;

(iii) Provision for reducing impairment of accounts receivable with the hereto Joint Venture Companhia Energética de São Miguel dos Campos (CESM) arising from the leasing of the boiler. The cash flow projected at the time was lower than the total balance receivable;

On September 30, 2022, the Company's management authorized the sale of fixed assets related to the thermoelectric power plant of the indirect subsidiary BioFlex Agroindustrial S.A, which were leased to the Joint Venture, Companhia Energética de São Miguel dos Campos (CESM). The result of this sale was a loss of R$90,636. This sale is part of the process of keeping only the assets related to its main corporate purpose of producing 2G ethanol in BioFlex. Additionally, this sale concludes the first phase of negotiation with CESM shareholders due to the restructuring of the Joint Venture. In addition to this operation, the Company wrote off other fixed assets in the amount of R$998.

(In R$ thousand)

24. Net financial income/loss

	Parent Company				Consolidated			
Financial expenses	07/01/2023 to 09/30/2023	01/01/2023 to 09/30/2023	07/01/2022 to 09/30/2022	01/01/2022 to 09/30/2022	07/01/2023 to 09/30/2023	01/01/2023 to 09/30/2023	07/01/2022 to 09/30/2022	01/01/2022 to 09/30/2022
Bank expenses	-	(883)	(218)	(258)	(3)	(890)	(526)	(570)
IOF (tax on financial operation)	(20)	(61)	(18)	(49)	(21)	(61)	(19)	(51)
Interest expenses (i)	(57)	(251)	(80)	(269)	(2,988)	(7,976)	(4,044)	(6,377)
Interest on loans and borrowings	(3,359)	(10,441)	(3,450)	(11,599)	(11,521)	(34,147)	(12,495)	(51,908)
Monetary updates on liabilities	-	-	-	-	-	-	(434)	(434)
	(3,436)	(11,636)	(3,766)	(12,175)	(14,533)	(43,074)	(17,518)	(59,340)
Financial revenues								
Interest received	-	-	-	-	444	1,293	2,106	2,157
Financial discounts obtained	-	-	1,144	1,144	89	224	1,299	1,356
Earnings from investments	1,912	7,998	2,145	5,283	577	3,832	870	871
Monetary updates	3	3	16	16	25	25	334	334
Exchange variation	(1,194)	1,331	(1,068)	1,101	(3,064)	1,915	(2,111)	2,116
	721	9,332	2,237	7,544	(1,929)	7,289	2,498	6,834
Net financial income (loss)	(2,715)	(2,304)	(1,529)	(4,631)	(16,462)	(35,785)	(15,020)	(52,506)

(i) Interest arising mainly from debentures, interest and fines for late payment of taxes, suppliers and financial charges with guarantees of loans with financial institutions.

.

(In R$ thousand)

25. Accumulated tax losses

a. Amounts recognized in profit or loss for the period – Consolidated:

	Consolidated 09/30/2023	Consolidated 09/30/2022
Current income tax and social contribution expense		
Current year expense	(243)	-
Total	(243)	-
Deferred income tax and social contribution expense		
Temporary difference:		
Realization through amortization of intangible assets	3,508	3,596
	3,508	3,596

b. Deferred tax asset not recognized - Consolidated

The Group did not generate taxable profit in previous years and, therefore, there is increased doubt about whether future taxable profit will be available in the foreseeable future to realize deferred tax assets. As a result, deferred tax assets were not recognized as at September 30, 2023.

For the Brazilian companies, accumulated tax losses and the negative base of social contribution do not expire, however, they can be offset only up to the limit of 30% of annual taxable earnings. The total income tax loss and negative base of social contribution is R$ 929,153 as at September 30, 2023 (R$ 848,268 as at December 31, 2022).

For North American companies, tax losses accrued prior to December 31, 2017 can be used over 20 years and there is no taxable income limit for the use of these losses. Tax losses after December 31, 2017 can be carried forward indefinitely and can be used to offset only 80% of current year's taxable income. The total tax loss is R$ 159,808 as at September 30, 2023 (R$ 122,417 as at December 31, 2022).

The tax returns of all Group companies are subject to tax inspections and revisions by the tax authorities for varying periods. As a result of these inspections and reviews, authorities may question the methodologies, criteria and interpretations of the legislation, and consequently, change the amounts recognized by the Company in the quarterly report and/or result in legal challenges.

c. Movement on deferred tax balance

	Consolidated
Opening net balance as at December 31, 2021	57,075
Realization through amortization of intangible assets	(3,596)
Exchange variation on translating taxes from the functional currency to the presentation currency	(1,969)
Closing net balance as at September 30, 2022	51,510
Opening net balance as at December 31, 2022	48,493
Realization through amortization of intangible assets	(3,508)
Exchange variation on translating taxes from the functional currency to the presentation currency	(1,952)
Closing net balance as at September 30, 2023	43,033

d. Tax benefit

The indirect subsidiary BioFlex Agroindustrial S.A. has a benefit from the federal tax authority and the Northeast Development Agency (SUDENE) awarding a nonreturnable entitlement to a 75% reduction in the IRPJ and Surcharge in the period 01/01/2015 to 12/31/2024.

26. Financial instruments and risk management

Operations with financial instruments are fully recognized in the accounts and restricted to cash and cash equivalents, accounts receivable, loans and borrowings, and other accounts receivable and payable from related parties, loans, financing, trade payable and other accounts payable.

The Group and its direct and indirect subsidiaries do not invest in derivatives or any other risky assets on a speculative basis.

The Group and its direct and indirect subsidiaries assess such financial assets and liabilities with respect to market value was conducted on the basis of available information and appropriate assessment methods. However, the interpretation of market data and selection of assessment methods requires considerable judgment and estimates to calculate the most appropriate realizable value. As a result, the estimates do not necessarily indicate the values that could be realized in the current market.

The activities of the Company and its direct and indirect subsidiaries expose them to various financial risks: credit risk, liquidity risk and market risk (including interest rate risk), as described below:

a. Credit risk

Credit risk is the risk of financial loss to the Company if a client or counterparty to a financial instrument fails to meet its contractual obligations. This risk is primarily posed by trade receivables.

The carrying amount of financial assets represents the maximum credit exposure.
The Company has a credit policy whose purpose is to set procedures for granting loans in business transactions that are in line with the required levels of quality, fastness and security.

The Group determines credit limits by analyzing the client's credit standing, considering: (i) onboarding information (ii) economic and financial information and (iii) historical purchases and payments.

b. Liquidity risk

The cautious management of liquidity risk implies keeping enough cash and securities and credit facilities to be able to settle market positions. Due to the dynamic nature of their businesses, the Group and its direct and indirect subsidiaries use flexible funding by maintaining bank credit facilities.

Management monitors the level of the Company and its direct and indirect subsidiaries' liquidity, considering the expected cash flow and cash and cash equivalents. Furthermore, the liquidity management policy of the Company and its direct and indirect subsidiaries entails projecting cash flows and considering the level of net assets required to achieve these projections and maintain the debt financing plans.

(In R$ thousand)

Management is continuing to look into alternatives to guarantee a balanced capital structure. See further information in Note 1.

The following are the remaining contractual financial liability maturities and exclude the impact of netting agreements:

	Parent Company				
Non-derivative financial liabilities	Carrying amount	6 months or less	6 to 12 months	1 to 3 years	More than 3 years
Loans and borrowings*	127,661	6,330	6,651	85,435	85,285
Trade payables	317	317	-	-	-
Related-party loans	48,750	48,750	-	-	-
Accounts payable	1,898	27	53	1,818	-
	178,626	55,424	6,704	87,253	85,285

	Consolidated				
Non-derivative financial liabilities	Carrying amount	6 months or less	6 to 12 months	1 to 3 years	More than 3 years
Loans and borrowings*	322,612	10,964	11,595	280,302	188,873
Trade payables	36,315	36,315	-	-	-
Related-party loans	56,381	56,381	-	-	-
Accounts payable	3,824	339	678	2,807	-
	419,132	103,999	12,273	283,109	188,873

(*) Amounts in each age range have projected interest to be incurred.

The maturity analyses of the Group do not project cash flows that could occur significantly earlier or at significantly different amounts.

- ## Market risk

The Group is exposed to interest-rate changes, charged on its loans and borrowings and exchange variation on the assets and liabilities of the overseas-based direct and indirect subsidiaries. To minimize possible impacts triggered by these changes, the Group adopts the policy of diversifying these contracts. The Group is primarily exposed to changes in CDI and TJLP interest rates, which are applied to its loans and borrowings.

At the quarterly reporting date, the profile of the Company's financial instruments yielding interest was:

	Carrying amount			
	Parent Company		Consolidated	
Variable-income instruments	09/30/2023	12/31/2022	09/30/2023	12/31/2022
Liabilities				
Loans and borrowings (CDI)	-	-	(194,951)	(209,877)
Loans and borrowings (TJLP)	(127,661)	(132,376)	(127,661)	(132,376)
Total	(127,661)	(132,376)	(322,612)	(342,253)

(In R$ thousand)

The profile of the assets and liabilities resulting from the consolidation of the direct and indirect subsidiaries in USD as the functional currency has been summarized below, and is exposed to exchange variation:

	Consolidated	
Instruments exposed to exchange variation	09/30/2023	12/31/2022
Assets		
Cash and cash equivalents	125	105
Accounts receivable	1,940	1,857
Other financial assets	54,325	56,932
	56,390	58,894
Liabilities		
Trade payables	(5,461)	(6,858)
Other accounts payable	(5,460)	(6,188)
Accounts payable	(11,823)	(12,319)
	(22,744)	(25,365)

Cash flow sensitivity analysis for variable-rate instruments and exchange variation

The sensitivity analysis considered the loans and borrowings which are restated by the CDI and TJLP indexes.

The sensitivity analysis on interest rates on loans and borrowings considers an increase and reduction of 25% and 50% in interest rates and how this would impact equity and results. This analysis takes into account the amounts presented in the quarterly statements as at September 30, 2023. Except for the previously mentioned 25% and 50% variation, no other changes were projected:

						09/30/2023
Interest rate exposure	Balance	Probable	25%	50%	-25%	-50%
Loans and Borrowings						
TJLP	(127,661)	(8,362)	(10,452)	(12,543)	(6,271)	(4,181)
CDI	(194,951)	(24,661)	(30,827)	(36,992)	(18,496)	(12,331)
Profit or loss for the period	(322,612)	(33,023)	(41,279)	(49,535)	(24,767)	(16,512)

The interest rates the Company is subject to, based on projections of these rates in a probable scenario and the sensitivity analysis, are the following:

					09/30/2023
	Probable	25%	50%	-25%	-50%
TJLP (i)	6.55%	8.19%	9.83%	4.91%	3.28%
CDI (ii)	12.65%	15.81%	18.98%	9.49%	6.33%

(i) Interest rates based on information available at FINEP. Source: FINEP;
(ii) Interest rates based on information available at CETIP.

The sensitivity analysis into the exchange rates with the 25% and 50% increase and decrease in the consolidated figures is as follows, including the most likely USD variation used for translation on September 30, 2023. As at September 30, 2023, the USD exchange rate was R$ 5.0076 to the USD:

Exposure to exchange rates	Carrying amount in R$	Probable – US$	25%	50%	-25%	-50%
Assets	56,390	11.261	14.097	28.195	(14.097)	(28.195)
Liabilities	(22,744)	(4.542)	(5.686)	(11.372)	5.686	11.372
Profit or loss exposure in the period		6.719	8.411	16.823	(8.411)	(16.823)

(In R$ thousand)

For the effects of the investments in overseas subsidiaries, see below the sensitivity analysis with the probable scenario for the future exchange rate:

					09/30/2023
	Probable	25%	50%	-25%	-50%
US dollar (US$)	5.0076	6.2595	7.5114	3.7557	2.5038

Capital management

The objective of the Company´s capital management is to ensure that it maintains its strong credit rating with the financial institutions and its excellent capital ratio, in order to support the Company´s business and maximize value for its shareholders. The Group and its direct and indirect subsidiaries control their capital structure by making adjustments and adapting to the existing economic conditions. In its net debt structure the Group includes loans and borrowings less cash and cash equivalents and short-term investments.

	Parent Company		Consolidated	
	09/30/2023	12/31/2022	09/30/2023	12/31/2022
Cash and cash equivalents	8	1	135	64,723
Short-term Investments	13,724	7,186	13,724	7,186
(-) Loans and borrowings	(127,661)	(132,376)	(322,612)	(342,253)
Net debt	(113,929)	(125,189)	(308,753)	(270,344)
Equity	787,448	908,219	789,633	910,987
Equity and net debt	673,519	783,030	480,880	640,643

Classification of financial instruments

The table below shows the main financial instruments by category.

Parent Company

	Amortized cost	
Financial assets	09/30/2023	12/31/2022
Cash and cash equivalents	8	1
Related parties loans	31,942	-
Total	31,950	1
Liabilities		
Trade payable	317	562
Related parties loans	48,750	44,363
Loans and borrowings	127,661	132,376
Accounts payable	1,898	2,069
Total	178,626	179,370

	Fair value through profit or loss	
Financial assets	09/30/2023	12/31/2022
Short-term investments	13,724	69,061
Total	13,724	69,061

(In R$ thousand)

Consolidated:

	Amortized cost	
Financial assets	09/30/2023	12/31/2022
Cash and cash equivalents	135	64,723
Accounts receivable	1,940	2,032
Total	2,075	66,755
Liabilities		
Trade payable	36,315	39,670
Loans and borrowings	322,612	342,253
Related parties' loans	56,381	-
Other accounts payable to related parties	51,828	63,502
Other accounts payable	3,824	5,026
Total	470,960	450,451

	Fair value through profit or loss	
Financial assets	09/30/2023	12/31/2022
Short-term investments	13,724	7,186
Total	13,724	7,186

The fair values of the financial instruments presented do not significantly vary from the balances presented in the statement of financial position.

27. Segment reporting

Basis for segmentation

The Group has the following 3 strategic divisions, which are its reportable segments. These divisions offer different products and services, and are managed separately because they require different technologies. The following summary describes the operations of each reportable segment of the Company:

Reportable segments	Operation
BioVertis	Company engaged in the experimentation, development, plantation, production and collection of biomass, i.e., Vertix energy cane and sugarcane straw.
BioFlex	Production of biomass, processing biomass for the production and sale of biofuel, electricity, biochemicals and pharma chemicals, technological research and development, sale of sugarcane straw, bagasse and biomass.
Biotech	Development of technology to convert biomass into cellulose ethanol, biochemicals and nanocellulose.

Information about reportable segments

Information related to each reportable segment is set out below.
The performance is assessed based on final net income, as Management believes that this information is the most important for assessing the results of the respective segments:

(In R$ thousand)

	September 30, 2023				
	BioVertis	BioFlex	Biotech	Others	Total
Revenue from goods sold and services rendered	-	-	4,508	-	4,508
Cost of goods sold and services rendered	-	(31,000)	(3,025)	-	(34,025)
Gross (Loss) Profit	-	(31,000)	1,483	-	(29,517)
Operating revenue (expenses)					
Administrative expenses	-	(9,083)	(10,293)	-	(19,376)
Depreciation and amortization	-	(794)	(12362)	-	(13,156)
Other revenue (expenses)	-	1,202	(399)	-	803
	-	(8,675)	(23,054)	-	(31,729)
Net (loss) before financial income and expenses	-	(39,675)	(21,571)	-	(61,246)
Financial income	-	2,039	210	-	2,249
Financial expense	-	(37,101)	(105)	-	(37,206)
Net financial result	-	(35,062)	105	-	(34,957)
Deferred income tax and social contribution	-	-	3,508	-	3,508
Net (loss) for the period – Subtotal	-	(74,737)	(17,958)	-	(92,695)
Others				(6,261)	(6,261)
Net (loss) for the Period				(6,261)	(98,956)
Segment reporting – Assets					
Inventories	-	8,609	-	-	8,609
Property, plant and equipment	-	712,457	5,763	2,329	720,549
Intangible	-	11,890	534,468	6,079	552,437
Segment reporting – Liabilities					
Loans and borrowings	-	(194,951)	-	(127,661)	(322,612)
Other accounts payable	-	-	(1,926)	(1,898)	(3,824)

(In R$ thousand)

	September 30, 2022				
	BioVertis	BioFlex	Biotech	Others	Total
Revenue from goods sold and services rendered	316	12,111	7,208	-	19,635
Cost of goods sold and services rendered	-	(18,564)	(9,201)	-	(27,765)
Gross (Loss) Profit	316	(6,453)	(1,993)	-	(8,130)
Operating revenue (expenses)					
Administrative expenses	(2,448)	(7,615)	(10,785)	-	(20,848)
Depreciation and amortization	(1,326)	(572)	(12,818)	-	(14,716)
Other revenue (expenses)	(795)	11,655	(109)	-	10,751
	(4,569)	3,468	(23,712)	-	(24,813)
Net (loss) before financial income and expenses	(4,253)	(2,985)	(25,705)	-	(32,943)
Financial income	20	1,522	2,161	-	3,703
Financial expense	(646)	(51,731)	(71)	-	(52,448)
Net financial income (loss)	(626)	(50,209)	2,090	-	(48,745)
Deferred income tax and social contribution	-	-	3,596	-	3,596
Net (loss) for the period – Subtotal	(4,879)	(53,194)	(20,019)	-	(78,092)
Others					(11,222)
Net (loss) for the Period	(4,879)	(64,416)	(20,019)	-	(89,314)
Segment reporting – Assets					
Inventories	-	8,617	-	-	8,617
Property, plant and equipment	2,972	738,607	8,384	2,515	752,478
Intangible assets	-	12,001	593,447	-	605,448
Segment reporting – Liabilities					
Loans and borrowings	(7,462)	(550,007)	-	(12,156)	(569,625)
Other accounts payables	(257)	(16,780)	(2,749)	(117)	(19,903)
Accounts payable for leasing	-	-	-	(1,968)	(1,968)

28. Earnings per share

In compliance with technical pronouncement CPC 41 (IAS 33) - Earnings per share, approved by CVM Resolution 636, the Company presents the following information on earnings per share for the period ended September 30, 2023 and 2022.

Basic: the basic calculation of earnings per share is done by dividing the profit (loss) for the period, attributed to the holders of the Parent Company's common shares, by the weighted average number of common shares available during the period (denominator).

Diluted: the calculation of diluted earnings per share has been based on the following profit or loss attributable to the holders of the Company's common shares and weighted-average number of common shares for the effects of all dilutive potential common shares. The Company does not have any potential common shares.

The table below provides data on earnings and the shares used in calculating basic and diluted earnings per share, which are identical because the Company does not have potential common shares.

	07/01/2023 to 09/30/2023	01/01/2023 to 09/30/2023	07/01/2022 to 09/30/2022	01/01/2022 to 09/30/2022
Loss for the period	(33,980)	(98,373)	(14,197)	(89,054)
Weighted average number of common shares (‘000)	108,133	180,133	108,133	108,133
Basic and diluted loss per share (in Reais)	(0.3142)	(0.9097)	(0.1313)	(0.8236)

29. Insurance

As at September 30, 2023, the Company and its subsidiaries have the following insurance contracts and amounts considered compatible by management with the risks involved:

- PP&E and inventory (approximate coverage – R$ 730,812);
- Civil liability: coverage for material and personal damages caused involuntarily to third parties as a result of the production, facilities and assemblies taking place on the insured site;
- Administrative (approximate coverage - R$ 285,666);
- Administrative head office: fire, lightning strike, explosion, theft, qualified theft, civil liability and others.

Given their nature and specific features, the risk assumptions made and the respective coverage are not covered by a quarterly statements audit, and were not therefore reviewed by our independent auditors.

30. Subsequent events

On October 19, 2023, through a Private Instrument of Payment and Other Covenants, BioFlex transferred 22,848 units of BLFE11 debentures that it held in Treasury, settling the balance payable to Stratus Energy B.V, a related party that was the assignee creditor of the credit arising from the assumption of debt with Banco Itaú. On that date, the updated balance payable was R$39,586 (USD 7,856).

Also on October 19, 2023, BioFlex made a payment on behalf of the related party Cirrus Energy B.V., with its consent, to Stratus Energy B.V. of credit of R$ 19,056 (USD 3,782), all of which have the same shareholders GranBio. This payment involved the transfer of 10,999 units of BFLE11 debentures held in Treasury, under the terms of a Private Payment Instrument and Other Covenants between BioFlex, Cirrus and Stratus.

Bernardo de Almeida Gradin CEO	Guilherme Mottin Refinetti CFO	Dejair Adão Guerro de Oliveira Controller CRC PR-052741/O-4-T-CE