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ORGANISATION EUROPÉENNE POUR LA RECHERCHE NUCLÉAIRE
CERN EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

Action to be taken

Voting procedure

For information	FINANCE COMMITTEE 383 rd Meeting 14 December 2022	—
For information	RESTRICTED COUNCIL 210 th Session 15-16 December 2022	—

Final Budget

of the Organization

for the sixty-ninth financial year

2023

The Final 2023 Budget is expressed in 2023 prices, i.e. it implements the 2% indexation of the regular contributions of the Member States and Associate Member States in line with the “corridor principle” approved by the Council in June 2012 (document CERN/FC/5644-CERN/3023), the cost-variation indices applying to expenses set out in document CERN/FC/6627-CERN/3688, which the Finance Committee is invited to recommend for approval and the Council is invited to approve under separate items of their respective December 2022 agendas, and the scale of contributions (document CERN/FC/6587-CERN/3666), which was approved by the Council in June 2022.

The Finance Committee and the Council are invited to take note of this document.

Geneva, December 2022

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I. EXECUTIVE SUMMARY

Introduction

Following the Council's approval, in September 2022, of the 2023 draft Budget¹, the Management hereby presents the final 2023 Budget in 2023 prices.

The final 2023 Budget reflects the same objectives and targets for the scientific and non-scientific programmes as those set out in the 2023 draft Budget approved in September.

The final 2023 Budget also takes account of probable revenues and expenses for 2022, including the carry-forward, in line with CERN's Financial Rules.

The final 2023 Budget is expressed in 2023 prices and implements the cost-variation indices² submitted to the Council and the Finance Committee for approval under separate agenda items in December

2022. An indexation of 2% is applied to the Member States' and Associate Member States' contributions in line with the "corridor principle" approved by the Council in June 2012³.

Figures 1 and 2 show the variations of revenues and expenses for 2022 and 2023 compared to the 2022 revised Budget and the 2023 draft Budget, respectively, and the (positive) impact on the budget balance. The resulting cumulative budget deficit is shown in Figure 3.

With respect to the 2023 draft Budget, the estimated cumulative budget deficit at the end of 2023 has increased from -280.5 MCHF to -288.0 MCHF. The reasons for this 7.5 MCHF increase are explained below.

¹ [CERN/SPC/1182/Rev.–CERN/FC/6582/Rev.–CERN/3652/Rev.](#)

² [CERN/FC/6627–CERN/3688](#)

³ [CERN/FC/5644–CERN/3023](#)

Variations with respect to the revised 2022 Budget and the 2023 draft Budget

The final 2023 Budget incorporates variations in revenues and expenses compared to the 2023 draft Budget. The variations are shown in Figure 1 and can be summarised as follows:

Changes in revenues

- 2% indexation of contributions, corresponding to an increase of 23.5 MCHF for the Member States and 0.6 MCHF for the Associate Member States;
- Updated information concerning EU-supported projects;
- Re-profiling of the in-kind contributions to the high-field superconducting accelerator magnet project and of the East Area renovation energy subvention;
- Re-profiling of revenues from INFN to reflect the status of work on the DarkSide-20k liquid argon cryostat;
- Recalculation of revenues in respect of internal taxation;
- Changes in revenues for personnel paid from third-party accounts;
- Revised revenues from the SCOAP3 consortium;
- Higher housing fund revenues in 2022 coming from an increased hostel occupancy.

Changes in expenses

- Indexation of expenses, i.e. 2.44% for the personnel budget and 14.99% for the materials budget, subject to the Council's approval of the 2023 cost-variation index;
- Implementation of the crisis levy on the salaries of staff members in 2023, subject to the Council's approval under a separate agenda item;
- Electricity savings from a 2022 run that is two weeks shorter than planned and from a 10% reduction in gas consumption in 2022 and 20% in 2023 as exceptional measures;
- Operational savings recorded in several areas of the Organization;
- Materials-to-personnel transfers, mainly for fellows (GET programme) and technical trainees;
- Changes in expenses for personnel paid from third-party accounts;
- Re-profiling of committed but unused operations budget due to delays and reprofiling of multi-annual operation budgets;
- Updated information concerning EU-supported projects;

- Multi-annual projects (creation, updating, re-profiling and carry-forward):
 - Due to the focus on the restart of accelerator complex, fewer resources than planned were spent in accelerator consolidation and North Area consolidation;
 - Slow-down of site consolidation activities as of 2023;
 - Increase of the HL-LHC budget in 2022 and 2023 to match the actual spending profile;
 - Alignment of the LHC detector upgrade funds to better match the spending profiles of the experiments' upgrade activities;
- Updated spending profile for the Future Circular Collider, RF technologies R&D, high-field superconducting accelerator magnets R&D, AWAKE, Physics beyond Colliders and the Neutrino Platform to reflect the progress achieved on these activities;
- Revision of the WLCG procurement plan and spending profile;
- Updated spending profile for the informatics and computing infrastructure.

Figure 1 (1/2): Variations with respect to the revised 2022 Budget and the 2023 draft Budget ([CERN/SPC/1182/Rev.–CERN/FC/6582/Rev.–CERN/3652/Rev.](#), pp. 47 and 48)

(in MCHF, rounded off)	Variations between 2022 Probable Revenues and Expenses and Revised 2022 Budget (2022 prices)	Variations between Final 2023 Budget (2023 prices) and 2023 Draft Budget (2022 prices)
Variations in REVENUES	-4.3	27.0
Indexation to 2023 prices		24.1
EU contributions	-0.2	0.0
Additional contributions (in-kind, cash)	-4.0	2.0
Personnel paid from third-party accounts	0.0	0.2
Internal taxation update	0.0	0.8
Knowledge transfer	-0.1	0.0
Other revenues	0.0	0.0
Sales and miscellaneous	-0.9	0.0
SCOAP3 revenues	-0.2	0.0
Donations	0.9	0.0
Housing fund	0.2	0.0
Variations in EXPENSES	-51.4	81.8
Indexation to 2023 prices		117.8
<i>Personnel (excluding internal taxation and third-party accounts)</i>		14.6
<i>Materials excluding energy</i>		39.9
<i>Energy</i>		63.3
Crisis Levy		-8.7
Operation	-31.7	7.9
<i>Energy cost changes (consumption)</i>	-17.3	3.5
<i>Operational savings</i>	-3.1	0.0
<i>Budget re-profiling for projects</i>	-0.6	-1.1
<i>Re-profiling of open commitments of unused operation budget</i>	-8.3	4.2
<i>Re-profiling of budget generated by departmental revenues</i>	-2.2	1.1
<i>Other operation variation</i>	-0.2	0.3
Projects (new, updates, carry-forward and re-profiling)	-18.4	-36.7
Reallocation of materials budget to fellows and technical trainees	-0.6	0.4
<i>Materials</i>	-0.9	-5.0
<i>Fellows & technical trainees</i>	0.3	5.3
Expenses corresponding to EU contributions	-0.5	0.0
Personnel paid from third-party accounts (including indexation)	0.0	0.2
Expenses on internal taxation (including indexation)	0.0	0.8
Expenses corresponding to KT revenues	0.0	0.0
Expenses corresponding to SCOAP3 revenues	-0.2	0.0
Variations in BALANCE	47.2	-54.8
IMPACT ON CUMULATIVE BALANCE	47.2	-7.6

Details concerning projects in the
second table

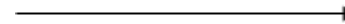


Figure 1 (2/2): Variations with respect to the revised 2022 Budget and the 2023 draft Budget ([CERN/SPC/1182/Rev.–CERN/FC/6582/Rev.–CERN/3652/Rev.](#), pp. 47 and 48)

	Variations between 2022 Probable Expenses and Revised 2022 Budget (2022 prices)	Variations between Final 2023 Budget (2023 prices) and 2023 Draft Budget (2022 prices)
Details concerning Projects (new, updates, carry-forward and re-profiling)	-18.4	-36.7
LHC machine and areas: spares, reliability and consolidation	-2.2	-5.2
<i>LHC machine</i>	2.1	-3.1
<i>SPS complex</i>	-1.3	-2.4
<i>PS complex</i>	-1.8	-0.2
<i>Accelerator support</i>	-1.2	0.5
Experiments and research programme	1.0	-4.5
<i>Scientific computing</i>	0.0	-4.9
<i>Scientific support</i>	1.0	0.4
Infrastructure and services	-3.6	-7.1
<i>Safety, health and environment</i>	-0.9	-1.7
<i>Site facilities</i>	-0.5	-3.3
<i>Technical infrastructure</i>	0.0	-0.5
<i>Informatics and computing infrastructure</i>	-2.2	-1.0
<i>Administration</i>	-0.3	-1.2
<i>External relations</i>	0.3	0.6
HL-LHC upgrade	7.5	4.3
LHC detectors upgrades	-7.4	-14.7
<i>LHC detectors upgrades (Phase 1) and consolidation</i>	-0.7	-1.0
<i>LHC detectors upgrades (Phase 2) and R&D</i>	-6.7	-13.7
Energy frontier studies	-0.3	-1.8
<i>Linear collider</i>	-0.1	-0.3
<i>Future Circular Collider</i>	0.0	-1.8
<i>Muon colliders</i>	-0.3	0.3
Accelerator technologies and R&D	-6.6	-4.3
<i>RF technologies R&D</i>	-1.5	0.7
<i>High-field superconducting accelerator magnets R&D</i>	-4.3	-3.4
<i>Proton-driven plasma wakefield acceleration (AWAKE)</i>	-0.3	-1.5
<i>Other accelerator R&D</i>	-0.5	-0.1
R&D for future detectors	-0.1	-1.7
Scientific diversity projects	-6.6	-1.8
<i>Neutrino Platform</i>	-5.9	-1.0
<i>Physics Beyond Colliders</i>	-0.3	-0.8
<i>Support to external facilities</i>	-0.5	0.0

Comments on Figure 1:

Figure 1 shows the variations of revenues and expenses for 2022 and 2023 compared to the revised 2022 Budget and the 2023 draft Budget. Details of the carry-forward and re-profiling for projects are shown in the second table.

The 2022 probable revenues and expenses, as well as the final 2023 Budget in 2023 prices, are given in Figures 2 and 3.

II. OVERVIEW OF REVENUES AND EXPENSES

1. OVERVIEW OF REVENUES

Figure 2: Overview of revenues

(in MCHF, rounded off)	2022 Probable Revenues (2022 prices)	Final 2023 Budget (2023 prices)	Variation of Final 2023 Budget with respect to 2022 Probable Revenues
REVENUES	1 395.4	1 387.0	-0.60 %
Member States' contributions	1 175.0	1 198.0	1.96 %
Associate Member States' contributions	31.3	32.4	3.55 %
Contributions anticipated from new Associate Member States			
Special contributions to HL-LHC	20.2	16.2	-19.91 %
EU contributions	11.2	8.0	-28.83 %
Additional contributions	6.0	17.4	187.76 %
<i>FCC, HFM, AWAKE, FAIR, Hostlab</i>	5.2	9.8	88.05 %
<i>External contributions to the Neutrino Platform (Swiss, INFN, in-kind)</i>	0.9	7.6	792.98 %
Personnel paid from third-party accounts	19.7	15.8	-19.98 %
Personnel on paid special leave	0.4	0.0	-94.12 %
Internal taxation	35.4	34.7	-2.19 %
Knowledge transfer	4.7	2.0	-56.64 %
Other revenues	91.4	62.6	-31.49 %
<i>Sales and miscellaneous</i>	24.2	26.6	9.67 %
<i>SCOAP3 revenues</i>	8.5	8.8	4.14 %
<i>OpenLab revenues</i>	1.2	0.8	-32.78 %
<i>Donations</i>	42.7	17.0	-60.24 %
<i>Financial revenues</i>	7.9	1.0	-87.33 %
<i>In-kind ¹</i>	1.5	1.4	-4.00 %
<i>Housing fund</i>	4.2	6.0	44.58 %
<i>FIPOI revenues</i>	1.3	1.0	-20.83 %

¹ Theoretical interest on the FIPOI loan.

Comments on Figure 2:

The **Member States' contributions** for 2023 total 1 230.4 MCHF, corresponding to the 2022 total indexed by 2%.

This heading includes all contributions, regardless of any outstanding amounts. In accordance with the Council's Resolution on Greece's contribution ([CERN/3258/RA](#)), Greece will pay its contribution for 2023 plus an annual instalment in the framework of the 15-year plan for the repayment of its arrears for the period 2014–2016. The remaining 15% of the 2017, 2018 and 2019 contributions will be paid in equal instalments over three years at the end of the period set by the Council for the payment of its contributions arrears for 2014–2016 ([CERN/3437/C](#)).

The **Associate Member States' contributions** include the contributions from Cyprus, Estonia and Slovenia as Associate Member States in the pre-stage to Membership, and from Croatia, India, Latvia, Lithuania, Pakistan, Türkiye and Ukraine as Associate Member States.

In June 2022, the Council passed a Resolution ([CERN/FC/6590](#) [CERN/3661](#)) to waive the second instalment of **Ukraine's contribution for 2022**, with the Member States agreeing to increase their respective contributions for 2022 by a total of 0.5 MCHF to cover the Ukrainian part. It is assumed that this measure will not be repeated in 2023.

The values of **special contributions to the HL-LHC** reflect the delivery dates of the components corresponding to the in-kind contributions.

EU contributions include all current agreements. They are offset by expenses and thus have no impact on the budget balance.

Additional contributions are in-kind or cash contributions from collaborating institutes to projects such as AWAKE, the East Area renovation and high-field superconducting accelerator magnets (HFM), or to fund work done by CERN for other institutions or projects (e.g. FAIR). This line also includes experiments' contributions to critical infrastructure and services related to the Phase II detector upgrades. The external contributions to the Neutrino Platform in 2023 include a contribution of 1.1 MCHF from Switzerland to the infrastructure of the LBNF facility and the DUNE experiment, through CERN, and 0.5 MCHF of pledges from other countries and sources. 6.8 MCHF over the years 2022 and 2023 relate to the construction of the DarkSide-20k liquid argon cryostat for LGNS, funded by INFN.

Knowledge transfer revenues are dominated in 2022 by the revenues linked to the Medipix4 collaboration and by the revenues linked to the Collaborative R&D on an Electron Flash Radiotherapy project with CHUV (Centre Hospitalier Universitaire Vaudois). The ongoing KT projects will continue into 2023, including those nearing their term and whose extension will be subject to an amendment.

The **Sales and miscellaneous** heading includes 15 MCHF of revenues (offset by the same amount of expenses), which correspond to materials expenses recharged to the third-party accounts.

External revenues from the **SCOAP3** consortium are expected to increase slightly in 2023. The SCOAP3 revenues are offset by the same amount under expenses.

The revenues and corresponding expenses for **OpenLab** are based on the contracts signed at the time of publication of this document.

Expected **donations** (offset by the same amount of expenses) for the Science Gateway project amount to some 17 MCHF in 2023, in line with the planned construction schedule.

The **housing fund** revenues in 2023 are back to pre-COVID values.

The **financial revenues** in 2022 include 6.89 MCHF of revenues from the sales of the interest rate swap on the UBS credit facility.

Several items (e.g. personnel paid from third-party accounts, personnel on detachment, etc.) have corresponding expenses under various headings in the Infrastructure and Services programme, as shown in Figure 7.

2. OVERVIEW OF EXPENSES

Explanations are provided in Chapter III
"Expenses for the 2023 Financial Year"

Figure 3: Overview of expenses and budget balances

(in MCHF, rounded off)	2022 Probable Expenses (2022 prices)	Final 2023 Budget (2023 prices)	Variation of Final 2023 Budget with respect to 2022 Probable Expenses
EXPENSES	1 260.2	1 453.4	15.33 %
Running of scientific programmes and support	1 008.4	1 126.5	11.71 %
Scientific programmes	458.1	478.6	4.48 %
<i>Accelerator programme</i>	269.3	284.9	5.79 %
<i>Experiments and research programme</i>	188.8	193.7	2.61 %
Infrastructure and services	550.3	647.9	17.74 %
<i>General infrastructure and services (incl. admin, external relations, safety)</i>	309.0	301.8	-2.33 %
<i>Site facilities (incl. infrastructure consolidation, buildings and renovation)</i>	60.1	79.2	31.75 %
<i>Centralised expenses</i>	181.1	266.8	47.33 %
<i>Centralised personnel expenses</i>	39.8	39.1	-1.62 %
<i>Internal taxation</i>	35.4	34.7	-2.19 %
<i>Internal mobility, pers. paid special leave or paid from third-party accounts</i>	20.1	15.9	-21.02 %
<i>Energy, water, helium and nitrogen, insurance and postal charges, miscellaneous</i>	78.6	169.8	116.08 %
<i>Interest, bank and financial expenses, in-kind ¹</i>	7.2	7.3	2.02 %
Scientific projects	251.8	326.9	29.82 %
LHC upgrades	179.6	213.1	18.70 %
<i>LHC injectors upgrade (LIU)</i>	0.1		-100.00 %
<i>HL-LHC upgrade</i>	137.1	150.7	9.93 %
<i>LHC detectors upgrades (Phase 1) and consolidation</i>	1.5	2.4	56.03 %
<i>LHC detectors upgrades (Phase 2) and R&D</i>	40.8	60.0	47.01 %
Future colliders studies	20.7	28.4	37.41 %
<i>Linear collider</i>	4.1	4.6	10.13 %
<i>Future Circular Collider</i>	14.7	21.1	44.05 %
<i>Muon colliders</i>	1.9	2.7	45.84 %
Accelerator technologies and R&D	20.5	31.5	53.75 %
R&D for future detectors	8.3	9.2	10.13 %
Scientific diversity projects	22.7	44.7	96.52 %
<i>Neutrino Platform</i>	12.7	35.5	179.76 %
<i>Physics Beyond Colliders</i>	3.0	4.3	42.93 %
<i>EU-supported computing R&D, support to external facilities</i>	7.0	4.8	-31.42 %
BALANCE			
Annual balance	135.2	-66.3	
Capital repayment allocated to the budget (FIPOI 1 and 2, debt restructuring)	-71.8	11.6	
Recapitalisation Pension Fund	-60.0	-60.0	
Annual balance allocated to budget deficit	3.5	-114.8	
-Cumulative balance (at 31/12 of the year) ²	-173.2	-288.0	

¹ Including theoretical interest on the FIPOI loan (compensated by a corresponding heading in the revenues).

² The cumulative balance of -176.7 MCHF is the accumulated budget deficit at 31/12/2021 as stated in the Financial Statements for 2021 (CERN/FC/6572, page 19).

3. CONTRIBUTIONS OF THE MEMBER STATES AND ASSOCIATE MEMBER STATES FOR 2023

The percentage distribution of the contributions for 2023 was approved by the Council in June 2022 (document CERN/FC/6587-CERN/3666), and the cost-variation index proposals are submitted to the Council for approval in document CERN/FC/6627-CERN/3688 in December 2022.

Figure 4 (1/3): Contributions of the Member States and Associate Member States for the Financial Year 2023

	Country	Currency	Net National Income at factor cost			Exchange rates			Net National Income at factor cost	2023 Full Theoretical Contribution	2023 Due Contribution
			in millions in national currency			national currencies in Swiss francs			in MCHF	in %	in %
			2018	2019	2020	2018	2019	2020	Average 2018 to 2020	in %	in %
Member States	Austria	EUR	264 824	274 030	270 331	1.1547	1.1125	1.0705	300 010	2.21617%	2.21617%
	Belgium	EUR	332 976	346 944	331 766	1.1547	1.1125	1.0705	375 202	2.77161%	2.77161%
	Bulgaria	BGN	79 151	86 677	86 956	0.5906	0.5688	0.5473	47 879	0.35368%	0.35368%
	Czech Republic	CZK	3 510 914	3 726 886	3 806 927	0.0450	0.0433	0.0405	157 940	1.16670%	1.16670%
	Denmark	DKK	1 620 704	1 673 625	1 715 208	0.1549	0.1490	0.1436	248 935	1.83888%	1.83888%
	Finland	EUR	160 595	164 688	166 926	1.1547	1.1125	1.0705	182 448	1.34774%	1.34774%
	France	EUR	1 663 105	1 700 223	1 563 096	1.1547	1.1125	1.0705	1 828 375	13.50620%	13.50620%
	Germany	EUR	2 537 455	2 608 223	2 528 233	1.1547	1.1125	1.0705	2 846 010	21.02346%	21.02346%
	Greece	EUR	120 289	124 871	116 934	1.1547	1.1125	1.0705	134 330	0.99230%	0.99230%
	Hungary	HUF	27 643 468	30 861 989	30 603 924	0.0036	0.0034	0.0030	99 691	0.73641%	0.73641%
	Israel	ILS	989 818	1 049 170	1 065 342	0.2723	0.2788	0.2727	284 162	2.09910%	2.09910%
	Italy	EUR	1 252 856	1 265 873	1 164 277	1.1547	1.1125	1.0705	1 367 092	10.09870%	10.09870%
	Netherlands	EUR	573 992	595 428	583 333	1.1547	1.1125	1.0705	649 880	4.80066%	4.80066%
	Norway	NOK	2 704 435	2 649 653	2 489 942	0.1202	0.1130	0.1000	291 119	2.15050%	2.15050%
	Poland	PLN	1 504 477	1 636 544	1 728 724	0.2710	0.2588	0.2410	415 965	3.07273%	3.07273%
	Portugal	EUR	134 014	139 792	132 348	1.1547	1.1125	1.0705	150 646	1.11282%	1.11282%
	Romania	RON	685 044	762 398	767 646	0.2482	0.2344	0.2213	172 859	1.27691%	1.27691%
	Serbia	RSD	3 651 444	3 903 413	3 988 717	0.0098	0.0094	0.0091	36 272	0.26794%	0.26794%
	Slovakia	EUR	63 362	66 177	64 761	1.1547	1.1125	1.0705	72 037	0.53213%	0.53213%
	Spain	EUR	892 407	926 627	828 910	1.1547	1.1125	1.0705	982 885	7.26056%	7.26056%
Sweden	SEK	3 104 145	3 315 381	3 336 702	0.1126	0.1051	0.1022	346 287	2.55802%	2.55802%	
Switzerland	CHF	514 840	523 285	501 517	1.0000	1.0000	1.0000	513 214	3.79111%	3.79111%	
United Kingdom	GBP	1 560 638	1 640 952	1 648 067	1.3052	1.2683	1.2039	2 034 071	15.02567%	15.02567%	
Total Member States								13 537 307	100.0000%	100.0000%	
Associate Member States in the pre-stage to Membership	Cyprus ¹	EUR	15 557	16 566	15 671	1.1547	1.1125	1.0705	17 723	0.13092%	0.08968%
	Estonia ²	EUR	17 778	19 035	18 620	1.1547	1.1125	1.0705	20 545	0.15177%	0.11383%
	Slovenia ³	EUR	30 505	32 496	33 186	1.1547	1.1125	1.0705	35 633	0.26322%	0.18426%
Total Associate Member States in the pre-stage to Membership								73 902	0.5459%	0.3878%	
Associate Member States	Croatia ⁴	HRK	281 334	296 780	274 271	0.1557	0.1500	0.1420	42 419	0.31335%	0.03133%
	India ⁵	INR	135 946 364	146 515 279	143 142 108	0.0142	0.0139	0.0124	1 914 289	14.14084%	1.41408%
	Latvia ⁶	EUR	18 584	19 636	19 067	1.1547	1.1125	1.0705	21 239	0.15689%	0.01569%
	Lithuania ⁷	EUR	33 399	35 621	37 186	1.1547	1.1125	1.0705	39 334	0.29056%	0.02906%
	Pakistan ⁸	PKR	28 208 420	31 532 263	34 449 737	0.0088	0.0073	0.0062	230 915	1.70577%	0.17058%
	Türkiye ⁹	TRY	2 705 526	3 108 552	3 658 633	0.2077	0.1751	0.1349	533 283	3.93936%	0.39394%
Ukraine ¹⁰	UAH	2 562 669	2 863 348	3 060 670	0.0359	0.0385	0.0348	102 879	0.75996%	0.07600%	
Total Associate Member States								2 884 357	21.3067%	2.1307%	

¹ Cyprus became an Associate Member State in the pre-stage to Membership on 1 April 2016 and will pay 68.5% of its theoretical contribution in 2023, as provided for in Council Resolution [CERN/3034/RA](#).

² Estonia became an Associate Member State in the pre-stage to Membership on 1 February 2021 and will pay 75% of its theoretical contribution in 2023, as provided for in Council Resolution [CERN/3482/C](#).

³ Slovenia became an Associate Member State in the pre-stage to Membership on 4 July 2017. In accordance with the decision by the CERN Council at its 205th Session on 9 December 2021 to extend Slovenia's Associate Member status by two years, Slovenia will pay 70% of its theoretical contribution in 2023.

⁴ Croatia became an Associate Member State on 10 October 2019 and will pay 10% of its theoretical contribution or the statutory minimum contribution of 1 MCHF in 2023, as provided for in Council Resolution [CERN/3403/C](#).

⁵ India became an Associate Member State on 16 January 2017 and will pay 10% of its theoretical contribution or the statutory minimum contribution of 1 MCHF in 2023, as provided for in Council Resolution [CERN/3274/RA](#).

⁶ Latvia became an Associate Member State on 2 August 2021 and will pay 10% of its theoretical contribution or the indexed statutory minimum contribution of 1 MCHF in 2023, as provided for in Council Resolution [CERN/3567/C](#).

⁷ Lithuania became an Associate Member State on 8 January 2018 and will pay 10% of its theoretical contribution or the statutory minimum contribution of 1 MCHF in 2023, as provided for in Council Resolution [CERN/3315/RA/Rev.](#)

⁸ Pakistan became an Associate Member State on 31 July 2015 and will pay 10% of its theoretical contribution or the statutory minimum contribution of 1 MCHF in 2023, as provided for in Council Resolution [CERN/3142/RA](#).

⁹ Türkiye became an Associate Member State on 6 May 2015 and will pay 10% of its theoretical contribution or the statutory minimum contribution of 1 MCHF in 2023, as provided for in Council Resolution [CERN/3106/RA](#).

¹⁰ Ukraine became an Associate Member State on 5 October 2016 and will pay 10% of its theoretical contribution or the statutory minimum contribution of 1 MCHF in 2023, as provided for in Council Resolution [CERN/3082/RA](#).

Figure 4 (2/3): Contributions of the Member States and Associate Member States for the Financial Year 2023

		2023 Annual contribution	2023 Annual contribution	2023 Annual contribution acc. to the corridor principle (**)
		in CHF 2022 prices	in %	in CHF 2023 prices
Member States	Country			
	Austria	26 028 850	2.21617%	26 549 450
	Belgium	32 552 500	2.77161%	33 203 550
	Bulgaria	4 153 950	0.35368%	4 237 050
	Czech Republic	13 702 850	1.16670%	13 976 900
	Denmark	21 597 600	1.83888%	22 029 550
	Finland	15 829 150	1.34774%	16 145 750
	France	158 630 000	13.50620%	161 802 600
	Germany	246 920 000	21.02346%	251 858 400
	Greece	11 654 550	0.99230%	11 887 650
	Hungary	8 649 100	0.73641%	8 822 100
	Israel	24 653 900	2.09910%	25 147 000
	Italy	118 609 000	10.09870%	120 981 200
	Netherlands	56 383 650	4.80066%	57 511 300
	Norway	25 257 550	2.15050%	25 762 700
	Poland	36 089 150	3.07273%	36 810 950
	Portugal	13 070 050	1.11282%	13 331 450
	Romania	14 997 300	1.27691%	15 297 250
	Serbia	3 146 950	0.26794%	3 209 900
	Slovakia	6 249 850	0.53213%	6 374 850
Spain	85 275 100	7.26056%	86 980 600	
Sweden	30 043 900	2.55802%	30 644 800	
Switzerland	44 526 500	3.79111%	45 417 050	
United Kingdom	176 476 150	15.02567%	180 005 650	
Total Member States		1 174 497 600	100.0000%	1 197 987 700
Associate Member States in the pre-stage to Membership	Cyprus	1 053 300		1 074 350
	Estonia	1 336 950		1 363 650
	Slovenia	2 164 150		2 207 400
Total Associate Member States in the pre-stage to Membership		4 554 400		4 645 400
Associate Member States	Croatia	1 000 000		1 000 000
	India	16 608 350		16 940 500
	Latvia	1 024 850		1 045 350
	Lithuania	1 000 000		1 000 000
	Pakistan	2 003 450		2 043 550
	Türkiye	4 626 800		4 719 350
Ukraine	1 000 000		1 000 000	
Total Associate Member States		27 263 450		27 748 750
Grand TOTAL		1 206 315 450		1 230 381 850

(**) CERN/FC/5366-CERN/2864
and CERN/FC/5644-CERN/3023

Figure 4 (3/3): Additional Member States Contributions following the waiver of the second instalment of Ukraine's contribution for 2022

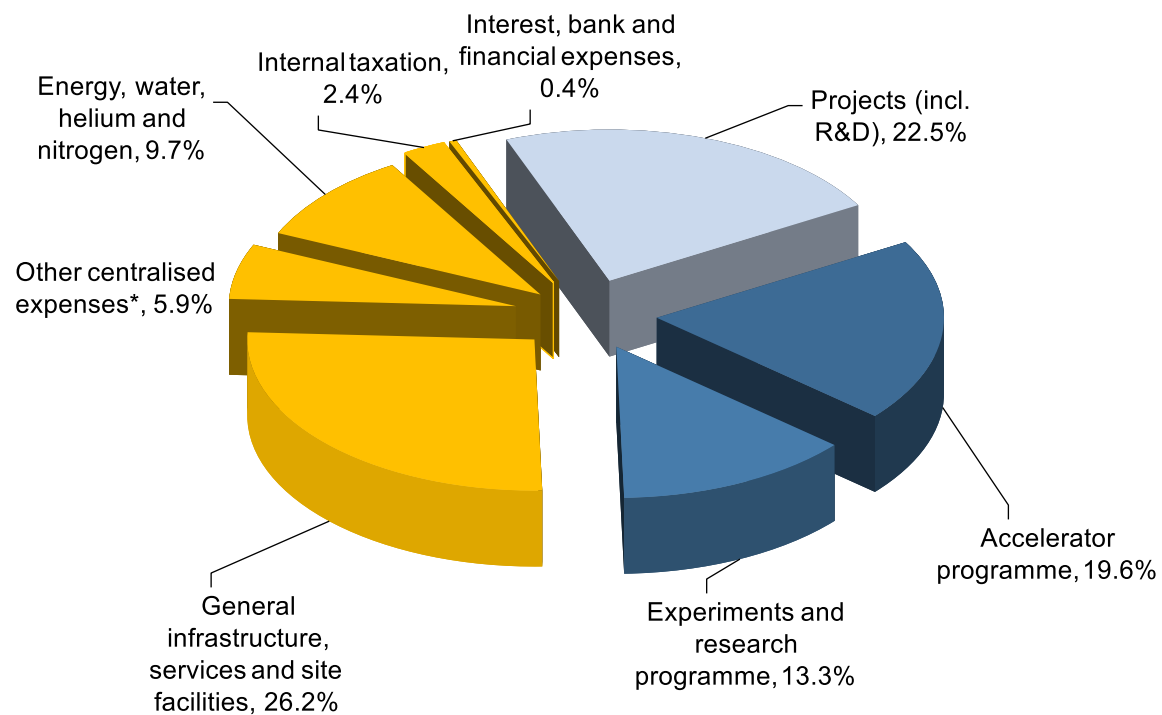
		2022 Additional contribution for Ukraine (CERN/3661) ¹
	Country	in CHF 2022 prices
	Member States	Austria
Belgium		13 900
Bulgaria		1 700
Czech Republic		5 650
Denmark		9 100
Finland		6 700
France		68 900
Germany		104 300
Greece		5 050
Hungary		3 650
Israel		10 000
Italy		51 850
Netherlands		23 750
Norway		11 350
Poland		14 800
Portugal		5 600
Romania		6 150
Serbia		1 300
Slovakia		2 600
Spain	37 200	
Sweden	12 800	
Switzerland	19 700	
United Kingdom	72 900	
Total Member States		500 000

¹The additional contribution to cover the shortfall in Ukraine's 2022 contribution can either be paid in 2022 or together with the first instalment on the 2023 contribution. The additional contributions will not be indexed.

III. EXPENSES FOR THE 2023 FINANCIAL YEAR

1. EXPENSES BY SCIENTIFIC AND NON-SCIENTIFIC PROGRAMMES

Figure 5: Final 2023 Budget (personnel, materials and interest & financial costs)



* Including centralised personnel expenses, internal mobility and personnel on detachment (2.7%), Personnel paid from third-party accounts (1.1%), Insurance, postal charges, miscellaneous (2%), In-kind (theoretical interest on the FIPOI loan) (0.1%)

2. SCIENTIFIC PROGRAMME

Figure 6: Scientific programme

2022 Probable Expenses (2022 prices) (a)				Activity		Final 2023 Budget (2023 prices) (b)				Variation of Final 2023 Budget with respect to 2022 Probable Expenses
FTE Personnel	kCHF			Fact sheet		FTE Personnel	kCHF			
	Personnel	Materials	Total			Personnel	Personnel	Materials	Total	
932.8	164 160	105 180	269 340		Accelerator programme	921.1	164 785	120 145	284 930	5.8 %
364.4	61 810	52 175	113 985	1	LHC machine	349.4	60 080	59 800	119 880	5.2 %
142.5	24 035	17 740	41 775	2	SPS complex	144.2	24 645	20 615	45 260	8.3 %
239.5	42 385	21 730	64 115	3	PS complex	223.2	41 135	23 820	64 955	1.3 %
186.5	35 930	13 535	49 465	4	Accelerator support	204.3	38 925	15 910	54 835	10.9 %
688.7	133 150	55 635	188 785		Experiments and research programme	668.7	131 100	62 605	193 705	2.6%
64.9	12 610	3 380	15 990	5	ATLAS	51.2	10 775	3 080	13 855	-13.4%
60.7	11 675	3 920	15 595	6	CMS	45.9	9 545	3 130	12 675	-18.7%
54.3	11 955	1 730	13 685	7	LHCb	48.0	10 890	1 440	12 330	-9.9%
60.0	12 420	2 155	14 575	8	ALICE	51.1	11 385	1 695	13 080	-10.3%
3.0	895	235	1 130	9	Other LHC experiments	3.0	905	285	1 190	5.3%
40.6	7 615	1 435	9 050	10	Scientific diversity programme	36.2	7 155	1 580	8 735	-3.5%
57.9	9 245	975	10 220	11	Theory	58.0	9 430	1 220	10 650	4.2%
84.3	17 835	11 630	29 465	12	Scientific computing	80.7	17 670	19 935	37 605	27.6%
263.0	48 900	30 175	79 075	13	Scientific support	294.7	53 345	30 240	83 585	5.7%
1 621.5	297 310	160 815	458 125		Grand Total	1 590	295 885	182 750	478 635	4.5%
	21.31%	11.52%	32.83%		% of total revenues		21.33%	13.18%	34.51%	

Comments on Figure 6:

Overall, the expenses for the operation of the scientific programme are stable.

The slight increase of the **Accelerator programme** heading is explained by the indexation of the operational expenses as well as by some variations in projects. On the PS complex side, ELENA and the East Area renovation were completed in 2022. The accelerator and North Area consolidation activities are ramping up under the SPS complex, as well as the electrical network and POPS consolidation.

The decreases of the **Experiments** headings are due to exceptionally high allocations in 2022. The slowdown in the scientific exchanges and training programmes caused by the pandemic resulted in the carry-forward of some budget and activities from previous years to 2022. Additionally, some budget for experiments is kept under the scientific support heading and will be redistributed only in 2023.

The increase of the **Scientific computing** heading is due to the purchase of equipment to meet the computing needs of the LHC experiments during Run 3.

3. INFRASTRUCTURE AND SERVICES

Figure 7: Infrastructure, services and centralised expenses

2022 Probable Expenses (2022 prices) (a)				Activity		Final 2023 Budget (2023 prices) (b)				Variation of Final 2023 Budget with respect to 2022 Probable Expenses
FTE Personnel	kCHF			Fact sheet		FTE Personnel	kCHF			
	Personnel	Materials	Total			Personnel	Personnel	Materials	Total	
1 203.6	284 170	266 100	550 270		Infrastructure and services	1 165.8	281 435	366 445	647 880	17.7%
183.7	29 560	15 785	45 345	14	Safety, health and environment	184.5	29 725	20 795	50 520	11.4%
98.6	17 370	42 765	60 135	15	Site facilities	103.9	18 260	60 970	79 230	31.8%
232.9	42 560	23 290	65 850	16	Technical infrastructure	243.7	44 190	27 910	72 100	9.5%
155.0	27 600	33 170	60 770	17	Informatics and computing infrastructure	142.8	26 910	37 900	64 810	6.6%
269.3	51 235	12 350	63 585	18	Administration	271.4	52 075	13 135	65 210	2.6%
112.6	20 350	53 135	73 485	19	External relations	111.9	20 435	28 760	49 195	-33.1%
151.5	95 495	85 605	181 100	20	Centralised expenses	107.6	89 840	176 975	266 815	47.3%
	39 765		39 765		Centralised personnel expenses		39 120		39 120	-1.6%
	35 425		35 425		Internal taxation		34 650		34 650	-2.2%
					Personnel internal mobility		105		105	
1.2	425		425		Personnel on paid special leave	0.1	25		25	-94.1%
149.5	19 720		19 720		Personnel paid from third-party accounts	106.7	15 780		15 780	-20.0%
		53 350	53 350		Energy and water			137 400	137 400	157.5%
0.8	160	2 800	2 960		Helium	0.8	160	2 740	2 900	-2.0%
		1 000	1 000		Nitrogen			620	620	-38.0%
		21 280	21 280		Insurance, postal charges, miscellaneous			28 895	28 895	35.8%
		5 675	5 675		Interest, bank and financial expenses			5 880	5 880	3.6%
		1 500	1 500		In-kind			1 440	1 440	-4.0%
	20.36%	19.07%	39.43%		% of total revenues		20.29%	26.42%	46.71%	

Comments on Figure 7:

The overall budget allocation to **Infrastructure, services and centralised expenses** increases in 2023, mainly due to increased energy costs, partially compensated by the end of the construction of the Science Gateway (the latter being offset by corresponding revenues).

The increased allocation for **Safety, health and environment** is mainly due to the ramp-up of the radioactive waste management and the environmental protection and sustainability projects.

The increase of the **Site Facilities** heading is explained by the ramp-up of a few projects such as Building 777 (offices & laboratories in Prévessin), the renovation of Building 60 (Main Building) and the perimeter fencing of the Meyrin and Prévessin sites.

Under **Technical infrastructure** the consolidation of the technical galleries is ramping up.

The increased allocation for **Informatics and computing infrastructure** is due to the planned upgrade and consolidation of computing infrastructure and services.

The budget decrease for **External relations** is due to the end of the construction of the Science Gateway project.

The **Centralised expenses** are increasing due to increased energy costs.

4. PROJECTS (CONSTRUCTION, R&D)

Figure 8: Projects

2022 Probable Expenses (2022 prices) (a)				Fact sheet	Activity	Final 2023 Budget (2023 prices) (b)				Variation of Final 2023 Budget with respect to 2022 Probable Expenses
FTE	kCHF					FTE	kCHF			
Personnel	Personnel	Materials	Total			Personnel	Personnel	Materials	Total	
630.5	114 495	137 280	251 775		Scientific projects	639.3	117 430	209 435	326 865	29.8 %
		90	90	21	LHC injectors upgrade					-100.0 %
292.5	51 085	86 020	137 105	22	HL-LHC upgrade	279.8	49 780	100 935	150 715	9.9 %
112.7	24 920	17 440	42 360	23	LHC detectors upgrades	114.8	25 920	36 490	62 410	47.3 %
5.5	985	550	1 535		LHC detectors upgrades (Phase 1) and consolidation	1.2	250	2 145	2 395	56.0 %
107.2	23 935	16 890	40 825		LHC detectors upgrades (Phase 2) and R&D	113.6	25 670	34 345	60 015	47.0 %
74.3	14 040	6 635	20 675	24	Future colliders studies	91.2	16 875	11 535	28 410	37.4 %
13.2	2 380	1 765	4 145		Linear collider	14.5	2 650	1 915	4 565	10.1 %
52.2	9 935	4 730	14 665		Future Circular Collider	66.6	12 325	8 800	21 125	44.1 %
8.9	1 725	140	1 865		Muon colliders	10.1	1 900	820	2 720	45.8 %
54.5	9 340	11 145	20 485	25	Accelerator technologies and R&D	68.2	11 280	20 215	31 495	53.7 %
7.9	1 115	2 065	3 180		RF technologies R&D	9.0	1 330	3 115	4 445	39.8 %
19.2	3 255	4 585	7 840		High-field superconducting accelerator magnets R&D	25.8	4 420	11 510	15 930	103.2 %
8.9	1 445	2 380	3 825		Proton-driven plasma wakefield acceleration (AWAKE)	15.9	2 345	3 010	5 355	40.0 %
4.7	820	625	1 445		CERN Linear Electron Accelerator for Research (CLEAR)	5.9	1 005	590	1 595	10.4 %
13.8	2 705	1 490	4 195		Other accelerator R&D	11.7	2 180	1 990	4 170	-0.6 %
37.5	5 755	2 585	8 340	26	R&D for future detectors	33.1	4 930	4 255	9 185	10.1 %
59.1	9 355	13 365	22 720	27	Scientific diversity projects	52.2	8 645	36 005	44 650	96.5 %
22.5	4 550	8 145	12 695		Neutrino Platform	22.5	4 570	30 945	35 515	179.8 %
13.2	1 965	1 075	3 040		Physics Beyond Colliders	15.7	2 275	2 070	4 345	42.9 %
19.8	2 200	3 165	5 365		EU-supported computing R&D	11.3	1 245	1 205	2 450	-54.3 %
3.5	640	980	1 620		Support to external facilities	2.7	555	1 785	2 340	44.4 %
	8.21%	9.84%	18.04%		% of total revenues		8.47%	15.10%	23.57%	

Comments on Figure 8:

The variations in the budget allocations from 2022 to 2023 reflect the status of the various projects.

Excluding the in-kind contributions, the budget for the **HL-LHC upgrade** is ramping up to its peak in 2024 and 2025. Civil engineering work is terminating in 2022, soon to be replaced by technical infrastructure work, cryogenics contracts and the series production of magnets.

LHC detector upgrades: The budget for the Phase 2 LHC detector upgrades reflects the progress of the activities and is impacted by the increase in raw materials prices. Apart from the major work on detector systems, the significant upgrades of the CMS and ATLAS infrastructure are planned in the context of the host laboratory responsibilities.

Future collider studies: This heading includes the Future Circular Collider, CLIC and Muon Colliders. The budget allocations for the Future Circular Collider and Muon Colliders are ramping up in 2023 reflecting the programme of work of these activities.

Accelerator technologies and R&D were reinforced following the recommendation of the 2020 ESPP update and are ramping up as of 2023. The **RF technologies R&D** heading includes budget for the development of high-efficiency klystrons and the RF infrastructure upgrade. The budget line **High-field superconducting accelerator magnets R&D** covers R&D activities on superconducting materials

(Nb₃Sn and high-temperature superconductors), magnet technology, models and prototypes as well as the infrastructure required to perform material and magnet testing. The budget allocation is ramping up in line with the deliverables from the collaborations.

The **AWAKE** budget is increasing for AWAKE's second run and the preparatory work for the dismantling of the CNGS facility, secured in the 2022 MTP.

R&D for future detectors: CERN launched this strategic initiative on detector technologies in 2019, and the budget is ramping up with a view to future detectors for collider and non-collider experiments.

Scientific diversity projects: At the Neutrino Platform, the procurement of the components for the first cryostat for the DUNE experiment will ramp up in 2023. The construction of the DarkSide-20 liquid argon cryostat for LNGS is also planned for 2023.

The budget increase for **Physics Beyond Colliders** reflects the implementation of the 2020 ESPP update.

The **Scientific diversity projects** heading includes activities undertaken for other research institutes and projects, such as FAIR and ITER, as well as projected expenses for EU projects that are offset by corresponding revenues. Concerning the latter, the decrease from 2022 to 2023 is mainly explained by the end of the EU8 ARCHIVER project.

5. MULTI-ANNUAL PROJECTS

Figure 9 (1/3): Expenses – Details of projects included in the activity headings

This table details the amounts of non-recurrent expenses for 2022 and 2023, broken down by programme and project.

(in kCHF, rounded off)

2022 Probable Expenses (2022 prices)			Programme	Project	Final 2023 Budget (2023 prices)		
Personnel	Materials	Total			Personnel	Materials	Total
26 375	38 960	65 335		Sub-total Accelerator programme	25 840	46 475	72 315
12 070	22 430	34 500		LHC machine	10 500	23 760	34 260
350	90	440		Collimation system enhancements	380	70	450
820	880	1 700		Electrical network 2025	825	4 025	4 850
425	5	430		Experimental areas consolidation	480		480
				Gas and ODH detection consolidation	225	445	670
	275	275		IT Long shutdown work		435	435
4 885	5 270	10 155		LHC consolidation	4 865	6 390	11 255
	265	265		LHC diodes consolidation		110	110
215	120	335		LHC magnet repair	230	305	535
575	1 310	1 885		LHC spares	515	2 090	2 605
605	220	825		POPS repair, spare and consolidation	710	1 335	2 045
2 250	2 225	4 475		Radiation to electronics (R2E)	400	895	1 295
625	11 365	11 990		Spares and consolidation in the framework of HL-LHC	535	7 065	7 600
1 320	405	1 725		Support to LHC experiments	1 335	595	1 930
13 455	15 535	28 990	Accelerator programme	PS and SPS complex	14 515	20 705	35 220
7 145	6 885	14 030	Included in Figure 6	Accelerator consolidation	7 155	8 465	15 620
860	770	1 630		AD consolidation	855	1 405	2 260
25	525	550		East area renovation		310	310
	165	165		ELENA			
125	455	580		ISOLDE nano laboratory		335	335
830	1 635	2 465		Linac4 RFQ spare	750	1 890	2 640
3 985	3 730	7 715		North area consolidation	4 985	6 605	11 590
	185	185		Oxygen run preparation	135	215	350
220	720	940		PS and SPS spares	380	445	825
265	465	730		SPS electrical substations consolidation	255	400	655
				Other accelerator projects		635	635
435	705	1 140		Accelerator support	550	1 600	2 150
135	40	175		Laser Treatment of Surfaces	220	275	495
	125	125		SM18 infrastructure upgrade		245	245
85	500	585		TE infrastructure consolidation	90	575	665
215	40	255		Other accelerator support projects	240	505	745
285	245	530		EU projects	165	265	430
130	45	175		KT projects	110	145	255
8 565	21 965	30 530		Sub-total Experiments and research programme	7 840	26 705	34 545
	5	5		Other LHC experiments			
	5	5		LHC host lab - FASER			
765	65	830		Scientific diversity programme	780	65	845
765	65	830		AEgIS	780	65	845
5 420	8 140	13 560	Experiments and research programme	LHC Computing Grid	5 400	15 825	21 225
	11 380	11 380	Included in Figure 6	Scientific support		9 910	9 910
	50	50		Bldg 513 exhibition for WWW invention		95	95
	1 180	1 180		Computer security hardening		105	105
	100	100		EP Safety and consolidation		770	770
				HVAC system building 42			
				PCB Workshop machine		140	140
	10 050	10 050		SCOAP3		8 800	8 800
1 900	1 440	3 340		EU projects	1 510	905	2 415
480	935	1 415		KT projects	150		150

Figure 9 (2/3): Expenses – Details of projects included in the activity headings

(in kCHF, rounded off)

2022 Probable Expenses (2022 prices)			Programme	Project	Final 2023 Budget (2023 prices)		
Personnel	Materials	Total			Personnel	Materials	Total
13 740	96 245	109 985		Sub-total Infrastructure and services	14 675	97 130	111 805
5 465	6 590	12 055		Safety, health and environment	6 145	10 260	16 405
730	1 325	2 055		CEPS	1 085	3 020	4 105
	15	15		Electrical safety	600	255	855
	205	815		Emergency			
610	205	815		Fire safety projects	730	300	1 030
1 885	3 230	5 115		Radioactive waste management	1 665	4 495	6 160
1 525	540	2 065		Ramses II light	1 455	785	2 240
715	1 275	1 990		Other safety projects	610	1 405	2 015
2 715	18 245	20 960		Site facilities	3 545	32 675	36 220
	310	310		Building 107 (surface treatment)			
130	20	150		Building 140 (office building in Meyrin for EP department and users)	325	350	675
	40	40		Building 38 (hotel renovation)			
255	185	440		Building 777 (offices & laboratories in Prévessin)	260	2 695	2 955
	50	50		Building 937 (offices & laboratories in Prévessin)			
	470	470		Consolidation works for the hotels		540	540
	200	200		FCC / ATLAS modular building		1 025	1 025
	615	615		Library reading room		1 035	1 035
15	300	315		Renovation of Building 60 (Main Building)	85	5 390	5 475
	830	830		Restaurant consolidation		1 220	1 220
	100	100		Science Gateway interfaces		645	645
	655	655		Security improvement measures		4 675	4 675
2 315	14 470	16 785		Surface and technical infrastructure consolidation (roofs, facades, heating, etc.)	2 875	15 100	17 975
945	2 880	3 825		Technical infrastructure	1 165	5 315	6 480
245	95	340		CAD upgrade	180	200	380
70		70		IMPACT development	215		215
60	690	750		Investment in new mechanical technologies	20	945	965
	510	510	Infrastructure and services	Replacement of water-cooled cables		190	190
570	1 535	2 105	Included in Figure 7	Smarteam replacement	185	490	675
	50	50		Technical galleries consolidation	565	3 350	3 915
1 415	22 340	23 755		Other infrastructure projects		140	140
	270	270		Informatics and computing infrastructure	1 070	26 445	27 515
	560	560		CERN firewall replacement and upgrade		300	300
				Computing network consolidation		1 480	1 480
	1 185	1 435		IT HPC clusters		575	575
	515	515		Microsoft transition	130	1 630	1 760
870	625	1 495		NXCALS hosting consolidation and upgrades		195	195
	18 420	18 420		Openlab	710	620	1 330
225	765	990		Prévessin computing centre		18 405	18 405
				Quantum technology initiative	230	1 040	1 270
				TETRA infrastructure consolidation and upgrade		2 200	2 200
70		70		Other informatics and computing infrastructure projects			
	310	310		Administration	125	1 740	1 865
	190	190		Business computing projects	125		125
	95	95		FAP projects		1 645	1 645
	25	25		HR projects			
770	43 230	44 000		Risk management		95	95
	350	350		External relations	415	18 575	18 990
	75	75		Alumni		40	40
	95	95		CERN studio upgrade		125	125
30	345	375		Consolidation and renovation of services and Infrastructure		90	90
				High School Students Internship Programme			
				IdeaSquare building	60	425	485
				Opening of Science Gateway event		435	435
655	41 705	42 360		Science Gateway	275	16 960	17 235
	300	300		SM18 visit point reinstatement		350	350
85	360	445		Other outreach projects	80	150	230
1 910	1 525	3 435		EU projects	2 025	1 460	3 485
520	1 125	1 645		KT projects	185	660	845

Figure 9 (3/3): Expenses – Details of projects included in the activity headings

(in kCHF, rounded off)

2022 Probable Expenses (2022 prices)			Programme	Project	Final 2023 Budget (2023 prices)		
Personnel	Materials	Total			Personnel	Materials	Total
109 160	134 815	243 975		Sub-total Scientific projects	112 290	205 965	318 255
	90	90		LHC Injectors Upgrade			
51 085	85 965	137 050		LHC luminosity upgrade project (HL-LHC)	49 780	100 935	150 715
24 920	17 440	42 360		LHC detectors upgrades	25 920	36 490	62 410
285	150	435		ALICE ITS 3	315	360	675
22 875	6 920	29 795		LHC detectors upgrade	23 780	15 115	38 895
1 505	8 765	10 270		LHC host lab	1 565	19 050	20 615
255	225	480		LHCb phase II	260	560	820
	1 275	1 275		R&D for HL-LHC detectors		1 395	1 395
	105	105		SXA5 CMS building		10	10
14 040	6 635	20 675		Energy frontier studies	16 875	11 535	28 410
2 380	1 765	4 145		CLIC	2 650	1 915	4 565
9 935	4 730	14 665		Future Circular Collider study	12 325	8 800	21 125
1 725	140	1 865		Muon colliders	1 900	820	2 720
5 755	8 930	14 685	Scientific projects	Accelerator technologies and R&D	8 145	17 630	25 775
365	95	460	Included in Figure 8	High efficiency klystron R&D	400	1 005	1 405
3 255	4 395	7 650		High-field superconducting accelerator magnets (HFM) R&D	4 535	11 395	15 930
	40	40		HTS undulator		70	70
1 360	2 320	3 680		Proton plasma wakefield acceleration (AWAKE)	2 250	2 950	5 200
25	110	135		Shape memory alloy rings as UHV connectors	30	100	130
	15	15		SM18 extension for superconducting RF			
730	1 355	2 085		Superconducting RF R&D	930	1 450	2 380
20	600	620		Superconducting RF infrastructure upgrade		660	660
5 315	2 325	7 640		R&D for future detectors	4 580	4 030	8 610
4 665	9 595	14 260		Scientific diversity projects	5 340	33 795	39 135
2 405	7 930	10 335		CERN Neutrino Platform	2 765	30 635	33 400
1 965	1 075	3 040		Physics Beyond Colliders study	2 275	2 070	4 345
295	590	885		Upgrade of Building 180 test facility (FAIR)	300	1 090	1 390
2 455	3 480	5 935		EU projects	1 275	1 505	2 780
925	355	1 280		KT projects	375	45	420
157 840	291 985	449 825		Grand Total	160 645	376 275	536 920

IV. SUMMARY OF EXPENSES BY NATURE

1. MATERIALS EXPENSES BY NATURE (INCLUDING INTEREST AND FINANCIAL COSTS)

Figure 10: Materials expenses by nature (including interest and financial costs)

(in kCHF, rounded off)

Nature	2022 Probable Expenses	Final 2023 Budget	Variation of Final 2023 Budget with respect to 2022 Probable Expenses
	(2022 prices)	(2023 prices)	(b)-(a)/(a)
	(a)	(b)	(b)-(a)/(a)
Materials expenses	557 165	751 475	34.9%
Goods, consumables and supplies	307 915	402 160	30.6%
Electricity, heating gas and water	53 350	137 400	157.5%
Helium and nitrogen	3 800	3 360	-11.6%
Industrial services	99 045	108 850	9.9%
Service contracts	93 430	102 665	9.9%
Temporary labour	5 615	6 185	10.2%
Associated members of the personnel	39 885	40 325	1.1%
Other overheads	53 170	59 380	11.7%
Consultancy	10 820	15 820	46.2%
Contributions to collaborations	4 500	4 850	7.8%
Miscellaneous ¹	37 850	38 710	2.3%
Interest and financial costs	7 030	7 155	1.8%
Interest on bank loans	4 530	4 715	4.1%
In-kind (FIPOI interest 0%) ²	1 500	1 440	-4.0%
Other financial expenses	1 000	1 000	
TOTAL MATERIALS	564 195	758 630	34.5%

¹ Including insurance, postal and telephone charges, duty and hospitality, library, training, shipping, bank charges, depreciation of current assets.

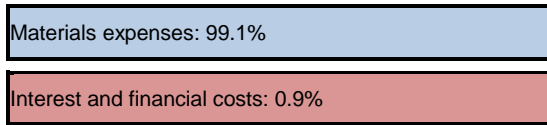
² Theoretical interest at market rate for FIPOI 1, 2 and 3 loans of 0%. This heading is offset by the corresponding revenue line "Other revenues / In-kind".

Comments on Figure 10:

As a mark of social responsibility, the 2022 run was shortened by two weeks and the operation of the accelerator complex in 2023 is reduced by 20%. The higher expenses in 2023 are due to the increase in electricity prices (see cost-variation index for 2023, CERN/FC/6627-CERN/3688)

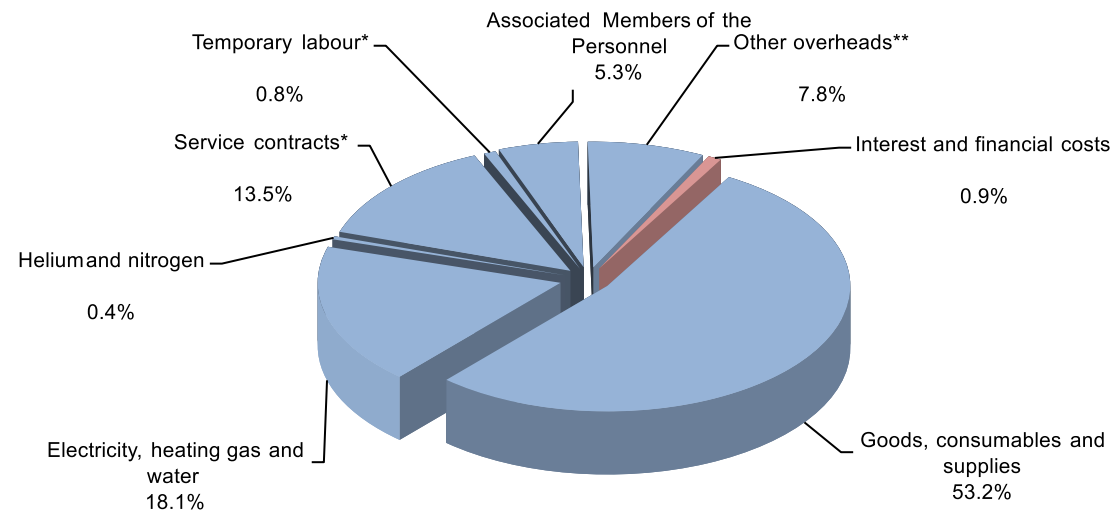
The increase of the 'Consultancy' heading is explained by the ramp-up of activities on the high-field superconducting accelerator magnets R&D under various collaboration agreements recorded under this heading.

Figure 11: Breakdown of materials expenses by nature



* Total for industrial services: 13.5% + 0.8% = 14.3%.

** Including insurance and postal charges, consultancy, CERN contributions handling and transport, bank charges, depreciation of current assets.



2. PERSONNEL EXPENSES BY NATURE

Figure 12: Personnel expenses by nature

(in kCHF, rounded off)

Nature	2022 Probable Expenses	Final 2023 Budget	Variation of Final 2023 Budget with respect to 2022 Probable Expenses
	(2022 prices)	(2023 prices)	
	(a)	(b)	(b)/(a)
Staff members¹	532 130	536 945	0.9%
Basic salaries (incl Saved Leave)	345 927	347 065	0.3%
Basic salaries	347 985	357 915	
Crisis levy		-8 840	
Performance payment (non-pensionable)	4 547	4 425	
Contribution to Saved Leave schemes	-6 605	-6 435	
Allowances	67 303	67 580	0.4%
Non-resident allowances / International indemnities	19 120	19 335	
Family and child allowances	26 235	26 335	
Special allowances	2 940	3 055	
Overtime	2 430	2 500	
Various allowances	16 578	16 355	
Social contributions	118 900	122 300	2.9%
Pension Fund	91 235	93 845	
Health Insurance	27 665	28 455	
Fellows²	88 655	84 035	-5.2%
Centralised personnel budget	75 190	73 770	-1.9%
Centralised personnel expenses	39 765	39 120	-1.6%
Installation, recruitment and termination of contracts	9 855	9 650	
<i>Installation and removal costs</i>	2 000	1 800	
<i>Termination allowances</i>	7 855	7 850	
Additional periods of membership in the Pension Fund for shift work	550		
Contribution to Health Insurance for pensioners incl. Long-term care	29 360	29 470	0.4%
<i>Contribution to Health Insurance for pensioners</i>	26 600	26 700	
<i>Contribution to Long Term Care for pensioners</i>	2 760	2 770	
Internal taxation	35 425	34 650	-2.2%
TOTAL PERSONNEL	695 975	694 750	-0.2%

¹ Including staff paid from third-party accounts (11.6 MCHF in 2022 and 11.2 MCHF in 2023).

² Including fellows paid from third-party accounts (8.2 MCHF in 2022 and 4.5 MCHF in 2023).

Comments on Figure 12:

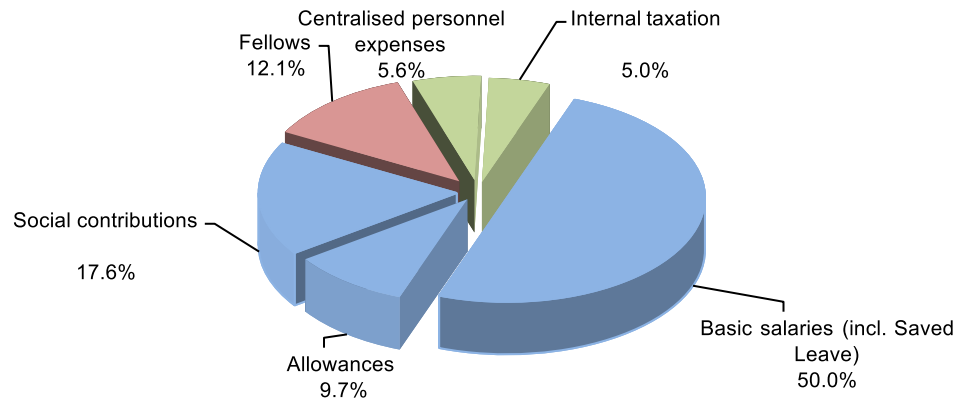
The total CERN personnel budget for 2023 amounts to 694.8 MCHF. This includes 15.7 MCHF for staff and fellows paid from third-party accounts.

The 2023 budget for staff members is 536.9 MCHF. This amount takes into account the cost-variation index and the crisis levy of 2.5% applied to basic salaries.

Additional fellowship funding will be made available over the course of 2023 from materials-to-personnel budget transfers in the context of the GET fellows programme, Technical Trainees programme, and the new Graduate programme.

Internal taxation is expected to amount to 34.7 MCHF and is offset by an equivalent line in the revenues.

Figure 13: Breakdown of personnel expenses by nature



Staff members: 77.3%
Fellows: 12.1%
Centralised personnel budget: 10.6%

3. ENERGY AND WATER

Figure 14: Expenses – Energy and water

(in MCHF, rounded off)

Nature	2022 Probable Expenses (2022 prices)	Final 2023 Budget (2023 prices)	Variation of Final 2023 Budget with respect to 2022 Probable Expenses
	(a)	(b)	(b)-(a)/(a)
Energy and water (baseload)	11.57	24.83	114.6%
Electricity	4.22	12.97	207.5%
Heating oil and gas	4.15	8.75	110.8%
Water and waste water	3.20	3.11	-3.0%
Energy for basic programmes	41.78	112.57	169.4%
Experimental areas ¹	10.46	30.19	188.7%
CERN Data Center	1.41	4.03	185.4%
Accelerators	12.94	31.45	143.0%
<i>AD</i>	<i>0.52</i>	<i>1.16</i>	<i>122.6%</i>
<i>PS</i>	<i>2.16</i>	<i>5.60</i>	<i>159.4%</i>
<i>SPS</i>	<i>10.27</i>	<i>24.69</i>	<i>140.5%</i>
LHC	16.97	46.91	176.4%
TOTAL ENERGY	53.35	137.40	157.5%

¹ This covers most of the experiments: LHC experiments, including test beams into East, West and North Areas, plus PS and SPS fixed target experiments and ISOLDE.

V. FINANCIAL POSITION OF THE ORGANIZATION

Statement of cash flow

Figure 15: Estimated statement of cash flow for financial years 2022 and 2023

(in MCHF, rounded off, estimated as at 23/11/2022)

	2022 (2022 prices)	2023 (2023 prices)
(A) START OF THE YEAR		
Liquid assets brought forward	289	* 263
(1) CASH INFLOW	1 372	1 452
Contributions	1 196	1 230
Teams and collaborations	110	122
EU, KT, UBS credit facility, other revenues	66	100
(2) CASH OUTFLOW	1 398	1 557
Payments	1 150	1 349
Teams and collaborations	100	110
Interest, bank and financial expenses	6	6
Capital repayment Fortis, FIPOI and UBS credit facility	82	31
Recapitalisation of the Pension Fund	60	60
(3) VARIATION OF CASH POSITION	-26	-104
(B) END OF THE YEAR		
Estimated liquid assets	263	159

* For 2023, it is an estimated amount.

Comments on Figure 15:

The statement of cash flow is an estimate based on the assumption that the Member States' contributions will be paid by the expected

instalment dates. Under this assumption, no short-term loans will be required in 2023.

Short-term bank loans and overdrafts

No short-term bank loans or overdrafts are expected in 2023, provided that the Member States' contributions are settled on the scheduled instalment dates and by the end of the year at the latest.

Loan from BNP Paribas Fortis bank

The outstanding amount due to BNP Paribas Fortis bank loan will be 110.9 MCHF at the end of 2022 and will reduce to 80.6 MCHF by the end of 2023. The loan is supposed to be reimbursed by the end of June 2026. Nevertheless, in view of the changing financial conditions, the Management has negotiated an anticipated repayment of the full loan for March 2023 with the aim to benefit from the currently attractive market rates.

UBS credit facility

In the framework of the restructuring of the BNP Paribas Fortis loan a new credit facility was signed with UBS in 2020. The first two fixed advances were drawn down at the end of 2020 and in June 2021. These were fully repaid at the beginning of 2022 due to the positive cash balance, and in order to protect the Organization from financial losses in relation to negative interest rates. In addition, no further advances are needed in 2022.

Loan from FIPOI

The FIPOI loans are interest-free. The capital repayment for the existing three FIPOI loans amounts to 1.1 MCHF per year; the financial benefit is accounted for as in-kind.