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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** 379th Meeting **8 December 2021**	—
For information	**RESTRICTED COUNCIL** 205th Session **9-10 December 2021**	—

Final Budget

of the Organization

for the sixty-eighth financial year

2022

The Final 2022 Budget is expressed in 2022 prices, i.e. it implements the 0.48% 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/6530-CERN/3605, which the Finance Committee is invited to recommend for approval and the Council is invited to approve under separate items of their respective December 2021 agendas, and the scale of contributions (document CERN/FC/6502-CERN/3576), which was approved by the Council in June 2021.

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

Geneva, December 2021

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I. EXECUTIVE SUMMARY

Introduction

Following the Council's approval in June 2021 of the Medium-Term Plan (MTP) for the period 2022–2026, including an outlook until 2031, and of the 2022 Draft Budget[1], the Management hereby presents the Final 2022 Budget in 2022 prices.

The Final 2022 Budget reflects the same objectives and targets for the scientific and non-scientific programmes as those of the 2022 Draft Budget.

The Final 2022 Budget also takes account of the 2021 Probable Revenues and Expenses, including the carry-forward, in line with CERN's Financial Rules.

The Final 2022 Budget is expressed in 2022 prices and implements the cost-variation indices[2] submitted to the Council and the Finance Committee for approval under separate agenda items in December 2021. An indexation of 0.48% is applied to the Member States' and Associate Member States' contributions in line with the "corridor principle" approved by the Council in June 2012[3].

Figures 1 and 2 show the variations of Revenues and Expenses for 2021 and 2022 compared to the 2021 Revised Budget and the 2022 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 2022 Draft Budget, the estimated cumulative budget deficit at the end of 2022 has decreased from – 346.8 MCHF to – 279.1 MCHF. The reasons for this 67.7 MCHF reduction are explained below.

[1] CERN/SPC/1158/Rev.-CERN/FC/6491/Rev.-CERN/3575
[2] CERN/FC/6530–CERN/3605
[3] CERN/FC/5644–CERN/3023

Variations with respect to the Revised 2021 Budget and the 2022 Draft Budget

The Final 2022 Budget incorporates variations in revenues and expenses compared to the 2022 Draft Budget. The variations are shown in Figure 1 and can be summarised as follows:

Changes in revenues

- 0.48% indexation of contributions, corresponding to an increase of 5.6 MCHF for the Member States and 0.1 MCHF for the Associate Member States;
- Earlier Latvia's accession to Associate Member State status;
- Updated information concerning EU-supported projects;
- Re-profiling of the HL-LHC in-kind contributions following the signature of the agreement with the US; reprofiling and new in-kind contributions to the high-field superconducting accelerator magnet project;
- Recalculation of revenues in respect of internal taxation;
- Changes in revenues for personnel paid from third-party accounts;
- Changes in the "Sales and miscellaneous" heading resulting from the adjustment of recharges to third-party accounts, partially offset by the additional revenues for externally funded activities and a new FIPOI contribution for the perimeter fencing of the Meyrin site;
- Revised revenues from the SCOAP3 consortium;
- Re-profiling of the revenues for the Science Gateway project to reflect the spending profile;
- Lower housing fund revenues due to the impact of COVID-19 on hostel occupancy.

Changes in expenses

- Indexation of expenses, i.e. 0.26% for the personnel budget and 0.67% for the materials budget, subject to the Council's approval of the 2022 cost-variation index;
- Updated information concerning EU-supported projects;
- Materials-to-personnel transfers, mainly for fellows (GET programme) and technical trainees;
- Changes in expenses for personnel paid from third-party accounts;
- Operational savings resulting mainly from lower consumption of energy and helium;
- Re-profiling of committed but unused operation budget due to delays caused by various sources (COVID, CERN re-organisation) and re-profiling of multi-annual operation budgets;
- Multi-annual projects (creation, updating, re-profiling and carry-forward):
    - Due to the focus on the restart of accelerator complex, less resources than planned were spent in accelerator consolidation and spares;

- Enhancement of site consolidation activities;
- Re-profiling of the HL-LHC in-kind contributions following the signature of the agreement with the US;
- 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 and the Neutrino platform to take account of the progress of the activities;
- Revision of the WLCG procurement plan and spending profile;
- Updated spending profile for the Prévessin Computing Centre and other computing projects, e.g. the CERN firewall replacement and upgrade and the computing network consolidation;
- Re-profiling of the expenses for the Science Gateway project: funds for the construction are committed and will be paid over the period 2022–2023; all of the contracts for education and outreach content either have been or are being signed. Most of the expenses will occur in 2022.

Changes in capital flows

- Decrease in the usage of the UBS credit facility allowing to postpone the repayment of the BNP Paribas Fortis loan, which results from the positive cash position of the Organization.

Figure 1 (1/2): Variations with respect to the Revised 2021 Budget and 2022 Draft Budget (CERN/SPC/1158/Rev.-CERN/FC/6491/Rev.-CERN/3575, pp. 39 and 40)

(in MCHF, rounded off)	Variations between 2021 Probable Revenues and Expenses and Revised 2021 Budget (2021 prices)	Variations between Final 2022 Budget (2022 prices) and 2022 Draft Budget (2021 prices)
Variations in REVENUES	**-13.4**	**34.9**
Indexation to 2022 prices		5.7
New Associate Member States	0.3	0.0
EU contributions	-1.5	1.0
Additional contributions (in-kind, cash)	8.3	13.1
Personnel paid from third-party accounts	0.8	4.0
Personnel on detachment	0.0	-0.3
Internal taxation update	0.8	1.1
Knowledge transfer	1.0	0.4
Other revenues	-23.0	10.1
Sales and miscellaneous	-1.0	-1.1
SCOAP3 revenues	-0.8	-0.8
OpenLab revenues	0.2	0.4
Donations	-20.5	13.5
Housing fund	-0.9	-2.0
Variations in EXPENSES	**-83.9**	**-5.9**
Indexation to 2022 prices		**6.4**
Personnel (excluding internal taxation)		*1.5*
Materials excluding energy		*-20.4*
Energy		*25.3*
Operation	**-28.1**	**5.1**
Operational savings	-13.7	
Budget re-profiling for projects	-1.8	-0.2
Re-profiling of open commitments of unused operation budget	*-8.2*	*6.8*
Re-profiling of budget generated by departmental revenues	*-4.0*	*-1.5*
Other operation variation	*-0.3*	*0.1*
Projects (new, updates, carry-forward and re-profiling)	**-55.6**	**-23.4**
Reallocation of materials budget to fellows and technical trainees	**-0.7**	**0.4**
Materials	*-3.0*	*-8.9*
Fellows & technical trainees	*2.3*	*9.3*
Expenses corresponding to EU contributions	**-1.5**	**1.0**
Personnel paid from third-party accounts (including indexation)	**0.8**	**4.0**
Personnel on detachment	**0.0**	**-0.3**
Expenses on internal taxation (including indexation)	**0.8**	**1.1**
Expenses corresponding to KT revenues	**0.9**	**0.5**
Expenses corresponding to SCOAP3 revenues	**-0.8**	**-0.8**
Expenses corresponding to OpenLab revenues	**0.2**	**0.4**
Interest on bank loans		**-0.3**
Variations in CAPITAL FLOWS	**14.3**	**29.4**
Resignation from UBS tranches	14.3	29.4
Variations in BALANCE	**56.2**	**11.5**
IMPACT ON CUMULATIVE BALANCE	**56.2**	**67.7**

Details concerning projects in the second table →

Figure 1 (2/2): Variations with respect to the Revised 2021 Budget and 2022 Draft Budget (CERN/SPC/1158/Rev.-CERN/FC/6491/Rev.-CERN/3575), pp. 39 and 40)

	Variations between 2021 Probable Expenses and Revised 2021 Budget (2021 prices)	Variations between Final 2022 Budget (2022 prices) and 2022 Draft Budget (2021 prices)
Details concerning Projects (new, updates, carry-forward and re-profiling)	**-55.6**	**-23.4**
LHC machine and areas: spares, reliability and consolidation	**-19.2**	**-2.3**
LHC machine	*-10.2*	*-5.8*
SPS complex	*-3.3*	*-0.4*
PS complex	*-4.9*	*4.1*
Accelerator support	*-0.8*	*-0.2*
Experiments and research programme	**-5.5**	**-3.7**
Theory	*0.0*	*0.1*
Scientific computing	*-6.9*	*-3.7*
Scientific support	*1.3*	*-0.1*
Infrastructure and services	**-26.3**	**7.1**
Safety, health and environment	*-0.7*	*0.2*
Site facilities	*2.8*	*-1.5*
Technical infrastructure	*-0.5*	*-0.9*
Informatics and computing infrastructure	*-7.0*	*-5.7*
Administration	*0.3*	*0.5*
External relations	*-21.0*	*14.5*
LHC injectors upgrade	**-0.3**	**0.0**
HL-LHC upgrade	**12.0**	**9.4**
LHC detectors upgrades	**-4.7**	**-16.6**
LHC detectors upgrades (Phase I) and consolidation	*-0.4*	*-0.3*
LHC detectors upgrades (Phase II) and R&D	*-4.3*	*-16.4*
Energy frontier studies	**-2.1**	**-4.9**
Linear collider	*-0.7*	*0.0*
Future Circular Collider	*-1.1*	*-4.5*
Muon colliders	*-0.3*	*-0.4*
Accelerator technologies and R&D	**-5.8**	**-3.2**
RF technologies R&D	*-1.0*	*1.3*
High field superconducting accelerator magnets R&D	*-4.5*	*-4.3*
Proton-driven plasma wakefield acceleration (AWAKE)	*-0.2*	*-0.3*
Other accelerator R&D	*-0.1*	*0.1*
R&D for future detectors	**0.0**	**-0.1**
Scientific diversity projects	**-3.7**	**-9.1**
Neutrino Platform	*-1.9*	*-9.5*
Physics Beyond Colliders	*-0.6*	*-0.3*
EU supported computing R&D	*-0.5*	*0.6*
Support to external facilities	*-0.6*	*0.0*

Comments on Figure 1:

Figure 1 shows the variations of Revenues and Expenses for 2021 and 2022 compared to the Revised 2021 Budget and the 2022 Draft Budget. Details of the carry-forward and re-profiling for projects are shown in the second table.

The 2021 Probable Revenues and Expenses, as well as the Final 2022 Budget in 2022 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, 2021 prices, rounded off)	2021 Probable Expenses (2021 prices)	Final 2022 Budget (2022 prices)	Variation of Final 2022 Budget with respect to 2021 Probable Expenses
REVENUES	**1 386.1**	**1 405.1**	**1.4 %**
Member States' contributions	1 168.9	1 174.5	0.5 %
Associate Member States' contributions	30.4	31.5	3.6 %
Special contributions to HL-LHC	53.1	23.7	-55.4 %
EU contributions	8.1	9.0	10.1 %
Additional contributions	5.4	19.1	254.8 %
HFM, AWAKE, FAIR, Hostlab	*5.4*	*17.4*	*224.4 %*
External contributions to the Neutrino Platform (Swiss, in-kind)		*1.6*	
Personnel paid from third party accounts	17.7	17.1	-3.5 %
Personnel on paid special leave	0.8	0.4	-43.7 %
Internal taxation	35.5	35.4	-0.3 %
Knowledge transfer	4.0	1.9	-53.5 %
Other revenues	62.1	92.6	49.0 %
Sales and miscellaneous	*25.8*	*25.2*	*-2.1 %*
SCOAP3 revenues	*9.1*	*9.1*	*0.5 %*
OpenLab revenues	*1.1*	*0.4*	*-62.1 %*
Donations	*21.5*	*50.4*	*133.7 %*
Financial revenues	*2.0*	*2.0*	
In-kind [1]	*1.6*	*1.5*	*-3.8 %*
Housing fund	*1.2*	*4.0*	*247.8 %*

[1] Theoretical interest on the FIPOI loan.

Comments on Figure 2:

The **Member States' contributions** for 2022 total 1 206 MCHF, corresponding to the 2021 total indexed by 0.48%.

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 2022 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[4] and Slovenia as Associate Member States in the pre-stage to Membership, and from Croatia, India, Latvia[5], Lithuania, Pakistan, Turkey and Ukraine as Associate Member States.

The high value of **special contributions to the HL-LHC** in 2021 comes from part of the US in-kind contribution, for which past expenses were recognised in 2021 following the formal signature of the agreement earlier this year. The 2022 value reflects 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 2022 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.

Knowledge transfer revenues are dominated in 2021 by the revenues linked to the Medipix4 collaboration. The ongoing KT projects will continue into 2022, including those nearing their term and whose extension will be subject to an amendment.

The **Sales and miscellaneous** heading includes 14.5 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 remain constant at 9.1 MCHF. 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.

[4] Estonia became an Associate Member State in the pre-stage to Membership on 1 February 2021

[5] Latvia became an Associate Member State on 2 August 2021

Expected **donations** (offset by the same amount of expenses) for the Science Gateway project amount to some 50.4 MCHF in 2022, in line with the planned construction schedule.

The housing fund revenues in 2021 and 2022 are lower than for previous years due to the impact of COVID-19 on hostel occupancy and the renovation of Building 38.

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 2022 Financial Year"

Figure 3: Overview of expenses and budget balances

(in MCHF, 2021 prices, rounded off)	2021 Probable Expenses (2021 prices)	Final 2022 Budget (2022 prices)	Variation of Final 2022 Budget with respect to 2021 Probable Expenses
EXPENSES	**1 265.3**	**1 389.1**	**9.8 %**
Running of scientific programmes and support	**987.0**	**1 079.6**	**9.4 %**
Scientific programmes	**473.4**	**473.4**	**0.0 %**
Accelerator programme	*282.9*	*282.0*	*-0.3 %*
Experiments and research programme	*190.5*	*191.4*	*0.5 %*
Infrastructure and services	**513.6**	**606.3**	**18.0 %**
General infrastructure and services (incl. admin, external relations, safety)	*261.1*	*300.5*	*15.1 %*
Site facilities (incl. infrastructure consolidation, buildings and renovation)	*69.5*	*69.5*	*0.0 %*
Centralised expenses	*183.0*	*236.2*	*29.1 %*
Centralised personnel expenses	*38.4*	*39.8*	*3.6 %*
Internal taxation	*35.5*	*35.4*	*-0.3 %*
Internal mobility, pers. paid special leave or paid from third-party accounts	*18.5*	*17.5*	*-5.2 %*
Energy and water, helium, insurance and postal charges, miscellaneous	*82.1*	*135.8*	*65.5 %*
Interest, bank and financial expenses, in-kind [1]	*8.6*	*7.7*	*-10.3 %*
Scientific projects	**278.4**	**309.4**	**11.2 %**
LHC upgrades	**219.3**	**224.7**	**2.5 %**
LHC injectors upgrade (LIU)	*7.0*		*-100.0 %*
HL-LHC upgrade	*175.1*	*169.4*	*-3.3 %*
LHC detectors upgrades (Phase I) and consolidation	*7.5*	*3.4*	*-55.1 %*
LHC detectors upgrades (Phase II) and R&D	*29.6*	*51.9*	*75.3 %*
Future colliders studies	**16.6**	**22.0**	**32.9 %**
Linear collider	*4.7*	*5.0*	*5.7 %*
Future Circular Collider	*10.7*	*15.2*	*43.1 %*
Muon colliders	*1.2*	*1.8*	*47.6 %*
Accelerator technologies and R&D	**20.9**	**31.5**	**50.7 %**
R&D for future detectors	**7.5**	**7.9**	**4.8 %**
Scientific diversity projects	**14.1**	**23.3**	**65.4 %**
Neutrino Platform	*7.2*	*13.0*	*82.1 %*
Physics Beyond Colliders	*1.7*	*3.7*	*117.4 %*
EU supported computing R&D, support to external facilities	*5.2*	*6.6*	*25.7 %*

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

BALANCE			
Annual balance	120.8	16.1	
Capital repayment allocated to the budget (FIPOI 1, 2 and 3, debt restructuring)	-15.4	-30.5	
Recapitalisation Pension Fund	-60.0	-60.0	
Annual balance allocated to budget deficit	45.4	-74.4	
-Cumulative balance (at 31/12 of the year) [2]**-** **- 250.1**	**-204.7**	**-279.1**	

[2] The cumulative balance of -250.1 MCHF is the accumulated budget deficit at 31/12/2020 as stated in the Financial Statements for 2020.

3. CONTRIBUTIONS OF THE MEMBER STATES AND ASSOCIATE MEMBER STATES FOR 2022

The percentage distribution of the contributions for 2022 was approved by the Council in June 2021 (document CERN/FC/6502-CERN/3576), and the cost-variation index proposals are submitted to the Council for approval in document CERN/FC/6530-CERN/3605 in December 2021.

Figure 4 (1/2): Contributions of the Member States and Associate Member States for the Financial Year 2022

			Net National Income at factor cost			Exchange rates			Net National Income at factor cost	2022 Theoretical Contribution	2022 Due Contribution
			in millions in national currency			national currencies in Swiss francs			in MCHF		
	Country	Currency	2017	2018	2019	2017	2018	2019	Average 2017 to 2019	in %	in %
Member States	Austria	EUR	252 653	264 947	277 519	1.1114	1.1547	1.1125	298 491	2.20841%	2.20841%
	Belgium	EUR	322 464	333 202	345 796	1.1114	1.1547	1.1125	375 944	2.78145%	2.78145%
	Bulgaria	BGN	73 575	78 943	85 978	0.5682	0.5906	0.5688	45 777	0.33868%	0.33868%
	Czech Republic	CZK	3 282 308	3 500 683	3 694 389	0.0422	0.0450	0.0433	152 136	1.12559%	1.12559%
	Denmark	DKK	1 572 261	1 619 929	1 693 166	0.1494	0.1549	0.1490	246 060	1.82049%	1.82049%
	Finland	EUR	155 820	160 714	164 991	1.1114	1.1547	1.1125	180 769	1.33743%	1.33743%
	France	EUR	1 619 700	1 657 262	1 685 826	1.1114	1.1547	1.1125	1 863 084	13.78418%	13.78418%
	Germany	EUR	2 436 537	2 510 109	2 564 131	1.1114	1.1547	1.1125	2 819 660	20.86148%	20.86148%
	Greece	EUR	119 398	120 264	125 028	1.1114	1.1547	1.1125	136 887	1.01277%	1.01277%
	Hungary	HUF	25 064 464	27 728 662	30 883 449	0.0036	0.0036	0.0034	98 742	0.73055%	0.73055%
	Israel	ILS	932 362	979 192	1 039 079	0.2736	0.2723	0.2788	270 455	2.00098%	2.00098%
	Italy	EUR	1 218 394	1 252 564	1 261 474	1.1114	1.1547	1.1125	1 401 282	10.36750%	10.36750%
	Netherlands	EUR	545 645	573 947	592 271	1.1114	1.1547	1.1125	642 689	4.75499%	4.75499%
	Norway	NOK	2 481 673	2 704 435	2 644 697	0.1191	0.1202	0.1130	306 530	2.26789%	2.26789%
	Poland	PLN	1 415 981	1 504 301	1 636 834	0.2611	0.2710	0.2588	400 339	2.96194%	2.96194%
	Portugal	EUR	129 163	134 014	139 899	1.1114	1.1547	1.1125	151 312	1.11949%	1.11949%
	Romania	RON	616 734	684 618	759 620	0.2433	0.2482	0.2344	166 000	1.22816%	1.22816%
	Serbia	RSD	3 422 418	3 649 171	3 889 102	0.0092	0.0098	0.0094	34 559	0.25568%	0.25568%
	Slovakia	EUR	59 230	63 300	66 035	1.1114	1.1547	1.1125	70 795	0.52378%	0.52378%
	Spain	EUR	861 297	893 303	924 742	1.1114	1.1547	1.1125	1 005 839	7.44178%	7.44178%
	Sweden	SEK	2 974 908	3 100 320	3 283 229	0.1153	0.1126	0.1051	345 759	2.55812%	2.55812%
	Switzerland	CHF	511 346	530 682	555 807	1.0000	1.0000	1.0000	532 612	3.94057%	3.94057%
	United Kingdom	GBP	1 489 889	1 540 437	1 585 634	1.2683	1.3052	1.2683	1 970 388	14.57807%	14.57807%
Total Member States									**13 516 107**	**100.0000%**	**100.0000%**
Associate Member States in the pre-stage to Membership	[1] Cyprus	EUR	14 464	15 417	15 999	1.1114	1.1547	1.1125	17 225	0.12744%	0.08730%
	[2] Estonia	EUR	16 287	17 984	19 304	1.1114	1.1547	1.1125	20 114	0.14882%	0.11161%
	[3] Slovenia	EUR	28 139	30 458	32 430	1.1114	1.1547	1.1125	34 174	0.25284%	0.12642%
Total Associate Member States in the pre-stage to Membership									**71 514**	**0.5291%**	**0.3253%**
Associate Member States	[4] Croatia	HRK	264 193	277 217	288 817	0.1489	0.1557	0.1438	41 345	0.30589%	0.03059%
	[5] India	INR	122 918 294	136 467 975	146 009 148	0.0150	0.0142	0.0139	1 937 730	14.33645%	1.43365%
	[6] Latvia	EUR	17 496	18 569	19 556	1.1114	1.1547	1.1125	20 881	0.15449%	0.01545%
	[7] Lithuania	EUR	30 640	33 399	35 792	1.1114	1.1547	1.1125	37 479	0.27729%	0.02773%
	[8] Pakistan	PKR	22 948 680	24 900 942	27 258 337	0.0095	0.0088	0.0073	212 209	1.57005%	0.15700%
	[9] Turkey	TRY	2 252 794	2 703 512	3 101 240	0.2700	0.2077	0.1751	570 959	4.22428%	0.42243%
	[10] Ukraine	UAH	2 145 088	2 561 284	2 855 885	0.0370	0.0359	0.0385	93 771	0.69377%	0.06938%
Total Associate Member States									**2 914 375**	**21.5622%**	**2.1562%**

[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 2022, 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 2022, 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 and will pay 50% of its theoretical contribution in 2022, as provided for in Council Resolution CERN/3288/RA.

[4] Croatia became an Associate Member State on 10 October 2019 and will pay the statutory minimum contribution of 1 MCHF in 2022, 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 in 2022, as provided for in Council Resolution CERN/3274/RA.

[6] Latvia became an Associate Member State on 2 August 2021 and will pay the indexed statutory minimum contribution of 1 MCHF in 2022, as provided for in Council Resolution CERN/3567/C.

[7] Lithuania became an Associate Member State on 8 January 2018 and will pay the statutory minimum contribution of 1 MCHF in 2022, 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 in 2022, as provided for in Council Resolution CERN/3142/RA.

[9] Turkey became an Associate Member State on 6 May 2015 and will pay 10% of its theoretical contribution in 2022, as provided for in Council Resolution CERN/3106/RA.

[10] Ukraine became an Associate Member State on 5 October 2016 and will pay the statutory minimum contribution of 1 MCHF in 2022, as provided for in Council Resolution CERN/3082/RA.

Figure 4 (2/2): Contributions of the Member States and Associate Member States for the Financial Year 2022

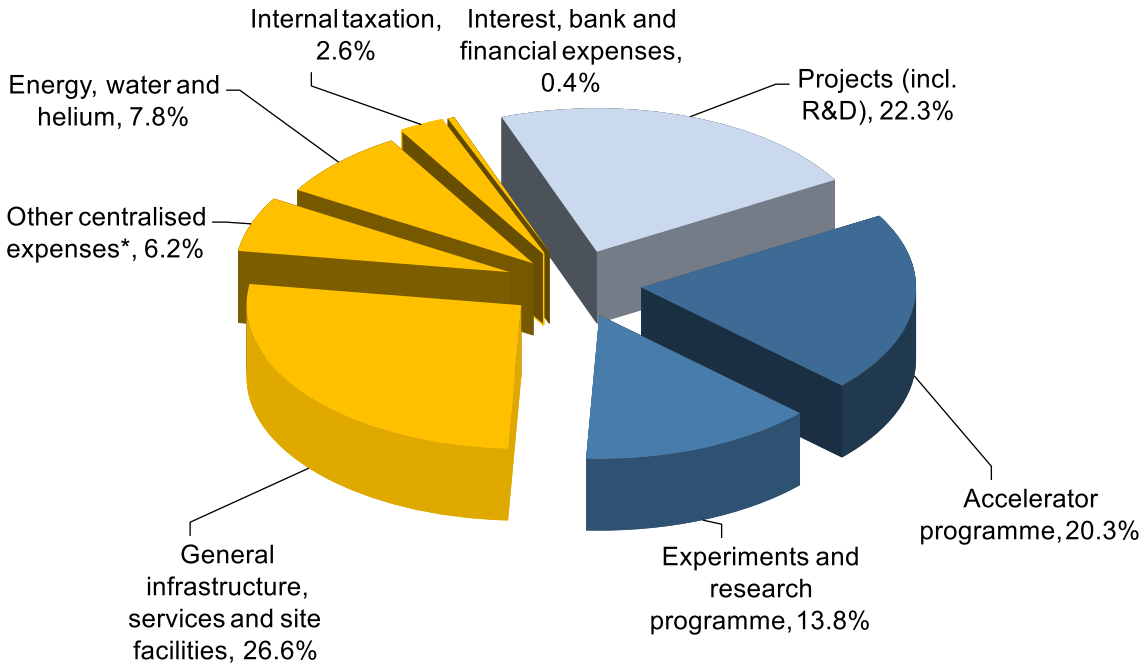
		2022 Annual contribution	2022 Annual contribution	2022 Annual contribution acc. to the corridor principle (**)
	Country	in CHF 2021 prices	in %	in CHF 2022 prices
Member States	Austria	25 814 600	2.20841%	25 937 750
	Belgium	32 513 000	2.78145%	32 668 100
	Bulgaria	3 958 900	0.33868%	3 977 800
	Czech Republic	13 157 250	1.12559%	13 220 000
	Denmark	21 280 100	1.82049%	21 381 600
	Finland	15 633 500	1.33743%	15 708 050
	France	161 126 400	13.78418%	161 894 900
	Germany	243 854 600	20.86148%	245 017 700
	Greece	11 838 500	1.01277%	11 894 950
	Hungary	8 539 550	0.73055%	8 580 300
	Israel	23 389 900	2.00098%	23 501 450
	Italy	121 188 000	10.36750%	121 766 050
	Netherlands	55 582 150	4.75499%	55 847 250
	Norway	26 509 850	2.26789%	26 636 300
	Poland	34 622 800	2.96194%	34 787 950
	Portugal	13 085 950	1.11949%	13 148 350
	Romania	14 356 250	1.22816%	14 424 700
	Serbia	2 988 700	0.25568%	3 002 950
	Slovakia	6 122 600	0.52378%	6 151 800
	Spain	86 988 600	7.44178%	87 403 500
	Sweden	29 902 450	2.55812%	30 045 050
	Switzerland	46 062 200	3.94057%	46 281 900
	United Kingdom	170 406 400	14.57807%	171 219 200
Total Member States		**1 168 922 250**	**100.0000%**	**1 174 497 600**
Associate Member States in the pre-stage to Membership	Cyprus	1 020 450		1 025 350
	Estonia	1 304 650		1 310 850
	Slovenia	1 477 750		1 484 800
Total Associate Member States in the pre-stage to Membership		**3 802 850**		**3 821 000**
Associate Member States	Croatia	1 000 000		1 000 000
	India	16 758 250		16 838 200
	Latvia	1 020 000		1 024 850
	Lithuania	1 000 000		1 000 000
	Pakistan	1 835 200		1 843 950
	Turkey	4 937 900		4 961 450
	Ukraine	1 000 000		1 000 000
Total Associate Member States		**27 551 350**		**27 643 600**
Grand TOTAL		**1 200 276 450**		**1 205 962 200**

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

III. EXPENSES FOR THE 2022 FINANCIAL YEAR

1. EXPENSES BY SCIENTIFIC AND NON-SCIENTIFIC PROGRAMMES

Figure 5: Final 2022 Budget (personnel, materials and interest & financial costs)



* Including centralised personnel expenses, internal mobility and personnel on paid special leave (3%),
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

2021 Probable Expenses (2021 prices) (a)				Fact sheet	Activity	Final 2022 Budget (2022 prices) (b)				Variation of Final 2022 Budget with respect to 2021 Probable Expenses
FTE	kCHF					FTE	kCHF			
Personnel	Personnel	Materials	Total			Personnel	Personnel	Materials	Total	
924.3	161 020	121 880	282 900		Accelerator programme	915.6	158 345	123 610	281 955	-0.3 %
370.5	59 295	61 630	120 925	1	LHC machine	367.6	55 905	65 255	121 160	0.2 %
134.0	22 530	18 440	40 970	2	SPS complex	132.6	23 290	20 665	43 955	7.3 %
232.8	41 645	26 435	68 080	3	PS complex	207.5	37 870	22 030	59 900	-12.0 %
187.0	37 550	15 375	52 925	4	Accelerator support	208.1	41 280	15 660	56 940	7.6 %
686.5	130 885	59 575	190 460		Experiments and research programme	680.4	130 140	61 290	191 430	0.5 %
66.8	13 140	3 090	16 230	5	ATLAS	59.9	12 120	2 700	14 820	-8.7 %
68.6	12 585	3 390	15 975	6	CMS	59.6	11 530	2 955	14 485	-9.3 %
57.9	12 025	1 470	13 495	7	LHCb	54.3	11 790	1 265	13 055	-3.3 %
57.9	11 830	2 050	13 880	8	ALICE	54.6	11 700	1 495	13 195	-4.9 %
3.1	910	370	1 280	9	Other LHC experiments	3.1	890	250	1 140	-10.9 %
28.4	5 425	1 795	7 220	10	Scientific diversity programme	26.1	4 890	1 450	6 340	-12.2 %
51.7	8 840	255	9 095	11	Theory	54.2	9 220	1 155	10 375	14.1 %
87.0	18 545	15 035	33 580	12	Scientific computing	81.2	18 145	18 520	36 665	9.2 %
265.1	47 585	32 120	79 705	13	Scientific support	287.5	49 855	31 500	81 355	2.1 %
1 610.7	291 905	181 455	473 360		Grand Total	1 596.1	288 485	184 900	473 385	0.0 %
	21.06%	13.09%	34.15%		% of total revenues		20.53%	13.16%	33.69%	

Comments on Figure 6:

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

The Long Shutdown activities that are earmarked under the **LHC machine** heading were completed in 2021.

The overall **Accelerator programme** heading is stable with a reallocation of personnel from shut-down and injector commissioning activities to the operation in 2021 and 2022. On the PS complex side, ELENA and the East Area renovation are approaching completion; the SM18 infrastructure upgrade also. The accelerator and North Area consolidation activities are ramping-up under the SPS complex, as well as the electrical network consolidation.

The **Theory** heading is expected to increase with the visitor programmes back to normal after the slow down caused by the pandemic.

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

3. INFRASTRUCTURE AND SERVICES

Figure 7: Infrastructure, services and centralised expenses

2021 Probable Expenses (2021 prices) (a)				Fact sheet	Activity	Final 2022 Budget (2022 prices) (b)				Variation of Final 2022 Budget with respect to 2021 Probable Expenses
FTE	kCHF					FTE	kCHF			
Personnel	Personnel	Materials	Total			Personnel	Personnel	Materials	Total	
1 164.0	**275 750**	**237 860**	**513 610**		**Infrastructure and services**	**1 129.7**	**275 930**	**330 320**	**606 250**	**18.0 %**
186.1	**29 715**	**17 340**	**47 055**	**14**	**Safety, health and environment**	**177.6**	**29 060**	**18 700**	**47 760**	**1.5 %**
92.2	**16 465**	**53 030**	**69 495**	**15**	**Site facilities**	**99.0**	**17 510**	**52 015**	**69 525**	**0.0 %**
219.0	**38 405**	**23 005**	**61 410**	**16**	**Technical infrastructure**	**213.5**	**39 190**	**20 220**	**59 410**	**-3.3 %**
162.0	**27 595**	**15 165**	**42 760**	**17**	**Informatics and computing infrastructure**	**147.6**	**26 170**	**23 095**	**49 265**	**15.2 %**
264.1	**51 695**	**9 785**	**61 480**	**18**	**Administration**	**269.0**	**52 365**	**11 765**	**64 130**	**4.3 %**
108.9	**19 510**	**28 870**	**48 380**	**19**	**External relations**	**102.2**	**18 920**	**61 010**	**79 930**	**65.2 %**
131.6	**92 365**	**90 665**	**183 030**	**20**	**Centralised expenses**	**121.0**	**92 715**	**143 515**	**236 230**	**29.1 %**
	38 365		38 365		Centralised personnel expenses		39 765		39 765	3.6 %
	35 515		35 515		Internal taxation		35 425		35 425	-0.3 %
2.2	755		755		Personnel on paid special leave	1.2	425		425	-43.7 %
129.4	17 730		17 730		Personnel paid from third-party accounts	119.8	17 100		17 100	-3.6 %
		60 550	60 550		Energy and water			105 320	105 320	73.9 %
		1 820	1 820		Helium			3 150	3 150	73.1 %
		19 680	19 680		Insurance, postal charges, miscellaneous			27 315	27 315	38.8 %
		7 055	7 055		Interest, bank and financial expenses			6 230	6 230	-11.7 %
		1 560	1 560		In-kind			1 500	1 500	-3.8 %
	19.89%	17.16%	37.05%		% of total revenues		19.64%	23.51%	43.15%	

Comments on Figure 7:

The overall budget allocation to **Infrastructure, services and centralised expenses** increases in 2022, mainly due to increased energy consumption associated with the restart of the accelerator complex and the construction of the Science Gateway (the latter being offset by corresponding revenues).

The allocation for **Safety, health and environment** is stable.

The allocations on **Site Facilities** and **Technical infrastructure** remain stable between 2021 and 2022.

The increased allocation for **Informatics and computing infrastructure** is due to the start of construction of the new Prévessin Computing Centre, as well as the CERN firewall replacement and upgrade and the consolidation of computing services and the computing network.

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

The **Centralised expenses** are expected to remain constant, with the exception of increased energy consumption linked to the restart of the accelerator chain in 2022.

4. PROJECTS (CONSTRUCTION, R&D)

Figure 8: Projects

2021 Probable Expenses (2021 prices) (a)				Fact sheet	Activity	Final 2022 Budget (2022 prices) (b)				Variation of Final 2022 Budget with respect to 2021 Probable Expenses
FTE	kCHF					FTE	kCHF			
Personnel	Personnel	Materials	Total			Personnel	Personnel	Materials	Total	
585.4	**106 695**	**171 675**	**278 370**		**Scientific projects**	**571.3**	**107 965**	**201 475**	**309 440**	**11.2 %**
19.1	**3 180**	**3 825**	**7 005**	**21**	**LHC injectors upgrade**					**-100.0 %**
266.7	**47 355**	**127 745**	**175 100**	**22**	**HL-LHC upgrade**	**273.1**	**50 300**	**119 100**	**169 400**	**-3.3 %**
114.3	**23 820**	**13 340**	**37 160**	**23**	**LHC detectors upgrades**	**108.0**	**24 160**	**31 160**	**55 320**	**48.9 %**
17.6	2 695	4 835	7 530		LHC detectors upgrades (Phase I) and consolidation	3.3	545	2 835	3 380	-55.1 %
96.7	21 125	8 505	29 630		LHC detectors upgrades (Phase II) and R&D	104.8	23 615	28 325	51 940	75.3 %
52.8	**11 320**	**5 270**	**16 590**	**24**	**Future colliders studies**	**57.4**	**12 435**	**9 610**	**22 045**	**32.9 %**
11.8	2 715	1 985	4 700		Linear collider	11.4	2 710	2 260	4 970	5.7 %
35.3	7 465	3 185	10 650		Future Circular Collider	38.7	8 365	6 880	15 245	43.1 %
5.7	1 140	100	1 240		Muon colliders	7.3	1 360	470	1 830	47.6 %
49.4	**8 825**	**12 070**	**20 895**	**25**	**Accelerator technologies and R&D**	**54.0**	**9 420**	**22 060**	**31 480**	**50.7 %**
6.3	1 005	1 245	2 250		RF technologies R&D	6.4	1 025	4 050	5 075	125.6 %
20.2	3 715	7 105	10 820		High field superconducting accelerator magnets R&D	19.9	3 930	13 920	17 850	65.0 %
7.4	1 290	1 590	2 880		Proton-driven plasma wakefield acceleration (AWAKE)	14.2	1 910	2 345	4 255	47.7 %
3.5	760	590	1 350		CERN Linear Electron Accelerator for Research (CLEAR)	3.9	790	700	1 490	10.4 %
12.0	2 055	1 540	3 595		Other accelerator R&D	9.6	1 765	1 045	2 810	-21.8 %
38.6	**4 905**	**2 630**	**7 535**	**26**	**R&D for future detectors**	**33.2**	**4 290**	**3 605**	**7 895**	**4.8 %**
44.6	**7 290**	**6 795**	**14 085**	**27**	**Scientific diversity projects**	**45.6**	**7 360**	**15 940**	**23 300**	**65.4 %**
20.2	4 015	3 140	7 155		Neutrino platform	21.5	4 215	8 815	13 030	82.1 %
4.0	635	1 065	1 700		Physics Beyond Colliders	7.2	1 035	2 660	3 695	117.4 %
16.6	2 030	1 680	3 710		EU supported computing R&D	13.8	1 575	2 885	4 460	20.2 %
3.8	610	910	1 520		Support to external facilities	3.1	535	1 580	2 115	39.1 %
	7.70%	12.39%	20.08%		% of total revenues		7.68%	14.34%	22.02%	

Comments on Figure 8:

The variations in the budget allocations from 2021 to 2022 reflect the status of the various projects.

The **LHC Injectors Upgrade** was completed in 2021.

Excluding the in-kind contributions, the budget for the **HL-LHC upgrade** is ramping up to peak in 2022 and 2023. Civil engineering works account for the predominant part of the 2021 expenses, soon to be replaced by technical infrastructure works and series production of magnets.

LHC detector upgrades: The Phase I of the LHC detector upgrades is ending in 2021 for CMS, ALICE and LHCb. The budget for the Phase II LHC detector upgrades reflects the ramp-up of the activities.

Future collider studies: The Future Circular Collider, CLIC and Muon Colliders are grouped under this heading. The budget allocations for the Future Circular Collider and muon colliders are ramping up in 2022 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 2022. 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 (Nb_3Sn and high-temperature superconductors), magnet technology, models and prototypes as well as the infrastructure required to perform material and magnet testing. Funds have been secured for the **CLEAR** test facility.

The **AWAKE** budget is ramping up for the AWAKE's second run.

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 2022.

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

The **Scientific diversity projects** heading includes activities done 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 increase from 2021 to 2022 is mainly explained by the reprofiling 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 2021 and 2022, broken down by programme and project.

(in kCHF, rounded off)

2021 Probable Expenses (2021 prices)			Programme	Project	Final 2022 Budget (2022 prices)		
Personnel	**Materials**	**Total**			**Personnel**	**Materials**	**Total**
26 075	**47 805**	**73 880**		**Sub-total Accelerator programme**	**24 035**	**58 500**	**82 535**
12 935	**24 895**	**37 830**		**LHC machine**	**12 680**	**36 555**	**49 235**
255	150	405		Collimation system enhancements	155	550	705
780	1 455	2 235		Electrical network 2025	1 120	2 395	3 515
375	5	380		Experimental areas consolidation	430	205	635
	430	430		IT Long shutdown work		765	765
5 985	6 495	12 480		LHC consolidation	6 000	11 910	17 910
10	390	400		LHC diodes consolidation		445	445
155	255	410		LHC magnet repair	175	270	445
770	1 020	1 790		LHC spares	730	3 380	4 110
450	975	1 425		Linac4 RFQ spare	480	2 420	2 900
330	85	415		POPS repair, spare and consolidation	440	635	1 075
2 215	2 120	4 335		Radiation to electronics (R2E)	1 530	3 080	4 610
370	10 475	10 845		Spares and consolidation in the framework of HL-LHC	245	9 290	9 535
1 240	1 040	2 280	**Accelerator programme**	Support to LHC experiments	1 375	1 210	2 585
11 950	**20 425**	**32 375**	Included in Figure 6	**PS and SPS complex**	**10 665**	**19 160**	**29 825**
7 370	8 595	15 965		Accelerator consolidation	6 325	9 010	15 335
630	1 910	2 540		AD consolidation	560	2 725	3 285
325	4 735	5 060		East area renovation		210	210
395	475	870		ELENA			
145	940	1 085		ISOLDE nano laboratory	65	650	715
2 240	2 700	4 940		North area consolidation	2 535	4 500	7 035
	60	60		Oxygen run preparation	110	275	385
495	395	890		PS and SPS spares	605	980	1 585
350	615	965		SPS electrical substations consolidation	465	810	1 275
770	**2 165**	**2 935**		**Accelerator support**	**220**	**2 200**	**2 420**
	60	60		General accelerator developments		410	410
620	1 285	1 905		SM18 infrastructure upgrade		305	305
150	820	970		TE infrastructure consolidation	110	830	940
				Other accelerator support projects	110	655	765
290	**220**	**510**		**EU projects**	**340**	**330**	**670**
130	**100**	**230**		**KT projects**	**130**	**255**	**385**
7 720	**26 135**	**33 855**		**Sub-total Experiments and research programme**	**6 935**	**27 830**	**34 765**
	115	**115**		**Other LHC experiments**			
	115	115		LHC host lab - FASER			
325	**90**	**415**		**Scientific diversity programme**	**330**	**80**	**410**
325	90	415		AEgIS	330	80	410
5 380	**11 345**	**16 725**	**Experiments and research programme**	**LHC Computing Grid**	**5 210**	**15 200**	**20 410**
40	**11 925**	**11 965**		**Scientific support**		**11 135**	**11 135**
				Bldg 513 exhibition for WWW invention		85	85
40	95	135	Included in Figure 6	Computer security hardening		50	50
	1 805	1 805		EP Safety and consolidation		835	835
	155	155		HVAC system building 42		180	180
				PCB Workshop machine		125	125
	9 870	9 870		SCOAP3		9 860	9 860
1 180	**1 075**	**2 255**		**EU projects**	**1 105**	**1 105**	**2 210**
795	**1 585**	**2 380**		**KT projects**	**290**	**310**	**600**

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

(in kCHF, rounded off)

2021 Probable Expenses (2021 prices)			Programme	Project	Final 2022 Budget (2022 prices)		
Personnel	**Materials**	**Total**			**Personnel**	**Materials**	**Total**
12 805	**67 460**	**80 265**		**Sub-total Infrastructure and services**	**10 535**	**107 570**	**118 105**
5 120	**7 925**	**13 045**		**Safety, health and environment**	**4 370**	**9 550**	**13 920**
385	1 780	2 165		CEPS	380	1 845	2 225
	470	470		Emergency		585	585
	30	30		Fire brigade safety control room			
635	425	1 060		Fire safety projects	430	765	1 195
2 215	3 270	5 485		Radioactive waste management	1 880	3 825	5 705
1 215	585	1 800		Ramses II light	1 100	975	2 075
670	1 365	2 035		Other safety projects	580	1 555	2 135
2 740	**27 640**	**30 380**		**Site facilities**	**3 000**	**25 620**	**28 620**
	50	50		Building 107 (surface treatment)		270	270
10	20	30		Building 140 (office building in Meyrin for EP department and users)	275	755	1 030
260	3 495	3 755		Building 38 (hotel renovation)		210	210
	5	5		Building 599 (material science) relocation			
70	40	110		Building 777 (offices & laboratories in Prévessin)	205	15	220
75	2 530	2 605		Building 937 (offices & laboratories in Prévessin)		650	650
5	230	235		Consolidation works for the hotels	5	740	745
	15	15		Library reading room		3 465	3 465
70	440	510		Restaurant consolidation	70		70
	200	200		Science Gateway interfaces		670	670
	455	455		Security improvement measures		3 275	3 275
2 250	20 160	22 410		Surface and technical infrastructure consolidation (roofs, facades, heating, etc.)	2 445	15 570	18 015
245	**2 895**	**3 140**	**Infrastructure and services**	**Technical infrastructure**	**105**	**4 580**	**4 685**
210	70	280		CAD upgrade	80	65	145
35	985	1 020	Included in Figure 7	Investment in new mechanical technologies	25	995	1 020
	290	290		LHC point 8 heat recovery for CPAG			
	645	645		Replacement of water-cooled cables			
	600	600		Smarteam replacement		910	910
	245	245		Technical galleries consolidation		2 490	2 490
	60	60		Other infrastructure projects		120	120
2 000	**4 960**	**6 960**		**Informatics and computing infrastructure**	**795**	**13 365**	**14 160**
	200	200		CERN firewall replacement and upgrade		595	595
	440	440		Computing network consolidation		1 875	1 875
	470	470		IT HPC clusters		530	530
495	1 635	2 130		Microsoft transition	60	1 915	1 975
	415	415		NXCALS hosting consolidation and upgrades		215	215
1 195	635	1 830		Openlab	455	745	1 200
	215	215		Prévessin computing centre		6 755	6 755
205	950	1 155		Quantum technology initiative	225	735	960
105		105		Other informatics and computing infrastructure projects	55		55
	365	**365**		**Administration**		**705**	**705**
	150	150		FAP projects		595	595
	55	55		HR projects		40	40
	160	160		Risk management		70	70
1 005	**21 605**	**22 610**		**External relations**	**765**	**52 040**	**52 805**
	90	90		Alumni		35	35
				CERN studio upgrade		350	350
40	205	245		High School Students Internship Programme			
15	145	160		IdeaSquare building		585	585
905	20 895	21 800		Science Gateway	660	50 395	51 055
	20	20		SM18 visit point reinstatement		495	495
45	250	295		Other outreach projects	105	180	285
1 435	**895**	**2 330**		**EU projects**	**1 430**	**1 220**	**2 650**
260	**1 175**	**1 435**		**KT projects**	**70**	**490**	**560**

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

(in kCHF, rounded off)

2021 Probable Expenses (2021 prices)			Programme	Project	Final 2022 Budget (2022 prices)		
Personnel	**Materials**	**Total**			**Personnel**	**Materials**	**Total**
100 915	**167 905**	**268 820**		**Sub-total Scientific projects**	**102 565**	**197 760**	**300 325**
3 180	**3 825**	**7 005**		**LHC Injectors Upgrade**			
47 355	**127 300**	**174 655**		**LHC luminosity upgrade project (HL-LHC)**	**50 300**	**118 980**	**169 280**
23 820	**13 340**	**37 160**		**LHC detectors upgrades**	**24 160**	**31 160**	**55 320**
225	50	275		ALICE ITS 3	215	95	310
22 840	6 795	29 635		LHC detectors upgrade	23 245	10 765	34 010
740	3 130	3 870		LHC host lab	445	19 055	19 500
15	100	115		LHCb phase II	255	185	440
	2 835	2 835		R&D for HL-LHC detectors		1 060	1 060
	430	430		SXA5 CMS building			
11 315	**5 130**	**16 445**		**Energy frontier studies**	**12 435**	**9 610**	**22 045**
2 715	1 985	4 700		CLIC	2 710	2 260	4 970
7 460	3 045	10 505		Future Circular Collider study	8 365	6 880	15 245
1 140	100	1 240		Muon colliders	1 360	470	1 830
5 275	**8 780**	**14 055**		**Accelerator technologies and R&D**	**6 320**	**19 075**	**25 395**
290	200	490	**Scientific projects**	High efficiency klystron R&D	380	1 125	1 505
3 595	6 720	10 315	Included in Figure 8	High-field superconducting accelerator magnets (HFM) R&D	3 930	13 920	17 850
	45	45		HTS ondulator		85	85
1 255	1 490	2 745		Proton plasma wakefield acceleration (AWAKE)	1 910	2 325	4 235
25	85	110		Shape memory alloy rings as UHV connectors	25	165	190
				SM18 extension for superconducting RF		320	320
110	240	350		Superconducting RF infrastructure upgrade	75	1 135	1 210
4 390	**2 490**	**6 880**		**R&D for future detectors**	**3 820**	**3 410**	**7 230**
2 925	**4 075**	**7 000**		**Scientific diversity projects**	**3 665**	**12 305**	**15 970**
2 150	2 520	4 670		CERN Neutrino Platform	2 525	8 555	11 080
635	1 065	1 700		Physics Beyond Colliders study	1 035	2 660	3 695
140	490	630		Upgrade of Building 180 test facility (FAIR)	105	1 090	1 195
2 515	**2 155**	**4 670**		**EU projects**	**1 805**	**3 080**	**4 885**
140	**810**	**950**		**KT projects**	**60**	**140**	**200**
147 515	**309 305**	**456 820**		**Grand Total**	**144 070**	**391 660**	**535 730**

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	2021 Probable Expenses (2021 prices)	Final 2022 Budget (2022 prices)	Variation of Final 2022 Budget with respect to 2021 Probable Expenses
	(a)	(b)	(b)-(a) /(a)
Materials expenses	**582 475**	**709 110**	**21.7%**
Goods, consumables and supplies	301 765	363 905	20.6%
Electricity, heating gas and water	60 550	105 320	73.9%
Industrial services	120 600	127 295	5.6%
Service contracts	114 860	121 375	5.7%
Temporary labour	5 740	5 920	3.1%
Associated members of the personnel	39 155	42 375	8.2%
Other overheads	60 405	70 215	16.2%
Consultancy	17 250	18 350	6.4%
Contributions to collaborations	7 000	7 000	
Miscellaneous[1]	36 155	44 865	24.1%
Interest and financial costs	**8 515**	**7 585**	**-10.9%**
Interest on bank loans	5 955	5 085	-14.6%
In-kind (FIPOI interest 0%)[2]	1 560	1 500	-3.8%
Other financial expenses	1 000	1 000	
TOTAL MATERIALS	**590 990**	**716 695**	**21.3%**

[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:

The electricity consumption in 2022 reflects a normal operation year with a year-end technical stop at the beginning of the year. The higher expenses in 2022 are also due to the increase in the electricity price (see cost-variation index for 2022, CERN/FC/6530-CERN/3605).

Following the lifting of the travel restrictions relating to the COVID-19 pandemic, the heading for the associated members of the personnel is expected to increase in 2022, with higher exchanges of scientific personnel and full running of the student programmes.

The increase of the “miscellaneous” heading is explained by the expenses for the Science Gateway exhibitions (fully balanced by corresponding revenues) and the duty and hospitality component of various budget lines (visits, events, conferences, training, recruitment, etc.).

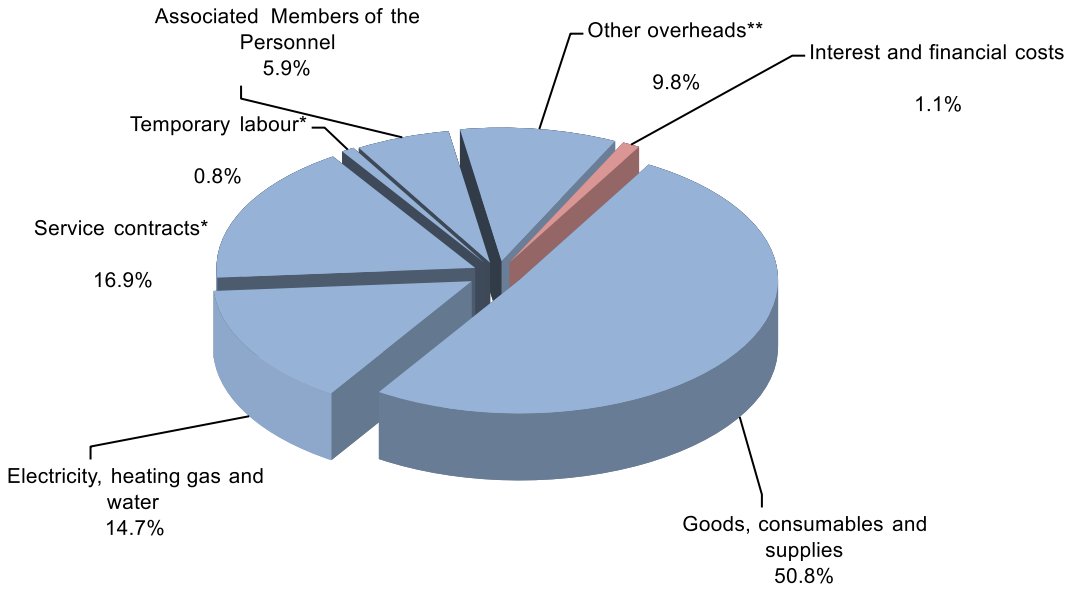
Figure 11: Breakdown of materials expenses by nature

Materials expenses: 98.9%

Interest and financial costs: 1.1%

* Total for industrial services: 16.9% + 0.8% = 17.7%.

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



2. PERSONNEL EXPENSES BY NATURE

Figure 12: Personnel expenses by nature

(in kCHF, rounded off)

Nature	2021 Probable Expenses (2021 prices) (a)	Final 2022 Budget (2022 prices) (b)	Variation of Final 2022 Budget with respect to 2021 Probable Expenses (b)-(a) /(a)
Staff members [1]	**519 990**	**524 660**	**0.9%**
Basic salaries (incl Saved Leave)	***338 000***	***339 925***	***0.6%***
Basic salaries	339 865	341 360	
Performance payment (non-pensionable)	4 510	4 575	
Contribution to Saved Leave schemes	-6 375	-6 010	
Allowances	***65 395***	***67 270***	***2.9%***
Non-resident allowances / International indemnities	19 125	19 725	
Family and child allowances	25 775	26 330	
Special allowances	2 880	3 415	
Overtime	1 535	2 050	
Various allowances	16 080	15 750	
Social contributions	***116 595***	***117 465***	***0.7%***
Pension Fund	89 615	90 330	
Health Insurance	26 980	27 135	
Fellows [2]	**80 480**	**72 530**	**-9.9%**
Centralised personnel budget	**73 880**	**75 190**	**1.8%**
Centralised personnel expenses	***38 365***	***39 765***	***3.6%***
Installation, recruitment and termination of contracts	8 895	10 145	14.1%
Installation and removal costs	*1 695*	*1 900*	
Termination allowances	*7 200*	*8 245*	
Additional periods of membership in the Pension Fund for shift work			
Contribution to Health Insurance for pensioners incl. Long-term care	29 470	29 620	0.5%
Contribution to Health Insurance for pensioners	*26 700*	*26 830*	
Contribution to Long Term Care for pensioners	*2 770*	*2 790*	
Internal taxation	***35 515***	***35 425***	***-0.3%***
TOTAL PERSONNEL	**674 350**	**672 380**	**-0.3%**

[1] Including staff paid from third-party accounts (10.6 MCHF in 2021 and 11.4 MCHF in 2022).

[2] Including fellows paid from third-party accounts (7.1 MCHF in 2021 and 5.7 MCHF in 2022).

Comments on Figure 12:

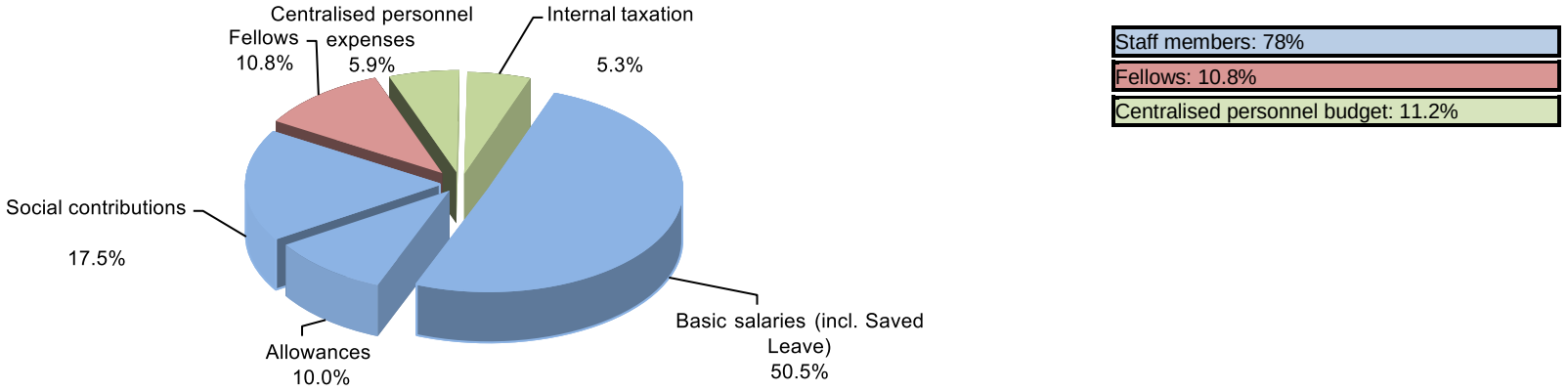
The total CERN personnel budget for 2022 amounts to 672 MCHF. This includes 17.1 MCHF for staff and fellows paid from third-party accounts.

The 2022 budget for staff members totals 524.7 MCHF. This amount takes into account the cost-variation index.

Additional fellowship funding will be made available during 2022, through materials-to-personnel transfers for the GET fellows programme and the Technical Trainees programme, which will be executed once the arrivals are confirmed.

Internal taxation is expected to amount to 35.5 MCHF and is offset by an equivalent line in the revenues.

Figure 13: Breakdown of personnel expenses by nature



3. ENERGY AND WATER

Figure 14: Expenses – Energy and water

(in MCHF, rounded off)

Nature	2021 Probable Expenses (2021 prices)	Final 2022 Budget (2022 prices)	Variation of Final 2022 Budget with respect to 2021 Probable Expenses
	(a)	(b)	(b)-(a) /(a)
Energy and water (baseload)	**12.90**	**16.70**	**29.5%**
Electricity	6.85	9.70	41.6%
Heating oil and gas	3.00	3.90	30.0%
Water and waste water	3.05	3.10	1.6%
Energy for basic programmes	**47.65**	**88.62**	**86.0%**
Experimental areas[1]	9.08	24.21	166.7%
CERN Data Center	1.81	2.55	40.6%
Accelerators	16.48	26.43	60.3%
AD	*0.58*	*0.88*	*51.1%*
PS	*3.56*	*5.13*	*44.2%*
SPS	*12.34*	*20.42*	*65.4%*
LHC	20.28	35.43	74.7%
TOTAL ENERGY	**60.55**	**105.32**	**73.9%**

[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 2021 and 2022

(in MCHF, rounded off, estimated as at 22/11/2021)		2021 (2021 prices)	2022 (2022 prices)
(A) START OF THE YEAR			
	Liquid assets brought forward	187	* 240
(1) CASH INFLOW		**1 427**	**1 414**
	Contributions	1 187	1 206
	Teams and collaborations	122	120
	EU, KT, UBS credit facility, other revenues	118	88
(2) CASH OUTFLOW		**1 375**	**1 489**
	Payments	1 156	1 272
	Teams and collaborations	122	120
	Interest, bank and financial expenses	7	6
	Capital repayment Fortis and FIPOI	29	30
	Recapitalisation of the Pension Fund	60	60
(3) VARIATION OF CASH POSITION		**53**	**-75**
(B) END OF THE YEAR			
	Estimated liquid assets	**240**	**165**

* For 2022, 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 2022.

Short-term bank loans and overdrafts

No short-term bank loans or overdrafts are expected in 2022, 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 amounts to 140.3 MCHF at the end of 2021 and will reduce to 110.9 MCHF by the end of 2022. The loan will be fully reimbursed by the end of June 2026.

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. Due to a more positive cash position than presented in June 2021 in the 2022 Draft Budget, it is expected that no additional advances will be needed until the end of 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.