

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

*Action to be taken*

*Voting procedure*

For information	<b>FINANCE COMMITTEE</b> 366 <sup>th</sup> Meeting 12 December 2018	—
For information	<b>RESTRICTED COUNCIL</b> 191 <sup>st</sup> Session 13 December 2018	—

**Final Budget**  
of the Organization  
for the sixty-fifth financial year  
**2019**

The Final 2019 Budget is expressed in 2019 prices, i.e. it implements the 1.83 % 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 (CERN/FC/5644-CERN/3023), the cost-variation indices applying to expenses proposed in document CERN/FC/6274-CERN/3394, which the Finance Committee is invited to recommend and the Council is invited to approve under separate items of their respective December 2018 agendas, and the scale of contributions (document CERN/FC/6233-CERN/3363) approved by the Council in June 2018.

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

Geneva, December 2018



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**I. EXECUTIVE SUMMARY**

## Introduction

Following the Council's approval in June 2018 of the proposed Medium-Term Plan (MTP) for the period 2019-2023, including an outlook until 2028, and of the 2019 Draft Budget<sup>1</sup>, the Management hereby presents the Final 2019 Budget in 2019 prices.

The Final 2019 Budget is based on the same objectives and targets for the scientific and non-scientific programmes as the 2019 Draft Budget.

The Final 2019 Budget also takes account of the 2018 Probable Revenues and Expenses, including the carry-forward, in line with CERN's Financial Rules.

The Final 2019 Budget is expressed in 2019 prices following application of the cost-variation indices<sup>2</sup> submitted to the Council and the Finance Committee for approval under separate agenda items in December 2018. The overall cost-variation index of 1.83% is applied to the Member States' contributions in line with the "corridor principle" approved by the Council in June 2012<sup>3</sup>.

In line with the 2013 decision to introduce "rolling reporting and evaluation of the budgetary consequences, in particular the cumulative budget deficit, during the MTP discussions in the coming years"<sup>4</sup>, the impact on the overall budget deficit for the years 2018 and 2019 is shown in Figure 3.

With respect to the 2019 Draft Budget, the estimated cumulative budget deficit at the end of 2019 remains stable at -377.8 MCHF.

<sup>1</sup> CERN/SPC/1107-CERN/FC/6232-CERN/3362

<sup>2</sup> CERN/FC/6274-CERN/3394

## Variations with respect to the Revised 2018 Budget and the 2019 Draft Budget

The Final 2019 Budget incorporates minor variations in revenues and expenses without any change in the scientific objectives set out in the 2019 Draft Budget. Variations are shown in Figure 1 and can be summarised as follows:

### Changes in revenues

- 1.83% indexation of contributions, corresponding to 20.5 MCHF for the Member States and 0.4 MCHF for the Associate Member States;
- Updated information concerning EU-supported projects;
- Recalculation of revenues in respect of internal taxation;
- Changes in revenues for personnel paid from team accounts and personnel on detachment;
- "OpenLab revenues" takes into account all agreements signed for the next phase (phase 6), covering the three-year period from 2018 to 2020;
- Small changes in the "Other revenues" heading.

<sup>3</sup> CERN/FC/5644-CERN/3023

<sup>4</sup> CERN/FC/5760/RA, page 25

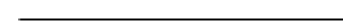
**Changes in expenses**

- Indexation of expenses<sup>2</sup>, i.e. 1.02% for the personnel budget and 2.64% for the materials budget, subject to the Council's approval of the cost-variation index;
- Updated information for EU-supported projects;
- Reprofiting of the recruitment of some of the 80 LD posts mentioned in document CERN/FC/6065/RA;
- Material to personnel transfers, mainly for fellows (GET programme) and technical trainees;
- Changes in expenses for personnel paid from team accounts and personnel on detachment;
- Multi-annual projects (creation, update, reprofiling and carry-forward):
  - Focus on the consolidation activities needed during LS2 to enhance the reliability of the injector chain;
  - Reprofiting of LHC detectors phase II upgrade funds for better alignment with the more precise definition of the cost and spending profiles of the experiments' upgrade activities following the completion of the Technical Design Reports;
  - Bringing-forward of part of the budget for the studies related to the Future Circular Collider (development of the high-field superconducting magnets).

**Figure 1 (1/2): Variations with respect to the Revised 2018 Budget and 2019 Draft Budget (CERN/SPC/1107-CERN/FC/6232-CERN/3362, p. 30 and 31)**

(in MCHF, rounded off)	Variations between 2018 Probable Revenues and Expenses and Revised 2018 Budget (2018 prices)	Variations between Final 2019 Budget (2019 prices) and 2019 Draft Budget (2018 prices)
<b>Variations in REVENUES</b>	<b>1.7</b>	<b>28.6</b>
<b>Indexation to 2019 prices</b>		<b>21.0</b>
<i>Member States' contributions</i>		20.5
<i>Associated Member States' contributions</i>		0.4
EU contributions	-0.2	1.0
Additional contributions (HIE-ISOLDE, GSI)	-0.2	0.2
Personnel paid from team accounts	1.3	3.9
Personnel on detachment	0.1	0.0
Internal taxation update	0.0	0.3
Other revenues	0.6	2.2
<i>Sales and miscellaneous</i>	0.5	0.5
<i>OpenLab revenues</i>	0.1	1.7
<b>Variations in EXPENSES</b>	<b>-10.1</b>	<b>40.7</b>
<b>Indexation to 2019 prices</b>		<b>22.5</b>
<i>Personnel (including internal taxation)</i>		6.1
<i>Materials</i>		16.4
<b>Operation</b>	<b>-9.9</b>	<b>6.1</b>
<i>Re-profiling to cover existing commitments in the future</i>	-6.8	6.8
<i>Operational savings (allocated to new and existing projects)</i>	-3.2	-0.7
<b>Projects (new, updates, carry-forward and reprofiling)</b>	<b>-0.6</b>	<b>5.4</b>
<b>Reallocation of materials budget to fellows and technical trainees</b>	<b>-0.4</b>	<b>0.5</b>
<i>Materials</i>	-9.8	-14.2
<i>Fellows &amp; technical trainees</i>	9.4	14.7
<b>Re-profiling of additional LD posts (FC/6065/RA)</b>	<b>-0.6</b>	<b>-0.4</b>
<b>Expenses corresponding to EU contributions</b>	<b>-0.2</b>	<b>1.0</b>
<b>Personnel paid from team accounts</b>	<b>1.3</b>	<b>3.9</b>
<b>Personnel on detachment</b>	<b>0.1</b>	<b>0.0</b>
<b>Expenses corresponding to OpenLab revenues</b>	<b>0.1</b>	<b>1.7</b>
<b>Variations in BALANCE</b>	<b>11.8</b>	<b>-12.1</b>
<b>IMPACT ON CUMULATIVE BALANCE</b>	<b>11.8</b>	<b>-0.3</b>

Details concerning projects in the  
second table



**Figure 1 (2/2): Variations with respect to the Revised 2018 Budget and 2019 Draft Budget (CERN/SPC/1107-CERN/FC/6232-CERN/3362, p. 30 and 31)**

	Variations between 2018 Probable Revenues and Expenses and Revised 2018 Budget (2018 prices)	Variations between Final 2019 Budget (2019 prices) and 2019 Draft Budget (2018 prices)
<b>Details concerning Projects (new, updates, carry-forward and reprofiling)</b>	<b>-0.6</b>	<b>5.4</b>
<b>LHC machine and areas: spares, reliability and consolidation</b>	<b>6.2</b>	<b>3.8</b>
<b>LHC computing</b>	<b>-1.5</b>	<b>1.5</b>
<b>Non-LHC physics &amp; scientific support (NA62, ISOLDE, electronics investment)</b>	<b>0.3</b>	<b>-0.2</b>
<b>Knowledge transfer and medical applications</b>	<b>0.4</b>	<b>0.0</b>
<b>PS complex, SPS complex, accelerator support and services</b>	<b>1.3</b>	<b>6.3</b>
<b>East Area renovation</b>	<b>-1.2</b>	<b>-1.9</b>
<b>Infrastructure and services</b>	<b>-0.9</b>	<b>-2.2</b>
- including infrastructure consolidation and buildings	1.7	-1.5
<b>LHC upgrades</b>	<b>-5.7</b>	<b>-6.2</b>
<i>LHC injectors upgrade</i>	-3.3	3.2
<i>HL-LHC construction</i>	0.0	0.0
<i>LHC detectors upgrade (phase I) and consolidation</i>	-0.9	-0.6
<i>HL-LHC detectors, including R&amp;D (phase II)</i>	-1.5	-8.9
<b>Preparation for the future</b>	<b>0.0</b>	<b>5.7</b>
<i>Linear collider studies (CLIC, ILC, detector R&amp;D)</i>	1.4	-1.4
<i>Future Circular Collider study</i>	-0.9	5.9
<i>Proton-driven plasma wakefield acceleration (AWAKE)</i>	-0.5	0.5
<i>Physics Beyond Colliders study</i>	0.0	0.7
<b>Diversity activities</b>	<b>0.6</b>	<b>-1.4</b>
<i>CERN Neutrino Platform</i>	-0.4	0.3
<i>Superconducting RF studies</i>	-0.6	0.2
<i>Superconducting magnet R&amp;D (SCM)</i>	-0.7	-0.1
<i>Other R&amp;D (FAIR, ITER, ESS, EU, detectors, etc.)</i>	2.2	-1.7

### Comments on Figure 1:

Figure 1 shows the variations for 2018 and 2019 with respect to the Revised 2018 Budget and the 2019 Draft Budget approved in June 2018. Details of the carry-forward and reprofiling for projects are shown in the

second table. The totals for the 2018 Probable Revenues and Expenses as well as the Final 2019 Budget in 2019 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)	2018 Probable Revenues (2018 prices)	Final 2019 Budget (2019 prices)	Variation of Final 2019 Budget with respect to 2018 Probable Revenues
<b>REVENUES</b>	<b>1 267.9</b>	<b>1 292.6</b>	<b>1.95 %</b>
Member States' contributions	1 122.9	1 143.5	1.83 %
Associate Member States' contributions	25.3	27.7	9.42 %
Contributions anticipated from new Associate Member States		0.5	
Special contributions to HL-LHC	2.4	16.0	566.04 %
EU contributions	17.8	9.0	-49.64 %
Additional contributions	3.1	2.0	-35.10 %
<i>for HIE-ISOLDE, ELENA, AWAKE, FAIR</i>	3.1	2.0	-35.10 %
Personnel paid from team accounts	12.7	12.4	-2.05 %
Personnel on detachment	0.5	0.2	-69.16 %
Internal taxation	33.0	33.2	0.39 %
Knowledge transfer	1.9	2.1	9.21 %
Other revenues	48.2	46.2	-4.15 %
<i>Sales and miscellaneous</i>	27.4	25.6	-6.64 %
<i>SCOAP3 revenues</i>	8.8	8.8	
<i>OpenLab revenues</i>	1.9	1.7	-9.57 %
<i>Financial revenues</i>	2.0	2.0	
<i>In-kind<sup>1</sup></i>	2.0	2.0	
<i>Housing fund</i>	6.0	6.0	

<sup>1</sup> Theoretical interest on the FIPOI loan.

**Comments on Figure 2:**

The **Member States' contributions** for 2019 total 1,143.5 MCHF, corresponding to the 2018 total indexed by 1.83%, in line with the cost-variation index for 2019<sup>5</sup> submitted to the Council for approval in December 2018.

The **Associate Member States' contributions** include the contributions from Cyprus, Serbia and Slovenia as Associate Members in the pre-stage to Membership, and from India, Lithuania, Pakistan, Turkey and Ukraine as Associate Members. It is assumed that Serbia will become a Member State in 2019.

In accordance with the Council's resolution on Greece's contribution (CERN/3258/RA), in 2019 Greece will pay 85% of its contribution for 2019 plus an annual instalment 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 have to be compensated on terms to be determined by the Council in 2019.

Conservative assumptions are made for additional contributions from **new Associate Member States**, i.e. only countries at an advanced stage of negotiations are included. Therefore, it is assumed that only Croatia will become an Associate Member and that the process will be completed in the first half of 2019.

The external contributions to various projects, such as HIE-ISOLDE, ELENA, AWAKE and FAIR, will decrease in 2019 as these projects approach completion.

**EU** contributions might seem low in 2019 but are likely to increase thanks to ongoing efforts to obtain approval and financial support for new proposals. It should be noted that these possible additional contributions would also add to expenses and would thus have no impact on the budget balance.

The heading **other revenues** corresponds to a conservative assumption based on the budget out-turn in the years 2012 to 2017.

A conservative approach is maintained with regard to sales and miscellaneous. In the past, this heading proved to be significantly higher than expected and was therefore adjusted upwards to about 7 MCHF per annum, which is still conservative. This heading also includes about 18 CHF of revenues (offset by the same amount of expenses), corresponding to materials expenditure recharged to teams and collaborations, as agreed with the External Auditors.

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

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

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<sup>5</sup> CERN/FC/6274-CERN/3394



## 2. OVERVIEW OF EXPENSES

**Figure 3: Overview of expenses and budget balances**

Explanations are provided in Chapter III  
"Expenses for the 2019 Financial Year"

(in MCHF, rounded off)	2018 Probable Expenses (2018 prices)	Final 2019 Budget (2019 prices)	Variation of Final 2019 Budget with respect to 2018 Probable Expenses
<b>EXPENSES</b>	<b>1 294.2</b>	<b>1 304.5</b>	<b>0.80 %</b>
<b>Running of scientific programmes and support</b>	<b>1 019.3</b>	<b>1 015.0</b>	<b>-0.42 %</b>
<b>Scientific programmes</b>	<b>518.8</b>	<b>566.3</b>	<b>9.15 %</b>
<i>LHC (machine, detectors, computing, including spares and consolidation)</i>	262.9	300.4	14.28 %
<i>Non-LHC physics and scientific support</i>	83.7	87.8	4.87 %
<i>Other accelerators and areas (including consolidation)</i>	172.2	178.1	3.42 %
<b>Infrastructure and services</b>	<b>298.0</b>	<b>309.5</b>	<b>3.86 %</b>
<i>General infrastructure and services (incl. admin, international relations, safety)</i>	263.4	283.8	7.76 %
<i>Infrastructure consolidation, buildings and renovation</i>	34.7	25.7	-25.76 %
<b>Centralised expenses</b>	<b>202.5</b>	<b>139.2</b>	<b>-31.25 %</b>
<i>Centralised personnel expenses</i>	36.3	36.4	0.06 %
<i>Internal taxation</i>	33.0	33.2	0.39 %
<i>Internal mobility, personnel on detachment or paid from team accounts</i>	13.5	12.7	-5.87 %
<i>Budget amortisation of staff benefit accruals</i>	17.3		-100.00 %
<i>Energy and water, insurance and postal charges, miscellaneous</i>	91.0	46.6	-48.77 %
<i>Interest, bank and financial expenses, in-kind <sup>1</sup></i>	11.4	10.4	-8.10 %
<b>Projects and studies</b>	<b>274.9</b>	<b>289.5</b>	<b>5.33 %</b>
<b>LHC upgrades</b>	<b>200.4</b>	<b>227.6</b>	<b>13.54 %</b>
<i>LHC injectors upgrade (LIU)</i>	52.8	60.2	14.10 %
<i>HL-LHC construction</i>	107.4	118.2	10.02 %
<i>LHC detectors upgrade (Phase I) and consolidation</i>	24.4	29.5	20.62 %
<i>HL-LHC detectors, including R&amp;D (Phase II)</i>	15.8	19.7	24.68 %
<b>Preparation for the future</b>	<b>39.8</b>	<b>33.6</b>	<b>-15.42 %</b>
<i>Linear collider studies (CLIC, ILC, detector R&amp;D)</i>	17.7	14.0	-20.55 %
<i>Future Circular Collider study</i>	16.1	14.4	-10.69 %
<i>Proton-driven plasma wakefield acceleration (AWAKE)</i>	3.6	3.2	-10.06 %
<i>Physics Beyond Colliders study</i>	2.4	2.0	-17.32 %
<b>Scientific diversity activities</b>	<b>34.7</b>	<b>28.3</b>	<b>-18.35 %</b>
<i>CERN Neutrino Platform</i>	12.0	13.6	13.60 %
<i>R&amp;D (incl. EU support) for accelerators</i>	22.8	14.8	-35.12 %
<b>BALANCE</b>			
Annual balance	-26.3	-11.9	
Capital repayment allocated to the budget (Fortis, FIPOI 1, 2 and 3)	-26.8	-27.7	
Recapitalisation Pension Fund	-60.0	-60.0	
Annual balance allocated to budget deficit	-113.1	-99.6	
<b>-Cumulative balance <sup>2</sup></b>	<b>- 165.1</b>	<b>-377.8</b>	

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

<sup>2</sup> The cumulative balance of -165.1 MCHF is the accumulated budget deficit as stated in the Financial Statements for 2017 (CERN/FC/6225, page 19).

### 3. SCALE OF CONTRIBUTIONS OF THE MEMBER STATES FOR 2019

The percentage distribution of the scale of contributions for 2019 (document CERN/FC/6233-CERN/3363) was approved by the Council in June 2018,

and the cost-variation index proposals are submitted to the Council for approval in document CERN/FC/6274-CERN/3394 in December 2018.

**Figure 4 (1/2): Scale of Contributions of the Member States for the Financial Year 2019**

	Country	Currency	Net National Income at factor cost			Exchange rates			Net National Income at factor cost	2019 Theoretical Contribution	2019 Due Contribution
			in millions in national currency			national currencies in Swiss francs			in MCHF		
			2014	2015	2016	2014	2015	2016	Average 2014 to 2016	in %	in %
Member States	Austria	EUR	230 182	235 391	243 458	1.2146	1.0681	1.0902	265 468	2.15800%	2.15800%
	Belgium	EUR	286 937	291 275	303 590	1.2146	1.0681	1.0902	330 193	2.68415%	2.68415%
	Bulgaria	BGN	59 850	63 447	67 471	0.6210	0.5461	0.5574	36 475	0.29651%	0.29651%
	Czech Republic	CZK	2 672 082	2 859 312	2 993 484	0.0441	0.0392	0.0403	116 842	0.94981%	0.94981%
	Denmark	DKK	1 438 268	1 464 593	1 475 175	0.1629	0.1433	0.1464	220 044	1.78874%	1.78874%
	Finland	EUR	141 032	144 919	148 798	1.2146	1.0681	1.0902	162 765	1.32312%	1.32312%
	France	EUR	1 500 933	1 543 350	1 562 669	1.2146	1.0681	1.0902	1 725 005	14.02259%	14.02259%
	Germany	EUR	2 181 255	2 264 911	2 337 981	1.2146	1.0681	1.0902	2 539 078	20.64020%	20.64020%
	Greece	EUR	121 506	119 311	116 421	1.2146	1.0681	1.0902	133 978	1.08911%	1.08911%
	Hungary	HUF	19 958 878	20 607 638	21 485 456	0.0039	0.0034	0.0035	74 941	0.60919%	0.60919%
	Israel	ILS	793 306	839 908	880 182	0.2566	0.2477	0.2566	212 313	1.72590%	1.72590%
	Italy	EUR	1 107 403	1 122 754	1 171 689	1.2146	1.0681	1.0902	1 273 858	10.35521%	10.35521%
	Netherlands	EUR	483 933	499 278	506 457	1.2146	1.0681	1.0902	557 725	4.53375%	4.53375%
	Norway	NOK	2 421 290	2 381 847	2 370 003	0.1454	0.1195	0.1173	304 928	2.47876%	2.47876%
	Poland	PLN	1 249 820	1 304 414	1 331 752	0.2902	0.2554	0.2499	342 861	2.78712%	2.78712%
	Portugal	EUR	116 462	118 911	123 462	1.2146	1.0681	1.0902	134 351	1.09215%	1.09215%
	Romania	RON	478 132	510 507	546 438	0.2733	0.2403	0.2428	128 669	1.04595%	1.04595%
	Slovakia	EUR	51 961	53 520	55 636	1.2146	1.0681	1.0902	60 309	0.49025%	0.49025%
	Spain	EUR	741 162	773 306	805 291	1.2146	1.0681	1.0902	868 022	7.05616%	7.05616%
	Sweden	SEK	2 572 492	2 724 868	2 847 992	0.1336	0.1142	0.1152	327 684	2.66375%	2.66375%
Switzerland	CHF	496 142	514 931	509 542	1.0000	1.0000	1.0000	506 872	4.12037%	4.12037%	
United Kingdom	GBP	1 336 512	1 372 313	1 427 759	1.5065	1.4705	1.3352	1 979 232	16.08920%	16.08920%	
<b>Total Member States</b>								<b>12 301 613</b>	<b>100.0000%</b>	<b>100.0000%</b>	
Associate Member States in the pre-stage to Membership	Cyprus <sup>1</sup>	EUR	12 599	12 709	13 059	1.2146	1.0681	1.0902	14 371	0.11682%	0.08002%
	Serbia <sup>2</sup>	RSD	2 796 950	2 896 505	3 054 899	0.0104	0.0088	0.0089	27 208	0.22117%	0.22117%
	Slovenia <sup>3</sup>	EUR	24 224	24 260	25 564	1.2146	1.0681	1.0902	27 734	0.22545%	0.08567%
<b>Total Associate Member States in the pre-stage to Membership</b>								<b>69 313</b>	<b>0.5634%</b>	<b>0.3869%</b>	
Associate Member States	India <sup>4</sup>	INR	89 058 912	98 010 124	108 835 017	0.0157	0.0148	0.0148	1 485 872	12.07867%	1.20787%
	Lithuania <sup>5</sup>	EUR	27 295	26 693	27 605	1.2146	1.0681	1.0902	30 585	0.24863%	0.02486%
	Pakistan <sup>6</sup>	PKR	18 011 116	19 658 581	20 841 067	0.0088	0.0093	0.0094	179 039	1.45541%	0.14554%
	Turkey <sup>7</sup>	TRY	1 495 196	1 693 349	1 869 760	0.4181	0.3550	0.3267	612 346	4.97777%	0.49778%
	Ukraine <sup>8</sup>	UAH	1 135 616	1 424 477	1 709 803	0.0774	0.0441	0.0385	72 198	0.58689%	0.05869%
<b>Total Associate Member States</b>								<b>2 380 040</b>	<b>19.3474%</b>	<b>1.9347%</b>	

<sup>1</sup> Cyprus became an Associate Member State in the pre-stage to Membership on 1st April 2016 and will pay the statutory minimum contribution of 1 MCHF in 2019 as provided for in Council Resolution CERN/3034/RA.

<sup>2</sup> Serbia became an Associate Member State in the pre-stage to Membership on 15 March 2012 as provided for in Council Resolution CERN/2999/RA. It is assumed that Serbia will become a Member State in 2019. Serbia will pay 100% of its theoretical Member State contribution in 2019.

<sup>3</sup> Slovenia became an Associate Member State in the pre-stage to Membership on 4 July 2017 and will pay 38% of its theoretical contribution in 2019 as provided for in Council Resolution CERN/3288/RA.

<sup>4</sup> India became an Associate Member State on 16 January 2017 and will pay 10% of its theoretical contribution in 2019, as provided for in Council Resolution CERN/3274/RA.

<sup>5</sup> Lithuania became an Associate Member State on 8 January 2018 and will pay the statutory minimum contribution of 1 MCHF in 2019, as provided for in Council Resolution CERN/3315/RA/Rev.

<sup>6</sup> Pakistan became an Associate Member State on 31 July 2015 and will pay 10% of its theoretical contribution in 2019 as provided for in Council Resolution CERN/3142/RA.

<sup>7</sup> Turkey became an Associate Member State on 6 May 2015 and will pay 10% of its theoretical contribution in 2019 as provided for in Council Resolution CERN/3106/RA.

<sup>8</sup> Ukraine became an Associate Member State on 5 October 2016 and will pay the statutory minimum contribution of 1 MCHF in 2019 as provided for in Council Resolution CERN/3082/RA.

Figure 4 (2/2): Scale of Contributions of the Member States for the Financial Year 2019

		2019 Annual contribution	2019 Annual contribution	2019 Annual contribution
	Country	in CHF 2018 prices	in CHF 2019 prices	in %
	Member States	Austria	24 232 700	24 676 150
Belgium		30 140 950	30 692 550	2.68415%
Bulgaria		3 329 600	3 390 550	0.29651%
Czech Republic		10 665 650	10 860 850	0.94981%
Denmark		20 086 200	20 453 800	1.78874%
Finland		14 857 650	15 129 550	1.32312%
France		157 463 000	160 344 550	14.02259%
Germany		231 773 700	236 015 150	20.64020%
Greece		12 229 850	12 453 650	1.08911%
Hungary		6 840 750	6 965 950	0.60919%
Israel		19 380 550	19 735 200	1.72590%
Italy		116 281 100	118 409 050	10.35521%
Netherlands		50 910 550	51 842 200	4.53375%
Norway		27 834 600	28 343 950	2.47876%
Poland		31 297 250	31 870 000	2.78712%
Portugal		12 264 000	12 488 450	1.09215%
Romania		11 745 200	11 960 150	1.04595%
Slovakia		5 505 150	5 605 900	0.49025%
Spain		79 235 300	80 685 300	7.05616%
Sweden	29 911 900	30 459 300	2.66375%	
Switzerland	46 268 600	47 115 300	4.12037%	
United Kingdom	180 669 450	183 975 700	16.08920%	
<b>Total Member States</b>		<b>1 122 923 700</b>	<b>1 143 473 250</b>	<b>100.0000%</b>
Associate Member States in the pre-stage to Membership	Cyprus	1 000 000	1 000 000	
	Serbia	2 483 550	2 529 000	
	Slovenia	1 000 000	1 000 000	
<b>Total Associate Member States in the pre-stage to Membership</b>		<b>4 483 550</b>	<b>4 529 000</b>	
Associate Member States	India	13 563 450	13 811 650	
	Lithuania	1 000 000	1 000 000	
	Pakistan	1 634 300	1 664 200	
	Turkey	5 589 700	5 692 000	
	Ukraine	1 000 000	1 000 000	
<b>Total Associate Member States</b>		<b>22 787 450</b>	<b>23 167 850</b>	
<b>Grand TOTAL</b>		<b>1 150 194 700</b>	<b>1 171 170 100</b>	

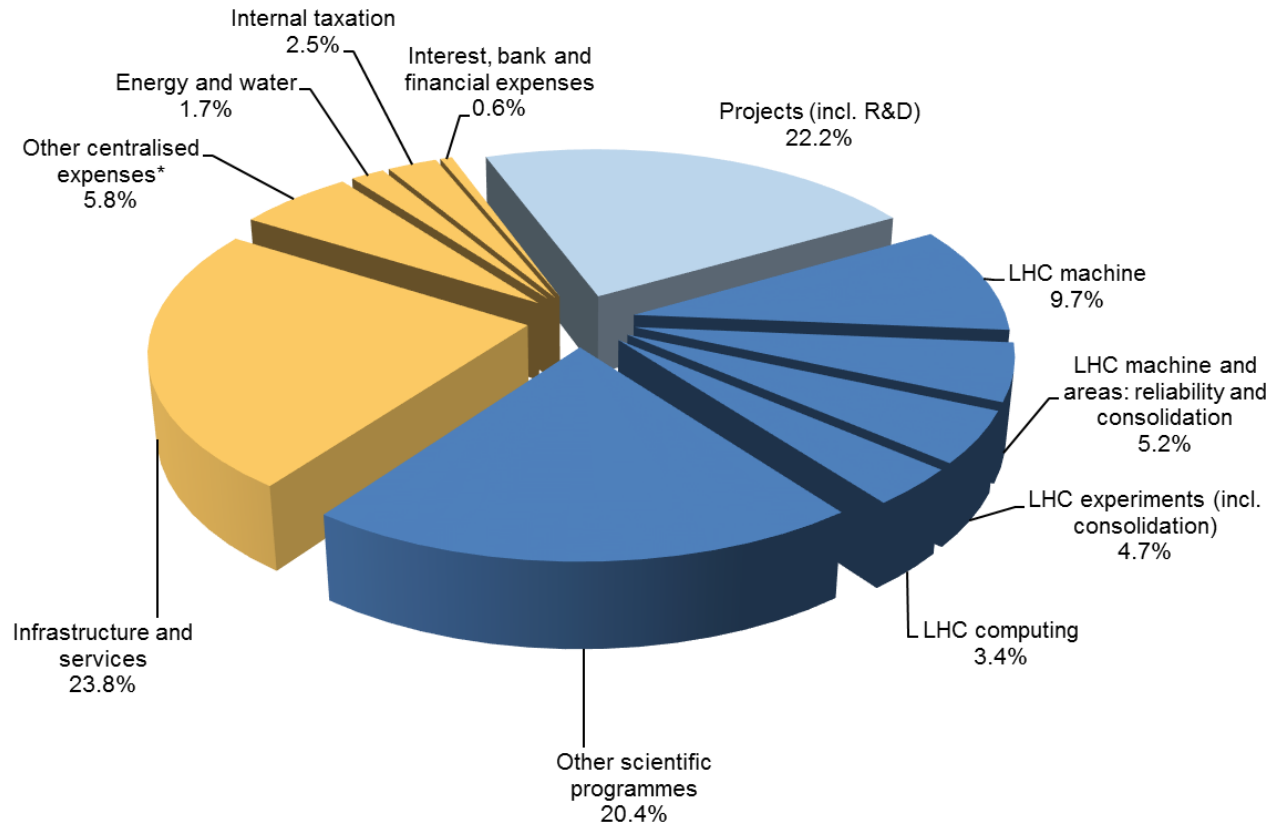


**III. EXPENSES FOR THE 2019 FINANCIAL YEAR**



## 1. EXPENSES BY SCIENTIFIC AND NON-SCIENTIFIC PROGRAMMES

**Figure 5: Final 2019 Budget (Personnel, Materials and Interest & financial costs)**



\* Including centralised personnel expenses, internal mobility and personnel on detachment (2.7%), Personnel paid from team accounts (1%), Insurance, postal charges, miscellaneous (1.9%), In-kind (theoretical interest on the FIPOI loan) (0.2%)

## 2. SCIENTIFIC PROGRAMME

Figure 6: Scientific programme

2018 Probable Expenses (2018 prices) (a)				Fact sheet	Activity	Final 2019 Budget (2019 prices) (b)				Variation of Final 2019 Budget with respect to 2018 Probable Expenses
FTE	kCHF					FTE	kCHF			
Personnel	Personnel	Materials	Total			Personnel	Personnel	Materials	Total	
816.8	147 850	115 010	262 860		<b>LHC programme</b>	778.2	142 430	157 955	300 385	14.3 %
314.7	54 355	45 950	100 305	1	<b>LHC machine</b>	299.1	50 715	76 270	126 985	26.6 %
312.8	54 015	41 840	95 855		LHC machine and experimental areas	291.5	49 665	73 175	122 840	28.2 %
1.9	340	4 110	4 450		Spares	7.6	1 050	3 095	4 145	-6.9 %
112.9	17 705	45 740	63 445	1	<b>LHC machine and areas: reliability and consolidation</b>	110.1	18 530	48 795	67 325	6.1 %
281.8	53 010	12 105	65 115		<b>LHC experiments</b>	263.8	50 230	11 725	61 955	-4.9 %
83.6	16 195	3 540	19 735	2	ATLAS detector	75.5	14 545	3 140	17 685	-10.4 %
80.6	14 955	3 975	18 930	3	CMS detector	80.2	15 210	3 335	18 545	-2.0 %
45.0	8 350	1 890	10 240	4	ALICE detector	39.3	7 295	1 675	8 970	-12.4 %
44.0	8 420	1 610	10 030	5	LHCb detector	42.2	8 365	1 420	9 785	-2.4 %
28.6	5 090	1 090	6 180	6	Common items, other experiments (incl. Totem, LHCf, MoEDAL)	26.7	4 815	2 155	6 970	12.8 %
107.4	22 780	11 215	33 995	7	<b>LHC computing</b>	105.1	22 955	21 165	44 120	29.8 %
876.4	156 560	99 345	255 905		<b>Other programmes</b>	795.1	148 980	116 885	265 865	3.9 %
33.7	5 510	2 205	7 715	8	<b>Non-LHC physics (experimental programme)</b>	29.3	4 505	2 660	7 165	-7.1 %
65.8	10 390	1 635	12 025	9	<b>Theory</b>	56.8	9 400	1 425	10 825	-10.0 %
31.5	5 475	3 390	8 865	10	<b>Knowledge transfer and medical applications</b>	27.6	5 290	2 840	8 130	-8.3 %
191.5	35 145	19 945	55 090	11	<b>Scientific support (associates, computing, tech. support)</b>	199.7	38 970	22 680	61 650	11.9 %
220.3	38 785	26 770	65 555	12.a	<b>SPS complex</b>	179.2	32 820	34 120	66 940	2.1 %
125.8	21 475	25 820	47 295	12.b	<b>SPS complex</b>	105.6	18 240	27 140	45 380	-4.0 %
198.5	38 110	15 825	53 935	12.c	<b>Accelerator support and services</b>	188.3	38 090	17 555	55 645	3.2 %
9.3	1 670	3 755	5 425	13	<b>East Area renovation</b>	8.5	1 665	8 465	10 130	86.7 %
1 693.2	304 410	214 355	518 765		<b>Grand Total</b>	1 573.3	291 410	274 840	566 250	9.2 %
	24.01%	16.91%	40.92%		% of total revenues		22.54%	21.26%	43.81%	

**Comments on Figure 6:**

Overall, the budget for the operation of the scientific programme is slightly increasing due to the fact that 2019 will be a shutdown year.

The Long Shutdown activities are earmarked under the **LHC machine and experimental areas** heading, which explains the increase in the materials between 2018 and 2019.

Under **LHC machine and areas: reliability and consolidation**, the electrical network consolidation is ramping down in 2019, which is compensated by expenses for the LHC machine consolidation and the consolidation of the LHC dipole diodes.

The heading **Knowledge transfer and medical applications** remains almost constant, with the remaining costs of the MEDICIS project included in the 2018 budget.

The overall budget for the **PS and SPS complexes** is stable, with the redeployment of resources from operation to consolidation activities.

The **East Area renovation** project started in 2016 and is ramping up in 2018 and 2019, prior to completion during LS2.

### 3. INFRASTRUCTURE AND SERVICES

Figure 7: Infrastructure, services and centralised expenses

2018 Probable Expenses (2018 prices) (a)				Activity		Final 2019 Budget (2019 prices) (b)				Variation of Final 2019 Budget with respect to 2018 Probable Expenses
FTE	kCHF			Fact sheet		FTE	kCHF			
Personnel	Personnel	Materials	Total			Personnel	Personnel	Materials	Total	
1 011.1	261 665	238 885	500 550		<b>Infrastructure, services and centralised expenses</b>	998.4	247 785	200 980	448 765	-10.3 %
222.3	38 525	42 625	81 150	14	General facilities & logistics (site maintenance, transport)	223.9	40 310	45 230	85 540	5.4 %
229.5	40 860	27 800	68 660	15	Informatics	220.7	40 235	29 655	69 890	1.8 %
179.3	28 575	18 105	46 680	16	Safety, health and environment	177.9	29 280	24 095	53 375	14.3 %
204.0	39 050	8 305	47 355	17	Administration	208.2	41 100	13 470	54 570	15.2 %
69.2	12 190	7 315	19 505	18	International relations	71.8	12 420	7 985	20 405	4.6 %
15.0	2 310	32 370	34 680	19	Infrastructure consolidation, buildings and renovation	14.0	2 255	23 490	25 745	-25.8 %
91.8	100 155	102 365	202 520	20	<b>Centralised expenses</b>	81.8	82 185	57 055	139 240	-31.2 %
	36 335		36 335		Centralised personnel expenses		36 355		36 355	0.1 %
	33 035		33 035		Internal taxation		33 165		33 165	0.4 %
1.9	800		800		Internal mobility and personnel on detachment	0.8	270		270	-66.3 %
90.0	12 655		12 655		Personnel paid from team accounts	81.0	12 395		12 395	-2.1 %
	17 330		17 330		Budget amortisation of staff benefit accruals					-100.0 %
		67 245	67 245		Energy and water			22 215	22 215	-67.0 %
		23 765	23 765		Insurance, postal charges, miscellaneous			24 405	24 405	2.7 %
		9 310	9 310		Interest, bank and financial expenses			8 390	8 390	-9.9 %
		2 045	2 045		In-kind			2 045	2 045	
	20.64%	18.84%	39.48%		% of total revenues		19.17%	15.55%	34.72%	

**Comments on Figure 7:**

The overall budget allocation to **Infrastructure, services and centralised expenses** is decreasing in 2019, mainly due to reduced energy consumption as this will be a shutdown year.

The budget for the **General facilities & logistics** heading increases in 2019 mainly due to site security measures and the refurbishment of the hostel in Building 38.

The increase in the materials heading for **Safety, health and environment** from 2018 to 2019 is mainly due to the implementation of the first recommendations from the CERN Environmental Protection Steering (CEPS) board and the refurbishment work for the radioactive waste treatment centre and storage.

The decrease of the materials heading for **Infrastructure consolidation, buildings and renovation** is due to the completion of a number of projects in 2018: Building 107 (surface treatment), Building 311 (magnetic measurements), the polymer lab, and a flexible storage building in Prévessin.

The **Centralised expenses** are expected to remain constant, with the exception of reduced energy consumption in 2019 and the end of the budget amortisation of staff benefit accruals.

## 4. PROJECTS (CONSTRUCTION, R&amp;D)

Figure 8: Projects

2018 Probable Expenses (2018 prices) (a)				Activity	Final 2019 Budget (2019 prices) (b)				Variation of Final 2019 Budget with respect to 2018 Probable Expenses	
FTE	kCHF				Fact sheet	FTE	kCHF			
Personnel	Personnel	Materials	Total			Personnel	Personnel	Materials		Total
<b>692.8</b>	<b>119 025</b>	<b>155 850</b>	<b>274 875</b>		<b>Projects</b>	<b>676.1</b>	<b>123 460</b>	<b>166 055</b>	<b>289 515</b>	<b>5.3 %</b>
<b>486.9</b>	<b>85 880</b>	<b>114 530</b>	<b>200 410</b>		<b>LHC upgrades</b>	<b>508.4</b>	<b>94 855</b>	<b>132 695</b>	<b>227 550</b>	<b>13.5 %</b>
141.5	22 420	30 375	52 795	<b>21</b>	LHC injectors upgrade (LIU)	152.1	26 430	33 810	60 240	14.1 %
222.2	36 715	70 705	107 420	<b>22</b>	HL-LHC construction	228.6	40 730	77 455	118 185	10.0 %
77.2	17 055	7 360	24 415	<b>23</b>	LHC detectors upgrade (Phase 1) and consolidation	65.7	14 065	15 385	29 450	20.6 %
46.1	9 690	6 090	15 780	<b>23</b>	HL-LHC detectors, including R&D (Phase 2)	62.0	13 630	6 045	19 675	24.7 %
<b>142.5</b>	<b>22 660</b>	<b>17 090</b>	<b>39 750</b>		<b>Preparation for the future</b>	<b>114.1</b>	<b>19 485</b>	<b>14 135</b>	<b>33 620</b>	<b>-15.4 %</b>
53.3	9 755	7 905	17 660	<b>24,25</b>	Linear collider studies (CLIC, ILC, detector R&D)	47.9	9 285	4 745	14 030	-20.6 %
68.0	10 015	6 070	16 085	<b>26</b>	Future Circular Collider study	48.5	7 790	6 575	14 365	-10.7 %
8.9	1 435	2 145	3 580	<b>27</b>	Proton-driven plasma wakefield acceleration (AWAKE)	7.9	1 215	2 005	3 220	-10.1 %
12.3	1 455	970	2 425	<b>28</b>	Physics Beyond Colliders study	9.8	1 195	810	2 005	-17.3 %
<b>63.4</b>	<b>10 485</b>	<b>24 230</b>	<b>34 715</b>		<b>Scientific diversity activities</b>	<b>53.6</b>	<b>9 120</b>	<b>19 225</b>	<b>28 345</b>	<b>-18.3 %</b>
17.9	3 115	8 835	11 950	<b>29</b>	CERN Neutrino Platform	16.4	2 940	10 635	13 575	13.6 %
8.5	1 360	4 375	5 735	<b>30</b>	Superconducting RF studies	8.9	1 440	2 360	3 800	-33.7 %
7.4	1 215	1 845	3 060	<b>31</b>	Superconducting magnet R&D (SCM)	7.6	1 335	4 265	5 600	83.0 %
29.6	4 795	9 175	13 970	<b>32</b>	Other R&D (FAIR, ITER, ESS, EU, etc.)	20.8	3 405	1 965	5 370	-61.6 %
	9.39%	12.29%	21.68%		% of total revenues		9.55%	12.85%	22.40%	

**Comments on Figure 8:**

The variations in the budget allocations from 2018 to 2019 reflect the status of the various projects.

**LIU** now includes the connection of Linac 4 to the Booster and has a peak of expenses in 2018-2019.

The budget allocation of the **LHC detectors upgrade Phase I** is aligned with the LS2 activities of the experiments and reaches its maximum in 2019.

The budgets for **HL-LHC** construction and the **LHC detectors upgrade Phase II** are ramping up.

The budget for **Linear collider studies** has been ramping down since 2017 as R&D work (e.g. CTF3) and design studies for the ESPP update near completion. The budgets for the **Future Circular Collider** and **Physics beyond colliders** studies are also decreasing, reflecting the approaching completion of the work for the ESPP. Part of the 2019 materials budget will be converted into personnel budget (for fellows).

After a peak in 2015 and 2016, the **AWAKE** budget is ramping down as construction is essentially complete and operation is well advanced.

The CERN **Neutrino Platform** started in 2015, with peak expenses in 2016 and 2017. The construction of the cryostat for the first module of the DUNE experiment continues in 2019 and beyond.

The budget for **Superconducting RF studies** is reduced in 2019 due to the redeployment of resources to the LHC Injectors Upgrade and the HL-LHC project.

The budget for **Superconducting magnet R&D** in 2018 and 2019 will be used mainly to upgrade the test facilities.

The heading for **Other R&D** covers projected expenses for 2018 and 2019 for EU projects (with corresponding revenues), final tests of the FAIR magnets (externally funded), as well as some other R&D activities mainly in support of other research institutions. The decrease from 2018 to 2019 is explained by the completion of a large EU 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 2018 and 2019, broken down by programme and project.

(in KCHF, rounded off)

2018 Probable Expenses (2018 prices)			Programme	Project	Final 2019 Budget (2019 prices)		
Personnel	Materials	Total			Personnel	Materials	Total
<b>24 710</b>	<b>57 365</b>	<b>82 075</b>		<b>Sub-total LHC programme</b>	<b>25 435</b>	<b>71 050</b>	<b>96 485</b>
340	3 180	3 520		LHC machine and experimental areas	1 050	2 160	3 210
340	2 935	3 275		LHC spares	1 050	2 160	3 210
	245	245		LHC magnet repair			
<b>17 700</b>	<b>45 740</b>	<b>63 440</b>		<b>LHC machine and areas: reliability and consolidation</b>	<b>18 530</b>	<b>51 070</b>	<b>69 600</b>
530	330	860		Collimation system enhancements	410	220	630
1 245	13 945	15 190		Electrical network 2025	1 030	10 560	11 590
975	280	1 255		Experimental areas consolidation	895	220	1 115
10 060	14 085	24 145	<b>LHC programme</b>	LHC consolidation	10 665	19 845	30 510
3 140	6 585	9 725	Included in Figure 6	Radiation to electronics (R2E)	2 390	6 390	8 780
190	255	445		POPS repair, spare and consolidation	85	1 030	1 115
440	9 445	9 885		Spares and consolidation in the framework of HL-LHC	565	4 810	5 365
				IT Long shutdown work		2 275	2 275
1 120	815			LHC diodes consolidation	2 500	5 720	
	40	40		LHC detectors		10	10
5 020	7 365	12 385		LHC Computing Grid	5 065	17 340	22 405
1 650	1 040	2 690		EU projects	790	470	1 260
<b>24 530</b>	<b>45 665</b>	<b>70 195</b>		<b>Sub-total Other programmes</b>	<b>23 220</b>	<b>56 305</b>	<b>79 525</b>
360	150	510		AEGS	265	75	340
630		630		NA62	630	85	715
	955	955		PCB Workshop machine		475	475
	100	100		ISOLDE nano laboratory		200	200
1 130	1 310	2 440		SM18 infrastructure upgrade	1 515	2 060	3 575
135	3 100	3 235		TE infrastructure consolidation	140	630	770
355	45	400		Cryogenic infrastructure upgrade			
	65	65		EP Safety and consolidation		400	400
	70	70		Timing development			
1 040	1 535	2 575		AD consolidation	1 130	6 220	7 350
1 670	3 755	5 425		East area renovation	1 665	8 465	10 130
1 110	1 995	3 105		North area consolidation	1 560	1 060	2 620
	25	25	<b>Other programmes</b>	66/18 kV loop PS consolidation			
			Included in Figure 6	SPS electrical substations consolidation	1 200	5 680	6 880
1 130	7 720	8 850		Accelerator consolidation	11 140	22 660	33 800
10 645	15 950	26 595		PS and SPS spares	320	115	435
355	1 415	1 770		Computer security hardening	105	220	325
140	60	200		Bldg 513 exhibition for WWW invention		100	100
	1 340	1 340		General accelerator developments		2 405	2 405
135	1 030	1 165		ELENA	110	1 120	1 230
	540	540		HIE-ISOLDE		80	80
	565	565		Investment in new mechanical technologies		1 065	1 065
220	455	675		MEDICIS			
4 790	1 865	6 655		EU projects	2 755	1 510	4 265
685	1 620	2 305		KT projects	685	1 680	2 365

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

(in kCHF, rounded off)

2018 Probable Expenses (2018 prices)			Programme	Project	Final 2019 Budget (2019 prices)		
Personnel	Materials	Total			Personnel	Materials	Total
9 675	59 605	69 280		<b>Sub-total Infrastructure, services and centralised expenses</b>	7 555	53 805	61 360
	405	405		Manufacturing facilities		300	300
	405	405		CAD upgrade		300	300
50	2 205	2 255		<b>General facilities &amp; logistics (site maintenance, transport)</b>	125	3 185	3 310
15	1 455	1 470		Globe car park and "Esplanade des Particules"	15		15
	50	50		Building 38 (hotel renovation)		1 685	1 685
35	700	735		Security improvement measures	110	1 500	1 610
1 720	12 100	13 820		<b>Informatics</b>	25	13 695	13 720
	1 545	1 545		Computing network consolidation		2 120	2 120
	55	55		2nd Network Hub			
	9 865	9 865		SCOAP3		9 810	9 810
1 470	595	2 065		Openlab		1 705	1 705
205	30	235		AIS re-engineering	25	60	85
	10	10		IT HPC clusters			
45		45		Projects with external collaborations			
	475	475		<b>Administration</b>		260	260
	70	70		HR projects			
	315	315		FAP projects		150	150
	90	90		Risk management		110	110
3 550	10 560	14 110		<b>Safety, health and environment</b>	3 310	16 285	19 595
55		55		Radio infrastructure upgrade for firefighters			
1 380	1 940	3 320		Ramses II light	1 120	2 945	4 065
	475	475		Emergency		675	675
1 575	5 020	6 595		Radioactive waste management	1 515	6 540	8 055
485	2 195	2 680		Fire safety projects	620	3 075	3 695
55	55	110		HLD Instrumentation upgrade	55	200	255
	760	760		CEPS		2 370	2 370
	115	115		Other safety projects		480	480
315	1 015	1 330		<b>International relations</b>	345	2 670	3 015
	35	35	Included in Figure 7	New Microcosm exhibition			
100	530	630		IdeaSquare building	95	-95	
	95	95		Visit point		20	20
	170	230		Alumni		50	50
	60	60		High School Students Internship Programme	60	215	275
				Open Days 2019		2 075	2 075
155	185	340		Other outreach projects	190	405	595
2 310	32 440	34 750		<b>Infrastructure consolidation, buildings and renovation</b>	2 255	17 020	19 275
130	5 140	5 270		Building 107 (surface treatment)	40		40
	830	830		Building 311 (magnetic measurements)			
	60	60		Building 774 (Prévessin main building)			
	30	30		Building 156 (extension)			
	270	270		Renovation Globe of Science and Innovation		1 200	1 200
	5	5		LHCb building			
	370	370		Polymer laboratory consolidation			
	555	555		Replacement of water-cooled cables		345	345
2 180	14 690	16 870		Surface and technical infrastructure consolidation (roofs, facades, heating, etc.)	2 215	12 500	14 715
	2 810	2 810		Cooling tower Point 18		1 290	1 290
	6 660	6 660		Flexible storage building Prévessin			
	560	560		Cooling towers rejection systems			
				Library reading room		100	100
	450	450		Building 599 (material science) relocation		1 000	1 000
	10	10		Building 937 (offices & laboratories in Prévessin)		490	490
				Renovation of Building 60 (Main Building)		95	95
1 620	395	2 015		<b>EU projects</b>	1 450	390	1 840
110	10	120		<b>KT projects</b>	45		45

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

(in kCHF, rounded off)

2018 Probable Expenses (2018 prices)			Programme	Project	Final 2019 Budget (2019 prices)		
Personnel	Materials	Total			Personnel	Materials	Total
<b>114 325</b>	<b>151 685</b>	<b>266 010</b>		<b>Sub-total Projects</b>	<b>119 135</b>	<b>164 370</b>	<b>283 505</b>
<b>85 170</b>	<b>112 145</b>	<b>197 315</b>		<b>LHC upgrades</b>	<b>94 460</b>	<b>131 035</b>	<b>225 495</b>
22 385	30 375	52 760		LHC Injectors Upgrade	26 395	33 810	60 205
36 040	68 320	104 360		LHC luminosity upgrade project (HL-LHC) <sup>1</sup>	40 370	75 795	116 165
22 335	2 770	25 105		LHC detectors upgrade	22 750	7 810	30 560
4 320	3 980	8 300		R&D for HL-LHC detectors	4 505	3 175	7 680
90	5 815	5 905		LHC Host Lab	440	6 140	6 580
	885	885		SXA5 CMS building		4 305	4 305
<b>21 565</b>	<b>16 605</b>	<b>38 170</b>		<b>Preparation for the future</b>	<b>18 810</b>	<b>13 760</b>	<b>32 570</b>
6 985	7 240	14 225		CLIC	6 680	4 075	10 755
2 365	340	2 705		Linear collider detector R&D	2 425	455	2 880
9 620	5 910	15 530	<b>Projects</b>	Future Circular Collider study	7 560	6 465	14 025
1 140	2 145	3 285	Included in Figure 8	Proton plasma wakefield acceleration (AWAKE)	950	1 955	2 905
1 455	970	2 425		Physics Beyond Colliders study	1 195	810	2 005
<b>3 680</b>	<b>14 515</b>	<b>18 195</b>		<b>Scientific diversity activities</b>	<b>3 370</b>	<b>16 670</b>	<b>20 040</b>
2 385	8 595	10 980		CERN Neutrino Platform	2 285	10 380	12 665
	1 815	1 815		SM18 extension for superconducting RF		855	855
	600	600		Superconducting RF infrastructure upgrade		1 300	1 300
970	1 930	2 900		Superconducting magnets R&D	900	3 680	4 580
190	1 440	1 630		Upgrade of Building 180 test facility (FAIR)	50	230	280
135	135	270		Shape memory alloy rings as UHV connectors	135	225	360
<b>3 725</b>	<b>8 265</b>	<b>11 990</b>		<b>EU projects</b>	<b>2 150</b>	<b>2 120</b>	<b>4 270</b>
<b>185</b>	<b>155</b>	<b>340</b>		<b>KT projects</b>	<b>345</b>	<b>785</b>	<b>1 130</b>
<b>173 240</b>	<b>314 320</b>	<b>487 560</b>		<b>Grand Total</b>	<b>175 345</b>	<b>345 530</b>	<b>520 875</b>

<sup>1</sup> The in-kind part of the budget will depend on the signature of the US collaboration agreement.

**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	2018 Probable Expenses (2018 prices)	Final 2019 Budget (2019 prices)	Variation of Final 2019 Budget with respect to 2018 Probable Expenses
	(a)	(b)	(b)-(a)/(a)
<b>Materials expenses</b>	<b>597 875</b>	<b>631 540</b>	<b>5.6%</b>
Goods, consumables and supplies	267 920	318 085	18.7%
Electricity, heating gas and water	67 245	22 215	-67.0%
Industrial services	155 425	176 785	13.7%
<i>Service contracts</i>	148 625	169 985	14.4%
<i>Temporary labour</i>	6 800	6 800	
Associated Members of the Personnel	47 885	53 275	11.3%
Other overheads	59 400	61 180	3.0%
<i>Consultancy</i>	14 885	14 885	
<i>Contributions to collaborations</i>	6 075	7 855	29.3%
<i>Miscellaneous</i> <sup>1</sup>	38 440	38 440	
<b>Interest and financial costs</b>	<b>11 215</b>	<b>10 335</b>	<b>-7.8%</b>
Fortis bank	8 205	7 325	-10.7%
In-kind (FIPOI interest 0%) <sup>2</sup>	2 045	2 045	
Other financial expenses	965	965	
<b>TOTAL MATERIALS</b>	<b>609 090</b>	<b>641 875</b>	<b>5.4%</b>

<sup>1</sup> Including insurance and postal charges, handling and transport, bank charges, depreciation of current assets.

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

### Comments on Figure 10:

The electricity consumption in 2019 is lower than in 2018 because 2019 is a long shutdown year. The increase of the headings industrial services,

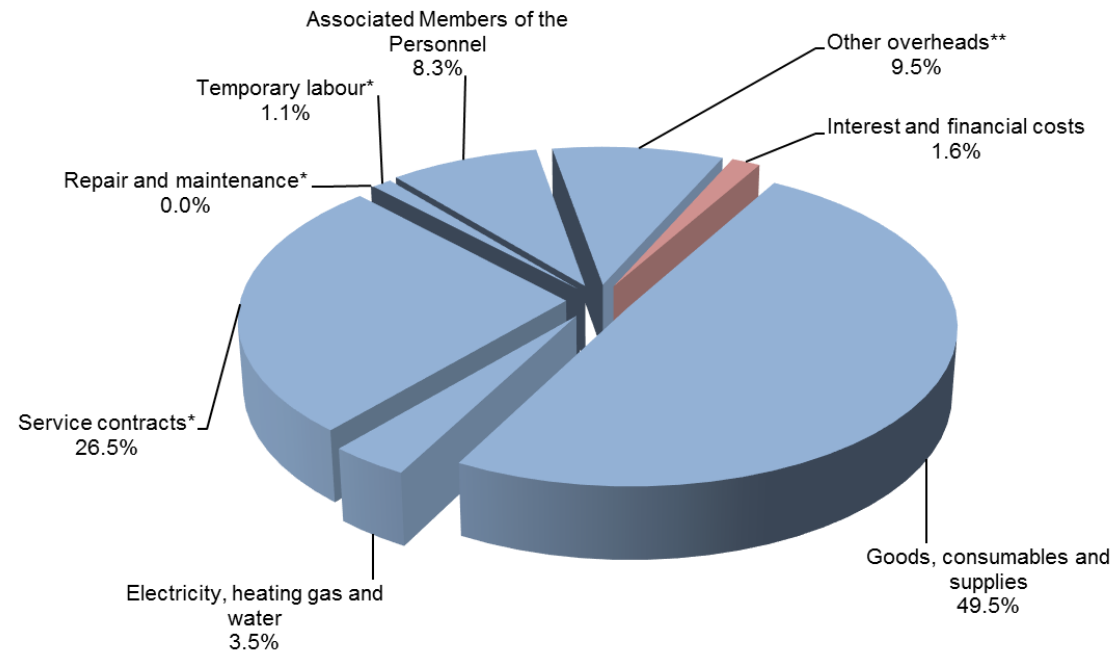
associated members of personnel and contributions to collaborations in 2019 is explained by the need for additional resources for LS2 activities.

**Figure 11: Breakdown of materials expenses by nature**

Materials expenses: 98.4%
Interest and financial costs: 1.6%

\* Total for industrial services: 26.5% + 0% + 1.1% = 27.6%.

\*\* Including insurance and postal charges, consultancy, CERN contributions to collaborations, 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	2018 Probable Expenses (2018 prices)	Final 2019 Budget (2019 prices)	Variation of Final 2019 Budget with respect to 2018 Probable Expenses
	(a)	(b)	(b)-(a)/(a)
<b>Staff members <sup>1</sup></b>	<b>512 575</b>	<b>524 260</b>	<b>2.3%</b>
<b>Basic salaries (including saved leave)</b>	<b>329 205</b>	<b>336 705</b>	<b>2.3%</b>
Basic salaries	330 715	338 275	
Performance payment (non-pensionable)	4 325	4 400	
Contribution to saved leave schemes	-5 835	-5 970	2.3%
<b>Allowances</b>	<b>68 810</b>	<b>70 380</b>	<b>2.3%</b>
Non-resident allowances / international indemnities	19 620	20 065	
Family and child allowances	25 410	25 990	
Special allowances	2 985	3 055	
Overtime	2 655	2 715	
Various allowances	18 140	18 555	
<b>Social contributions</b>	<b>114 560</b>	<b>117 175</b>	<b>2.3%</b>
Pension Fund	88 330	90 345	
Health insurance	26 230	26 830	
<b>Fellows <sup>2</sup></b>	<b>85 625</b>	<b>68 795</b>	<b>-19.7%</b>
<b>Apprentices</b>	<b>200</b>	<b>80</b>	<b>-60.0%</b>
<b>Centralised personnel budget</b>	<b>69 370</b>	<b>69 520</b>	<b>0.2%</b>
<b>Centralised personnel expenses</b>	<b>36 335</b>	<b>36 355</b>	<b>0.1%</b>
Installation, recruitment and termination of contracts	6 375	6 120	
Installation and removal costs	2 310	2 500	
Termination allowances	4 065	3 620	
Additional periods of membership of the Pension Fund for shift work		135	
Contribution to health insurance for pensioners incl. long-term care	29 960	30 100	
Contribution to health insurance for pensioners	27 145	27 200	
Contribution to long-term care for pensioners	2 815	2 900	
<b>Internal taxation</b>	<b>33 035</b>	<b>33 165</b>	<b>0.4%</b>
<b>TOTAL PERSONNEL</b>	<b>667 770</b>	<b>662 655</b>	<b>-0.8%</b>
Budget amortisation of staff benefit accruals	17 330		-100.0%
<b>TOTAL PERSONNEL incl bud. amort. of staff benefit accruals</b>	<b>685 100</b>	<b>662 655</b>	

<sup>1</sup> Including staff paid from team accounts (8.9 MCHF in 2018 and 10.0 MCHF in 2019).

<sup>2</sup> Including fellows paid from team accounts (3.8 MCHF in 2018 and 2.4 MCHF in 2019).

**Comments on Figure 12:**

The total CERN personnel budget for 2019 amounts to 662.7 MCHF. This includes 12.4 MCHF for staff and fellows paid from team accounts.

The 2019 budget for staff members totals 524.3 MCHF. This amount has increased by 2.3% compared to the 2018 Probable Expenses, partly due to the completion of the recruitment process for the additional LD posts that the Management decided to create in December 2016 (FC/6065/RA), and partly due to the net impact of advancement costs with respect to staff arrivals and departures.

The increase in allowances and social contributions is directly linked to the number of staff members. The percentage of the Organization’s contribution to the CERN Health Insurance Scheme is stable with respect to 2016, following yearly increases since 2011.

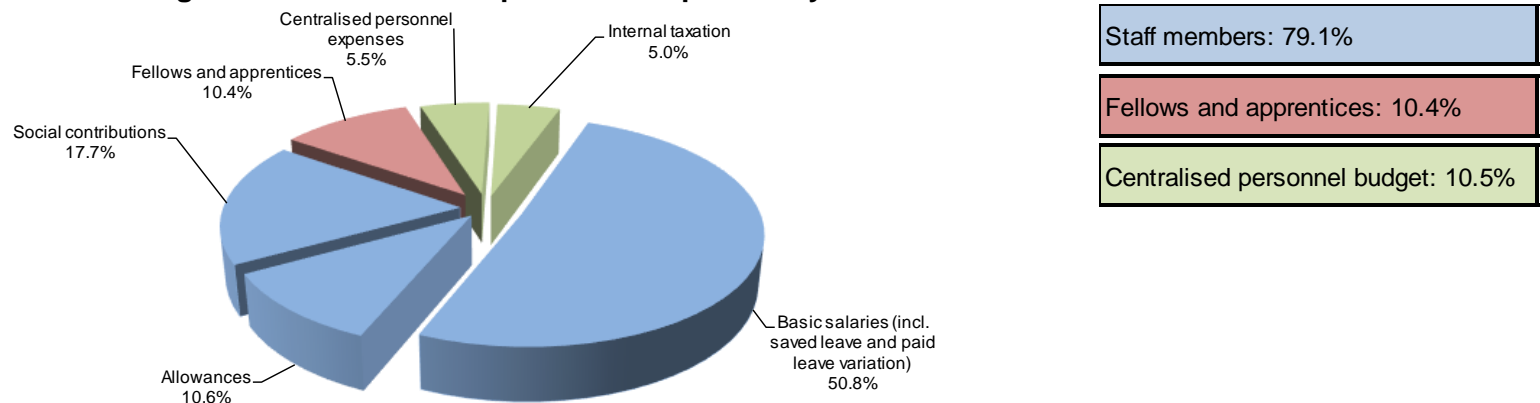
Additional fellowship funding will be made available during 2019, through materials-to-personnel transfers for the GET fellows programme and the Technical Trainees programme, which will be executed once the arrivals are confirmed.

As of August 2016, apprentices are classed as associate members of the personnel (materials expenses). However, the apprentices who currently hold a contract will remain employed members of the personnel for the duration of their internships, and the personnel component of this heading will end in 2019.

The centralised personnel expenses total 36.3 MCHF. The heading “installation, recruitment and termination of contracts”, which relates to personnel taking up appointment and leaving the Organization, is expected to decrease, mainly as a result of the possibility of extending limited-duration contracts beyond 5 years up to a maximum of 8. The contribution to pensioners’ health insurance and long-term care amounts to 30.1 MCHF, which represents an increase linked to more beneficiaries. The Organization’s contribution to the CERN Health Insurance Scheme for staff members has now stabilised.

Internal taxation is expected to amount to 33.2 MCHF and is also shown as revenues for the Organization. The exact amount will depend on the staff positions in the salary structure.

**Figure 13: Breakdown of personnel expenses by nature**



### 3. ENERGY AND WATER

**Figure 14: Expenses – Energy and water**

(in MCHF, rounded off)

Nature	2018 Probable Expenses (2018 prices)	Final 2019 Budget (2019 prices)	Variation of Final 2019 Budget with respect to 2018 Probable Expenses
	(a)	(b)	(b)-(a)/(a)
<b>Energy and water (baseload)</b>	<b>13.18</b>	<b>11.49</b>	<b>-12.8%</b>
Electricity	6.18	4.49	-27.3%
Heating oil and gas	3.90	3.90	
Water and waste water	3.10	3.10	0.0%
<b>Energy for basic programmes</b>	<b>54.07</b>	<b>10.72</b>	<b>-80.2%</b>
Experimental areas <sup>1</sup>	14.93	3.07	-79.4%
Data handling	1.67	1.46	-13.1%
Accelerators	16.27	1.71	-89.5%
<i>AD</i>	0.62	0.11	-82.5%
<i>PS</i>	3.36	0.51	-84.9%
<i>SPS</i>	12.29	1.09	-91.1%
LHC	21.19	4.49	-78.8%
<b>TOTAL ENERGY</b>	<b>67.25</b>	<b>22.22</b>	<b>-67.0%</b>

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

#### Comments on Figure 14:

The electricity consumption in 2019 reflects that this will be a long shutdown year. It is lower than in 2018, which is a normal operation year.

**V. FINANCIAL POSITION OF THE ORGANIZATION**

## Statement of cash flow

**Figure 15: Estimated statement of cash flow for Financial Years 2018 and 2019**

(in MCHF, rounded off, estimated as at 26/11/2018)

	<b>2018</b> (2018 prices)	<b>2019</b> (2019 prices)
<b>(A) START OF THE YEAR</b>		
Liquid assets brought forward	142	* 99
Outstanding short-term loans	0	* 0
<b>(1) CASH INFLOW</b>	<b>1 392</b>	<b>1 364</b>
Contributions	1 138	1 172
Teams and collaborations	120	120
EU, KT, other revenues	134	72
<b>(2) CASH OUTFLOW</b>	<b>1 436</b>	<b>1 463</b>
Payments	1 220	1 247
Teams and collaborations	120	120
Interest, bank and financial expenses	9	8
Capital repayment Fortis and FIPOI	27	28
Recapitalisation of the Pension Fund	60	60
<b>(3) VARIATION OF CASH POSITION</b>	<b>-44</b>	<b>-99</b>
<b>(B) END OF THE YEAR</b>		
Estimated liquid assets	<b>99</b>	<b>0</b>
Estimated outstanding short-term loans	<b>0</b>	<b>0</b>

\* For 2019, this is an estimated amount.

### Comments on Figure 15:

The statement of cash flow is an estimate based on the assumption that Member States' contributions will be paid by the expected instalment dates. Under these assumptions, no short-term loans will be required in

2018. Depending on the progress on the long shutdown activities, some short term loans might be needed towards the end of 2019.

### **Short-term bank loans and overdrafts**

No short-term bank loans and overdrafts are expected in 2018 and will most likely not be needed in 2019, provided that Member States' contributions are settled on the scheduled instalment dates and by the end of the year at the latest. Depending on the progress on the long shutdown activities, some short-term loans might be needed towards the end of 2019.

### **Loan from BNP Paribas Fortis bank**

The outstanding amount owed to BNP Paribas Fortis Bank amounts to 222.7 MCHF at the end of 2018 and will reduce to 196.1 MCHF by the end of 2019. The loan will be fully reimbursed by the end of June 2026.

### **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.

### **EIB credit facility**

No drawdowns on the EIB credit facility will be needed in 2018 or 2019. Therefore, the period over which additional funds might be needed has been reduced from seven to six years. It is likely that the first EIB tranche will have to be drawn down in 2020.