



# Final 2018 Budget

CERN/3334

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Council - 14 December 2017

# Comparison of Final 2018 Budget and 2018 Draft Budget

- Final 2018 Budget for information
  - Is based on the same scientific and non-scientific objectives as set out in the approved 2018 Draft Budget
  - Applies the overall Cost-Variation Index for 2018 (CERN/3333) of 0.27% to
    - Member States' and Associate Member States' contributions, in-line with the Corridor principle (CERN/FC/5644)
    - 2018 expenses
  - Implements the re-profiling and carry-forward for multi-annual projects
    - in-line with the financial rules and detailed in the Final 2018 Budget document

# Revenues

Member States' contributions indexed by 0.27%

Slovenia's accession to Associate Member States in the pre-stage to Membership status

Lower contributions for projects approaching completion (ELENA, AWAKE, HIE-ISOLDE, FAIR)

Contracts for the OpenLab phase 6 are in the process of being signed

(in MCHF, rounded off)	2017 Probable Revenues (2017 prices)	Final 2018 Budget (2018 prices)	Variation of Final 2018 Budget with respect to 2017 Probable Revenues
<b>REVENUES</b>	<b>1,240.8</b>	<b>1,230.2</b>	<b>-0.85 %</b>
Member States' contributions	1,119.9	1,122.9	0.27 %
Associate Member States' contributions	22.3	24.3	9.11 %
Contributions anticipated from new Associate Member States		1.0	
EU contributions	18.2	11.9	-34.41 %
Additional contributions	7.7	1.5	-80.50 %
<i>for LINAC4, HIE-ISOLDE, ELENA, AWAKE, CLIC, FAIR</i>	7.7	1.5	-80.50 %
Personnel paid from team accounts	12.5	11.3	-9.57 %
Personnel on detachment	0.9	0.4	-52.20 %
Internal taxation	32.4	33.0	1.90 %
Knowledge transfer	2.2	1.7	-22.74 %
Other revenues	24.7	22.1	-10.58 %
<i>Sales and miscellaneous</i>	7.4	6.5	-12.13 %
<i>SCOAP3 revenues</i>	4.9	4.7	-5.06 %
<i>OpenLab revenues</i>	2.3	0.8	-63.56 %
<i>Financial revenues</i>	2.0	2.0	
<i>In-kind</i>	2.0	2.0	
<i>Housing fund</i>	6.0	6.0	

# Expenses

Ramping up of the electrical network consolidation, higher expenses for Radiation to Electronics.

From 2018 gas consumables for fixed target experiments, higher expenses for PS and SPS access systems, East Area renovation project

Completion of projects: building 107 (surface treatment, ending in 2018), building 311 (magnetic measurements, ending in 2017), the extension of building 156 (mechanical workshop, ending in 2017)

Ramping up of the HL-LHC construction and HL-LHC detectors, peak expenses for LIU.

ELENA, HIE-ISOLDE, AWAKE approach completion.

(in MCHF, rounded off)	2017 Probable Expenses (2017 prices)	Final 2018 Budget (2018 prices)	Variation of Final 2018 Budget with respect to 2017 Probable Expenses
<b>EXPENSES</b>	<b>1,209.0</b>	<b>1,268.8</b>	<b>4.94 %</b>
<b>Running of scientific programmes and support</b>	<b>961.9</b>	<b>994.0</b>	<b>3.33 %</b>
<b>Scientific programmes</b>	<b>484.6</b>	<b>519.9</b>	<b>7.30 %</b>
<i>LHC (machine, detectors, computing, including spares and consolidation)</i>	251.6	267.2	6.16 %
<i>Non-LHC physics and scientific support</i>	78.1	81.8	4.73 %
<i>Other accelerators and areas (including consolidation)</i>	154.8	170.9	10.43 %
<b>Infrastructure and services</b>	<b>300.1</b>	<b>290.9</b>	<b>-3.07 %</b>
<i>General infrastructure and services (incl. admin, international relations, safety)</i>	253.3	259.6	2.48 %
<i>Infrastructure consolidation, buildings and renovation</i>	46.8	31.3	-33.11 %
<b>Centralised expenses</b>	<b>177.2</b>	<b>183.2</b>	<b>3.34 %</b>
<i>Centralised personnel expenses</i>	36.3	36.3	
<i>Internal taxation</i>	32.4	33.0	1.90 %
<i>Internal mobility, personnel on detachment, paid from team accounts</i>	13.6	11.7	-14.01 %
<i>Budget amortisation of staff benefit accruals</i>	17.3	17.3	
<i>Energy and water, insurance and postal charges, miscellaneous</i>	65.4	73.4	12.32 %
<i>Interest, bank and financial expenses, in-kind <sup>1</sup></i>	12.2	11.3	-6.95 %
<b>Projects and studies</b>	<b>247.1</b>	<b>274.8</b>	<b>11.20 %</b>
<b>LHC upgrades</b>	<b>158.5</b>	<b>200.6</b>	<b>26.55 %</b>
<i>LINAC4</i>	0.9	0.0	-97.14 %
<i>LHC injectors upgrade (LIU)</i>	49.4	55.6	12.57 %
<i>HL-LHC construction</i>	71.8	103.0	43.50 %
<i>LHC detectors upgrade (Phase 1) and consolidation</i>	21.7	24.7	13.78 %
<i>HL-LHC detectors, including R&amp;D (Phase 2)</i>	14.8	17.3	17.10 %
<b>Preparation for the future</b>	<b>44.1</b>	<b>35.8</b>	<b>-19.01 %</b>
<i>Linear collider studies (CLIC, ILC, detector R&amp;D)</i>	19.9	17.2	-13.92 %
<i>Future Circular Collider study</i>	16.0	13.8	-13.63 %
<i>Proton-driven plasma wakefield acceleration (AWAKE)</i>	7.3	3.0	-58.51 %
<i>Physics Beyond Colliders study</i>	0.9	1.7	87.63 %
<b>Scientific diversity activities</b>	<b>44.4</b>	<b>38.4</b>	<b>-13.55 %</b>
<i>ELENA</i>	4.7	0.9	-81.23 %
<i>HIE-ISOLDE</i>	3.5	1.6	-55.04 %
<i>CERN Neutrino Platform</i>	16.1	15.9	-1.27 %
<i>R&amp;D (incl. EU support) for accelerators, medical applications</i>	20.1	20.0	-0.37 %

# Variations

0.27% indexation of contributions

Some savings allocated to the general infrastructure and various safety initiatives.

Significantly less carry-forward than in previous years (as a result of the thorough planning exercise done for MTP 2017):

- Focus on the LHC operation and priority given to LHC upgrades resulted in some delays for other projects.
- Re-profiling in both directions of some building projects.

Transfer of materials budget to fellows and technical trainees.

(in MCHF, rounded off)	Variations between 2017 Probable Revenues and Expenses and Revised 2017 Budget (2017 prices)	Variations between Final 2018 Budget (2018 prices) and 2018 Draft Budget (2017 prices)
<b>Variations on REVENUES</b>	<b>5.7</b>	<b>6.6</b>
<b>Indexation to 2018 prices</b>		<b>3.1</b>
<i>Member States' contributions</i>		3.0
<i>Associated Member States' contributions</i>		0.1
Serbia as a Member State in 2019 instead of 2018		-0.6
New Associate Member States Contributions	0.5	
EU contributions	4.1	0.0
Additional contributions (HIE-ISOLDE)	-0.3	0.3
Personnel paid from team accounts	-1.1	1.4
Personnel on detachment	-0.1	-0.3
Internal taxation update	2.3	2.8
Sales and miscellaneous	0.4	
<b>Variations on EXPENSES</b>	<b>-20.5</b>	<b>-3.1</b>
<b>Indexation to 2018 prices</b>		<b>3.3</b>
<i>Personnel</i>		2.1
<i>Energy</i>		2.0
<i>Materials</i>		-0.8
<b>Operation</b>	<b>-11.1</b>	<b>0.8</b>
2016&2017 revenues allocated to future commitments	-2.3	1.7
Re-profiling of car-pool activity	-1.9	-0.8
Re-profiling of operations to cover existing commitments in future	-1.7	2.7
Operational savings (allocated to new and existing projects)	-2.8	-0.6
Operations variation	-2.4	-2.2
<b>Projects (new, updates, carry-forward and re-profiling)</b>	<b>-12.6</b>	<b>-10.7</b>
<b>Reallocation of materials budget to fellows and technical trainees</b>	<b>-1.3</b>	<b>0.6</b>
Materials	-8.1	-11.3
Fellows & technical trainees	6.8	11.9
<b>Re-profiling of additional LD posts (FC/6065/RA)</b>	<b>-0.6</b>	<b>-0.9</b>
<b>Internal taxation update</b>	<b>2.3</b>	<b>2.8</b>
<b>Expenses corresponding to EU contributions</b>	<b>4.1</b>	<b>0.0</b>
<b>Personnel paid from team accounts</b>	<b>-1.1</b>	<b>1.4</b>
<b>Personnel on detachment</b>	<b>-0.1</b>	<b>-0.3</b>
<b>Variations on BALANCE</b>	<b>26.2</b>	<b>9.6</b>
<b>IMPACT ON CUMULATIVE BALANCE</b>	<b>26.2</b>	<b>35.8</b>

# Budget balance

BALANCE	2017	2018	
Annual balance	31.8	-38.6	
Capital repayment allocated to the budget (Fortis, FIPOI 1, 2 and 3)	-25.9	-26.8	
Recapitalisation Pension Fund	-60.0	-60.0	
Annual balance allocated to budget deficit	-54.2	-125.3	
<b>-Cumulative balance -</b>	<b>-118.4</b>	<b>-297.9</b>	

The anticipated cumulative budget deficit projected for the end 2018 has reduced from -334 MCHF to -298 MCHF, 36 MCHF lower than estimated in MTP 2017.

# Expenses trend

[MCHF]	2016	2017 (PRE)	2018 Budget
Expenses	1153.2	1209.0	1268.8

- « CERN's back in business »
- Number of contract adjudications also shows an increase of about 50-60 MCHF in expenses between 2016 financial statements, probable revenues and expenses in 2017 and Final 2018 Budget
- Towards «cruising» speed of the construction of HL-LHC, LIU and detector upgrades



# Estimated cash-flow

(in MCHF, rounded off, estimated as at 21/11/2017)

	2017 (2017 prices)	2018 (2018 prices)
<b>(A) START OF THE YEAR</b>		
Liquid assets brought forward	155	* 118
Outstanding short-term loans	0	* 0
<b>(1) CASH INFLOW</b>	<b>1,304</b>	<b>1,281</b>
Contributions	1,130	1,130
Teams and collaborations	116	116
EU, KT, other revenues	58	35
<b>(2) CASH OUTFLOW</b>	<b>1,341</b>	<b>1,399</b>
Payments	1,123	1,181
Teams and collaborations	122	122
Interest, bank and financial expenses	10	9
Capital repayment Fortis and FIPOI	26	27
Recapitalisation of the Pension Fund	60	60
<b>(3) VARIATION OF CASH POSITION</b>	<b>-37</b>	<b>-118</b>
<b>(B) END OF THE YEAR</b>		
Estimated liquid assets	<b>118</b>	<b>0</b>
Estimated outstanding short-term loans	<b>0</b>	<b>0</b>

No short-term loans are required in 2017.

Under the assumption that MS contributions will be paid by the scheduled instalment dates, no short-term loans are expected to be required in 2018.



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# Carry-forward and re-profiling of projects

Re-profiling of consolidation activities linked to contract adjudications and available personnel.

Re-profiling in both directions of some building projects, such as building 311 (magnetic measurement lab), building 107 (surface treatment lab), polymer laboratory and flexible storage building in Prévessin, taking into account contract adjudications and contractual deliverables

Focus on LHC operation and priority given to LHC upgrades coupled with personnel shortages resulting in some delays for other projects.

	Variations between 2017 Probable Revenues and Expenses and Revised 2017 Budget (2017 prices)	Variations between Final 2018 Budget (2018 prices) and 2018 Draft Budget (2017 prices)
<b>Details for Projects (new, updates, carry-forward and re-profiling)</b>	<b>-12.6</b>	<b>-10.7</b>
<b>LHC machine and areas: spares, reliability and consolidation</b>	<b>-7.0</b>	<b>-1.6</b>
LHC computing	-0.7	1.7
Non-LHC physics & scientific support (NA62, ISOLDE, electronics investm.)	0.0	0.6
Knowledge Transfer	0.5	-0.2
PS complex, SPS complex, accelerator support and services	-1.2	-0.6
East Aera renovation	-1.8	-2.3
Infrastructure and services	8.7	-2.6
- of which infrastructure consolidation and buildings	5.5	-3.0
<b>LHC upgrades</b>	<b>-3.6</b>	<b>-7.3</b>
LINAC4	-0.3	0.0
LHC injectors upgrade	-2.5	-3.6
HL-LHC construction	0.4	-0.6
LHC detectors upgrade (phase 1) and consolidation	-3.7	-2.7
HL-LHC detectors, including R&D (phase 2)	2.5	-0.5
<b>Preparation for the future</b>	<b>-0.5</b>	<b>-0.8</b>
Linear collider studies (CLIC, ILC, detector R&D)	0.2	-1.0
Future circular collider study	0.3	-0.3
Proton-driven plasma wakefield acceleration (AWAKE)	-1.2	0.4
Physics Beyond Colliders study	0.1	0.1
<b>Diversity activities</b>	<b>-6.8</b>	<b>2.4</b>
ELENA	-0.4	0.4
HIE-ISOLDE	-0.4	0.4
CERN Neutrino Platform	-3.5	2.8
Superconducting RF studies	-0.1	0.1
Superconducting magnet R&D (SCM)	-0.1	-3.9
R&D for medical applications	-0.3	0.3
Other R&D (FAIR, ITER, ESS, EU, detectors, etc.)	-2.0	2.3