

# 2019

## CERN Electrical Power Consumption

CERN is powered from the French electrical grid through two 400 kV lines connected to the grid at Bois-Tollet substation, close to CERN's Prévessin site. These lines are owned by RTE, the French utility company operating the French transport grid. CERN has an energy supply contract with EDF.

An additional connection from the Swiss electrical grid is used in case of emergency or during maintenance operations: this line at 130 kV is limited to 60 MVA.

It should be noted that the electrical consumption figures for 2019 reflect the progressive shutdown of the CERN Accelerator complex, followed by the LS2.

2019	CERN	Canton Geneva
Yearly Consumption	428 GWh	2'700 GWh
Peak Power *	82 MW	

CERN	Yearly Consumption [GWh]	Peak Power* [MW]
LHC	253	57
SPS – Prévessin	55	8
PS Complex – Meyrin	120	17
<b>Total CERN</b>	<b>428</b>	<b>82</b>

\* daily-averaged power values

LHC	Yearly Consumption [GWh]	Peak Power* [MW]
Experiments	47	7
RF	0	0
Magnets & Converters	0.3	0.2
LHC Cryogenics	67	35
Cooling	43	6
Ventilation	23	4
General Services	61	9
SM18 Test area**	12	3
<b>Total LHC</b>	<b>253</b>	<b>57</b>

lighting, overhead cranes, local control rooms, buildings (SY, SX, etc.), some redundant circuits for cryogenics.

SPS – Préveessin	Yearly Consumption [GWh]	Peak Power* [MW]
SPS Stable <small>cooling and ventilation included</small>	19	4
SPS Pulsed	0	0.1
Experiments North Area Stable	18	3
Experiments North Area Pulsed	0	0
RF	0.3	0.1
Magnets	0	0
Pumping station <small>in BA6 for the water circuits of the SPS and LHC</small>	2	1
General Services Préveessin <small>the 4 blocs, 867, CCC</small>	16	2
<b>Total SPS</b>	<b>55</b>	<b>8</b>

\* daily-averaged power values

\*\* NEW: a dedicated consumer has been created for the SM18 test area, which was previously divided into two parts (SM18 / SM18 cryo), respectively included in “LHC General Services” and “LHC cryogenics”.

PS Complex – Meyrin	Yearly Consumption [GWh]	Peak Power* [MW]
PS <small>cooling and ventilation included</small>	14	2
PS Booster	2	0.5
Experiments East Hall	1	1
Experiments South Hall	0.5	0.5
AD	3	1
CLEAR <small>previously CTF3</small>	4	1
ISOLDE	3	0.5
West Area <small>180, 272, 35, nToF, SMI2, etc.</small>	20	4
Computer Centre	37	5
Meyrin buildings <small>including fire brigade</small>	35	6
<b>Total PS – Meyrin</b>	<b>120</b>	<b>17</b>

\* daily-averaged power values