

2014

CERN Electrical Power Consumption

CERN is powered from the French electrical grid through an overhead 400 kV line connected to the grid at Bois-Tollot substation, close to CERN's Prévessin site. This overhead line is 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 consumptions figures for 2014 reflect the progressive restart of the CERN Accelerator complex, after LS1. This began in April 2014 with the switch on of PSB followed by the PS in May, the SPS in June and finally the gradual restart of the LHC cryogenic plants between June and October 2014.

2014	CERN	Canton Geneva
Yearly Consumption	647 GWh	3 TWh
Peak Power *	162 MW	

CERN	Peak Power* [MW]	Yearly Consumption [GWh]
LHC	66	303
SPS – Prévessin	79	183
PS Complex – Meyrin	28	161
Total CERN	162	647

* daily-averaged power values

LHC	Peak Power* [MW]	Yearly Consumption [GWh]
Experiments	8	41
RF	3	0.5
Magnets & Converters	1	1.5
LHC+Point18 Cryogenics	38	128
Cooling	5	34
Ventilation	5	22
General Services	20	76
	<small>lighting, overhead cranes, local control rooms, buildings (SY, SX, etc.), some redundant circuits for cryogenics, Atlas</small>	
Total LHC	66	303

SPS – Prévessin	Peak Power* [MW]	Yearly Consumption [GWh]
SPS Stable		48
	<small>cooling and ventilation included</small>	
SPS Pulsed		3
Experiments North Area Stable		35
Experiments North Area Pulsed		12
RF		9
Magnets		62
Pumping station		3
	<small>in BA6 for the water circuits of the SPS and LHC</small>	
General Services Prévessin		11
	<small>the 4 blocs, 867, CCC</small>	
Total SPS	79	183

* daily-averaged power values

PS Complex – Meyrin	Peak Power* [MW]	Yearly Consumption [GWh]
PS <small>cooling and ventilation included</small>		35
PS Booster		15
Experiments East Hall		7
Experiments South Hall		4
AD		9
CTF3		9
ISOLDE		3
SPS West Area <small>180, 272, 35, nToF, SMI2, etc.</small>		17
Computer Centre		31
Meyrin buildings <small>including fire brigade</small>		31
Total PS – Meyrin	28	161

* daily-averaged power values