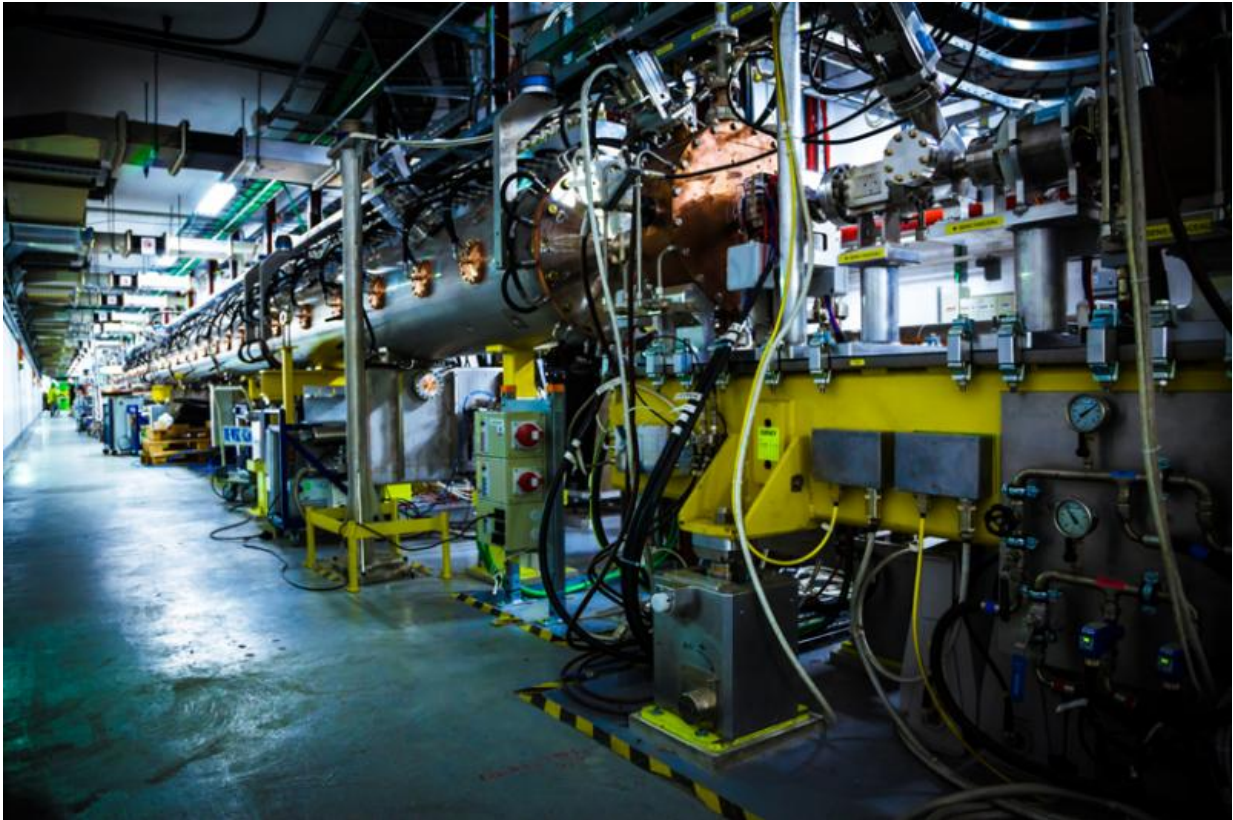


Linac 4 reached its energy goal

November 8 2016



CERN Linac 4 during its installation in 2015. Credit: Federica Piccinni/CERN

CERN's new linear accelerator (Linac 4) has now accelerated a beam up to its design energy, 160 MeV. This important milestone of the accelerator's commissioning phase took place on 25 October.

Linac 4 is scheduled to become the source of proton beams for the

CERN accelerator complex, including the Large Hadron Collider (LHC) after the long shutdown in 2019-2020. It will replace the existing Linac 2 as the first link in the accelerator chain, which is currently accelerating protons at 50 MeV. The new 30-metre-long accelerator will accelerate [hydrogen ions](#) – protons surrounded by two electrons – at 160 MeV, before sending them to the Proton Synchrotron Booster. Here, the ions are stripped of their two electrons to leave only the protons that will be further accelerated before finishing their race in the LHC.

Linac 4 comprises four types of accelerating structures to bring particles in several stages to higher and higher energies. These accelerating structures have been commissioned one by one: in November 2013, the first hydrogen ion beam was accelerated to the energy of 3 MeV and two years after, the Linac 4 accelerator has reached an energy of 50 MeV – the energy Linac 2 runs at. Then, on the 1 July 2016, it crossed the 100 MeV threshold.

Provided by CERN

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