

# Large Hadron Collider sets new record for beam energy -- 3.5 TeV

March 19 2010, By ALEXANDER G. HIGGINS , Associated Press  
Writer

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Operators of the world's largest atom smasher on Friday ramped up their massive machine to three times the energy ever previously achieved, in the run-up to experiments probing the secrets of the universe.

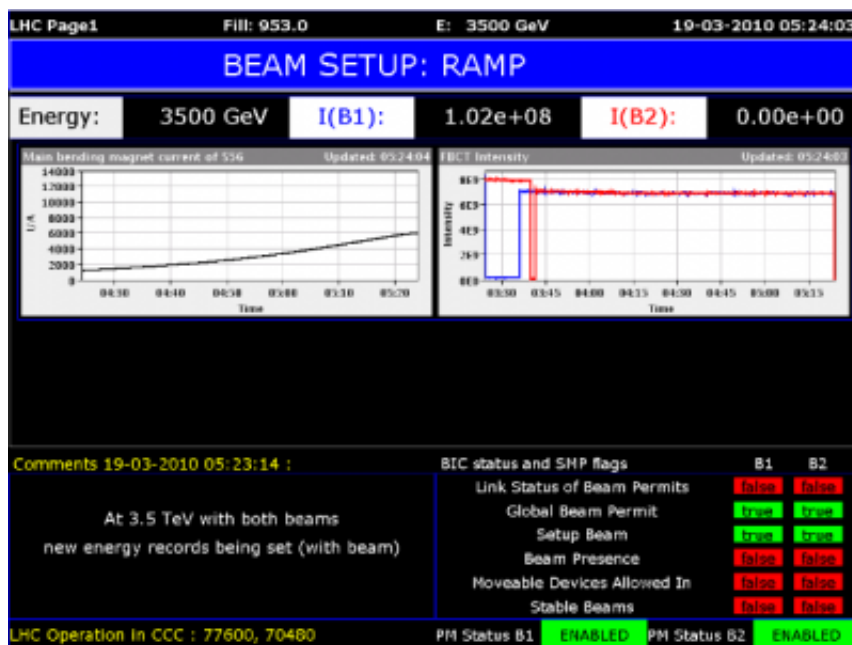
The European Organization for Nuclear Research, or CERN, said beams of protons circulated at 3.5 trillion electron volts in both directions around the 27-kilometer (17-mile) tunnel housing the [Large Hadron Collider](#) under the Swiss-French border at Geneva.

The next major development is expected in a few days when CERN starts colliding the beams in a new round of research to examine the tiniest particles and forces within the atom in hopes of finding out more

about how matter is made up.

The collider in December had [already eclipsed the record](#) of the next most powerful machine, the [Tevatron](#) at [Fermilab](#) outside Chicago, which has been running just shy of a trillion electron volts, or TeV.

The extra energy in Geneva is expected to reveal even more about the unanswered questions of particle physics, such as the existence of [dark energy](#) and matter. Scientists hope also to approach on a tiny scale what happened in the first split seconds after the Big Bang, which they theorize was the creation of the universe some 14 billion years ago.



A screenshot of the main LHC display screen this morning, after the successful ramp in energy

CERN has reported a series of successes since the collider was restarted last year after 14 months of repairs and improvements following a

spectacular failure when scientists initially tried to get the machine going.

CERN improved the machine during a 2 1/2-month winter shutdown to be able to operate at the higher energy.

"Getting the beams to 3.5 TeV is testimony to the soundness of the LHC's overall design, and the improvements we've made since the breakdown in September 2008," said Steve Myers, CERN's director for accelerators and technology.

**More information:** \* Record-breaking LHC collisions offer first glimpse of physics at new energy frontier - [www.physorg.com/news184590515.html](http://www.physorg.com/news184590515.html)

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