Outlines of Alternatives than LHC for Searches of equivalent collision result Particles, etc:

Each year, for cosmic rays with an energy above 5 x 1^19eV, around 25 Cosmic rays are detected by one (Pierre Auger Network) of 11 or so significant cosmic ray detector systems. For proton 'primary' cosmic rays this would imply over 500 x the equivalent to LHC available (nucleon to nucleon) energy for particle production from collision. For the more recently advocated predominantly iron nuclei primary cosmic rays, this would still imply 10 x LHC available energy. For all cosmic ray detectors taken into account, this would then be of potential equivalent scientific worth to having a collider at 7,000TeV (proton cosmic rays) or 140TeV (iron nuclei cosmic rays) with well over 25 annual collisions. The relevant LHC comparison (ie for greater nucleon to nucleon available energy) is for LHC's proton - proton collisions at 14TeV not infact the lead – lead LHC collisions. Clearly, in the cosmic ray - or similar astrophysical detector case, no possible risks from gravitationally capturable micro black holes and their increasing Hawking radiation, or from other slow moving and therefore un-disruptable dangerous emitted particles are credible.

Potentially; state finance and the role of CERN itself >= 1TeV collision energy, could be completely safely diverted to yet further construction of such detectors and further analysis of improvements for detection with them.

The articles and wikipedia quote below, involve explanations of alternative methods for detecting the particles that the LHC is supposed to search for. As the links indicate, all the papers listed here, appear in scientific journals as well:

How Cosmic Ray Detectors could be used to search for:

Higgs particles
http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6TVC-4T2633C-2&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=2cb0be73fe67de97bafaa54be8caf739

Micro black holes

http://arxiv.org/abs/hep-ph/0109287
http://arxiv.org/abs/hep-ph/0112247

Primordial Mini black holes

http://www.ece.vt.edu/swe/mypubs/jcap8_11_017

Quark gluon plasma

http://arxiv.org/abs/hep-ph/0012068

Alternative detectors for Dark Matter ('Supersymmetric' particles are an example):

From http://en.wikipedia.org/wiki/Dark_matter under 'Detection of dark matter' –

'There are also several experiments claiming positive evidence for dark matter detection, such as DAMA/NaI, DAMA/LIBRA[24] and EGRET, but these are so far unconfirmed and difficult to reconcile with the negative results of other experiments. Several searches for dark matter are currently underway, including the Cryogenic Dark Matter Search in the Soudan mine, the PICASSO experiment in the SNOLAB underground laboratory at Sudbury, Ontario (Canada), XENON, DAMA/LIBRA and CRESST experiments at Gran Sasso (Italy) and the ZEPLIN and DRIFT projects at the Boulby Underground Laboratory (UK), and many new technologies are under development, such as the ArDM or MIMAC…

The PAMELA payload (launched 2006) may find evidence of dark matter annihilation…

The Fermi space telescope, launched June 11, 2008, searching gammawave events, may also detect WIMPs. WIMP supersymmetric particle and antiparticle collisions should release a pair of detectable gamma waves. The number of events detected will show to what extent WIMPs comprise dark matter…

In 2014 the LSST will be operational, one of the main goals of the telescope is to discover and learn more about dark matter.'

Further considerations are given here of alternative ways of studying some of what the LHC would study, but with small scale experiments:

http://www.newscientist.com/article/mg20126884.400-desktop-atom-smashers-could-replace-lhc.html
- New Scientist 5 Jan 2009 p.28; also Nature 445, p.741

http://www.newscientist.com/article/mg19426074.000-quantum-quirk-may-reveal-early-universe.html
- http://arxiv.org/abs/0705.3755

CO2 Emmisions implied by operation of LHC

From 'CERN faq: LHC the guide':
'What is the LHC power consumption?

It is around 120 MW, which corresponds more or less to the power consumption for households in the Canton (State) of Geneva.'

The population of the canton of Geneva is 438,000 - hence LHC CO2 emissions would be at the same rate as for an urban population of this population.