will also help in clarifying new laws of physics behind this mechanism, taking particle physics to an entirely new stage. Japan is already playing a major role in research and development on the ILC accelerator and detectors. Working with the Linear Collider Collaboration (LCC) of international scientists, KEK will proceed with development of the ILC superconducting RF cavities and accelerator-related technologies. In addition to R&D, KEK continues to make efforts to promote the ILC project with the Planning Office for the ILC established in February 2014.

KEK issued a KEK-ILC action plan in January 2016. In this plan it was proposed that the ILC project proceed in three phases: pre-preparation phase, preparation phase, and construction phase. The pre-preparation phase is the current phase, in which R&D in KEK has up to now been conducted mainly using general funds of KEK. As development advances, efforts need to be made to obtain external funding as well. The project will enter the main preparation phase when MEXT starts negotiations with other countries for implementing the ILC. At this stage an implementation organization will be set up centering around KEK to prepare for the construction over a period of approximately four years.

3-2. Other research projects carried out using general funds of KEK
The following projects have up to now been conducted mainly using general funds of KEK. They will be continued on the condition that greater efforts are made to obtain external funding.

- Simulation studies with the existing supercomputer (only up to summer of 2017)
- Industrial application of ERL technology
- Participation in CERN LHC/ATLAS
- Research carried out in the Detector Technology Project
- Research in the Japan-US cooperation program
- Projects under the Toshiko Yuasa Laboratory (TYL)
- Small-scale research projects conducted in KEK institutes

4. Projects That Need New Funding
4-1. New light source facility
With the existing light sources deteriorating and losing their competitive edge, it has become urgent to proceed with plans for the next light source facility. The KEK long-term plans have up to now called for a 3 GeV Energy Recovery Linac (ERL). This was made obsolete by the invention of the multi-bend achromat lattice as a synchrotron light source. As an alternative to ERL, a 3 GeV-class storage ring-type high-brightness