

The European Strategy for Particle Physics



- Outline:
 - Background
 - The strategy is divided into:
 - General issues, Scientific activities, Organizational Issues and Complementary issues
 - I will not cover all parts
 - The neutrino program in Europe – process and next step
 - Summary

Background



- Process:
 - Mandate in CERN Council meeting in September 2005
 - Open Symposium in Orsay February 2006
 - Many inputs received, Briefing books
 - Zeuthen meeting in May 2006 with National Representatives
 - See: <http://council-strategygroup.web.cern.ch/council-strategygroup/>
- Result:
 - http://council-strategygroup.web.cern.ch/council-strategygroup/Strategy_Statement.pdf

■

The European Strategy points



- **General issues**
 - Council will update the Strategy*
- **Scientific issues**
 - LHC completion and SLHC R&D
 - Accelerator R&D*
 - Linear Collider
 - Neutrino Physics*
 - Links to Astroparticle Physics*
 - Flavour Physics
 - Links to Nuclear Physics
 - Theory
- **Organisational issues**
 - Strategy follow up and set up strategy secretariat*
 - Engagement with other regions
 - EU relationship
 - Non member states related to Strategy
- **Complementary issues**
 - Communication Network
 - Technology Network and Transfer

- The most relevant points are the follow up and update process, accelerator R&D, neutrino physics direct point, and the point about astroparticle physics links



Strategy Secretariat

A part of the Strategy statement discusses its follow up:

There is a fundamental need for an ongoing process to define and update the European strategy for particle physics; *Council, under Article II-2(b) of the CERN Convention, shall assume this responsibility, acting as a council for European particle physics, holding a special session at least once each year for this purpose. Council will define and update the strategy based on proposals and observations from a dedicated scientific body that it shall establish for this purpose.*

Implementation:

- *European Strategy Session of Council*
- *Strategy Secretariat (Secretary, ECFA chair, SPC chair, Representative for Laboratory Directors , and work closely with the CERN DG), have a representative from the ApPEC peer review committee as contact as well*
 - *Prepare discussions of Strategy follow up issues in CERN Council*
 - *We can also set up ad-hoc follow-up groups for projects or activities (would be needed in the case of neutrinos, if we go that way)*
- ApPEC and the European Commission participate in these Council sessions
- Strategy Update after 5 years (minimum), aim for 2012?
 - *Specific Preparatory Group will be set up roughly one year before – Strategy Secretariat, some SPC members, some ECFA members, members from the National Labs,*

Scientific activities – neutrinos



- In order to be in the position to push the energy and luminosity frontier even further it is vital to strengthen the advanced accelerator R&D programme; *a coordinated programme should be intensified, to develop the CLIC technology and high-performance magnets for future accelerators, and to play a significant role in the study and development of a high-intensity neutrino facility.*
- Studies of the scientific case for future neutrino facilities and the R&D into associated technologies are required to be in a position to define the optimal neutrino programme based on the information available in around 2012; *Council will play an active role in promoting a coordinated European participation in a global neutrino programme.*
- A range of very important non-accelerator experiments take place at the overlap between particle and astroparticle physics exploring otherwise inaccessible phenomena; *Council will seek to work with ApPEC to develop a coordinated strategy in these areas of mutual interest.*

Neutrino strategy process – what and how



What is needed the next few years:

- Major decisions – around the time of the next Strategy Update and/or to be taken in next period (2012-17(8)) – need to be prepared with a work-programme involving the entire community
- Some points mentioned in this workshop: Plans for CERN injector complex, future double beta experiments, future large detectors, international situation and involvement, CERN laboratory involvement in the field – testbeams, accelerator studies, experiments in the CERN program
- Important to use/support fully whatever is already in place, in Europe and outside Europe – many key experiments ongoing or about to start, EUROnu and EUCARD are active, R&D programs are ongoing
 - On the implementation side the European Strategy Process as defined by Council and the CERN programme committees should be used where relevant
- Due to this workshop and SPC panel work an overview is being built up concerning activities, goals, options for European Neutrino physics – not for me to attempt to conclude now

Neutrino strategy process – what and how



How:

The Strategy Secretariat can bring the neutrino work-programme/action plan to Council, and set up an ad-hoc group to follow certain issues or the entire program – progress will be reported to Council in this case.

- In the case these imply changes or increased activity at CERN the CERN management obviously have to report this to Council

Challenges in the follow up process:

- The process of extracting from this workshop such a work-program is clearly hard
 - Use existing activities to the maximum or strengthen them – what more is needed (as specific activities or overseeing bodies) ?
 - Participants in a possible follow up body: The Strategy Secretariat and CERN management, SPC, ECFA, ApPEC, but most importantly the community
 - It has to be done in a European framework (where CERN participates where appropriate), and in an international perspective



Summary

- Procedure in place for the Strategy follow up, and clear possibilities exists for following up the neutrino area in this framework
- The goal of this workshop is to understand what is needed towards the next strategy update and during the next period, and then as a next step to see that level of organisation is needed
- The work presented has been very impressive so my advice would be use/support and develop these activities, and then see what is missing as activities and consider what overseeing structure is needed
- This would be an early start of the Strategy Update process – so we should set up something along the lines foreseen for this process