

## ECO in ESPPU'26 - report for Poland

EPPCN meeting, 02 June 2025  
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# Polish national input to the 2026 update of the European Strategy for Particle Physics



 Not scheduled

 1m

Executive summary

## Description

The Polish high energy physics (HEP) community fully recognizes the urgent need to host at CERN a flagship project implementing a broad, long-term, and comprehensive vision of particle physics research and pursuing technological advances. Thus, we give preference and declare willingness to actively engage and participate in every aspect of the FCC project (both FCC-ee and FCC-hh), particularly accelerator development, detector construction, theoretical calculations, and physics analyses. As the  $e^+e^-$  Higgs Factory is the top priority for our field, the proposal to build a linear collider facility at CERN, opening up complementary physics prospects, should be considered as the second option.

Polish teams declare strong support and are fully committed to contribute to the full exploitation of all aspects of the physics potential of the LHC and the HL-LHC programmes. To ensure the long-term development of particle physics, we also support the continuation of the high-field magnet research programme, as well as investigating other scenarios including, in particular, linear acceleration techniques and new acceleration technologies such as plasma acceleration, the muon collider and Gamma Factory. In addition, CERN should continue to provide support to fixed-target programmes at SPS as well as other non-collider and non-accelerator experiments at CERN. Participation in major projects conducted in and outside Europe should also be fostered.

Education, communication, and outreach of particle physics are of paramount importance for the future of our field. An increased effort coordinated at the European level and resources allocated in all Member States are essential to effectively support future large-scale particle physics projects.

# Polish national input to the 2026 update of the European Strategy for Particle Physics

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## Structure of the (10 page long) document:

1. Scope of the document
2. Electroweak and Higgs boson physics
3. Beyond the Standard Model and Dark Matter searches
4. Flavour physics
5. Strong Interactions
6. Neutrino and astroparticle physics
7. Instrumentation
8. Theory
9. Accelerator components and technologies
10. Computing
11. **Communication, Education and Outreach**
12. General conclusions and recommendations

## 11 Communication, Education and Outreach

Whatever the details of the final recommendations of the Strategy Update, European particle physics community is facing perhaps the largest challenge of all time. The future big project will undoubtedly be the most complex single science endeavour ever, while at the same time being inherently disconnected from people's everyday experience. The lack of **widespread well-targeted communication and education** may have serious implications for both securing adequate level of future funding as well as ensuring steady flow of young enthusiastic people into science. With this in mind, efficient and compelling communication of the conducted research, long-term planning and benefits to society becomes paramount for the future of our field. Particle physics communication and outreach activities in all CERN Member States should be **carried out in a coordinated manner** and in line with the adopted strategy. The communication narrative should not be limited to research alone, but cover a wide range of topics including societal benefits, environmental impact and demonstrating that international scientific cooperation drives progress and peace, etc. In order to achieve these goals, **more effort and resources need to be put into education, communication and outreach** of particle physics. It is vital that these are **coordinated at the European level with CERN acting as a hub and leader**. Nonetheless, successful communication requires distributed efforts and dedicated **resources allocated locally at national levels**. We should strive to build a sense of ownership and responsibility for CERN within the Member States. This will provide support and facilitate the allocation of resources for the future projects.

## 12 General conclusions and recommendations

[...]

Education, communication and outreach play pivotal role in building trust and support for major scientific endeavours such as the future European particle physics project. To secure adequate level of future funding as well as ensuring steady flow of young enthusiastic people into science, more effort and resources need to be put into communication and outreach activities carried out across all CERN Member States, in a coordinated manner and in line with the adopted strategy.