



HSE
Occupational Health & Safety
and Environmental Protection unit

CERN's Year of Environmental Awareness

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Outline

Context of CERN's Year of Environmental Awareness

- CERN's commitment to environment
- First public CERN Environment Report
- European Strategy for Particle Physics Update

CERN's Year of Environmental Awareness

- Launching Townhall event
- Publications in the CERN Bulletin
- Engaging Actions

Context of CERN's Year of Environmental Awareness

CERN's commitment to environment

- The vision of CERN Director-General Fabiola Gianotti

CERN Bulletin

News Articles Official News Learning Announcements Events Staff Association

english | français

Issue No. 09-10/2016 - Monday 29 February 2016
No printable version available - Subscribe: 

A new type of coating to chase the clouds away

Safety first!

Latest news from the YETS: all restarting except the LHC

LIGO: The strong belief

ICTR-PHE 2016: Strength in numbers

Of data and dust

Organising a conference? Think about what you can do for start-ups!

The next generation of experts in trigger and data acquisition gather at ISOTDAQ2016

Three new students selected for the ATLAS PhD Grant Scheme

From the CERN web: The Art of Science, Theory corridor, DAMPE and more

Computer Security: one click and BOOM...

Alice-Anne Martin (1926 - 2016)

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SAFETY FIRST!

Among the many duties I assumed at the beginning of the year was the ultimate responsibility for Safety at CERN: the responsibility for the physical safety of the personnel, the responsibility for the safe operation of the facilities, and the responsibility to ensure that CERN acts in accordance with the highest standards of radiation and environmental protection.



The Safety Policy document drawn up in September 2014 is an excellent basis for the implementation of Safety in all areas of CERN's work. I am happy to commit during my mandate to help meet its objectives, not least by ensuring the Organization

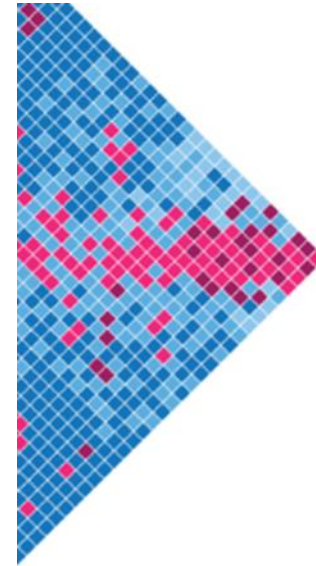
makes available the necessary means to achieve its Safety objectives.

One of the main objectives of the HSE (Occupational Health and Safety and Environmental Protection) unit in the coming months is to enhance the measures to minimise CERN's impact on the environment. I believe CERN should become a role model for an environmentally-aware scientific research laboratory. Risk assessment and prevention and emergency preparedness are also key targets. An effective approach to handling radioactive waste is also important for CERN where we must work to limit the production of such waste, sort it effectively, store it safely and ensure safe disposal.

Context of CERN's Year of Environmental Awareness

CERN's commitment to environment

- Safety at CERN includes the protection of the environment



THE CERN SAFETY POLICY

CERN, an intergovernmental organization for fundamental research in particle physics, defines and implements a Safety Policy. Safety covers occupational health and safety, including radiation protection, the protection of the environment and the safe operation of CERN's installations, including radiation safety.

CERN strives for excellence in matters of Safety.

INTRODUCTION BY THE DIRECTOR-GENERAL

CERN strives for excellence. We strive for excellence in science, excellence in innovation, and excellence in everything we do. Safety is very much at the heart of that. The objective of CERN's Safety Policy is that the Organization's scientific and technical excellence be matched by excellence in matters of Safety. To this end CERN promotes environmentally aware research, best practices in matters of Safety and strives for the optimal protection of the health and safety of all those involved in its activities.

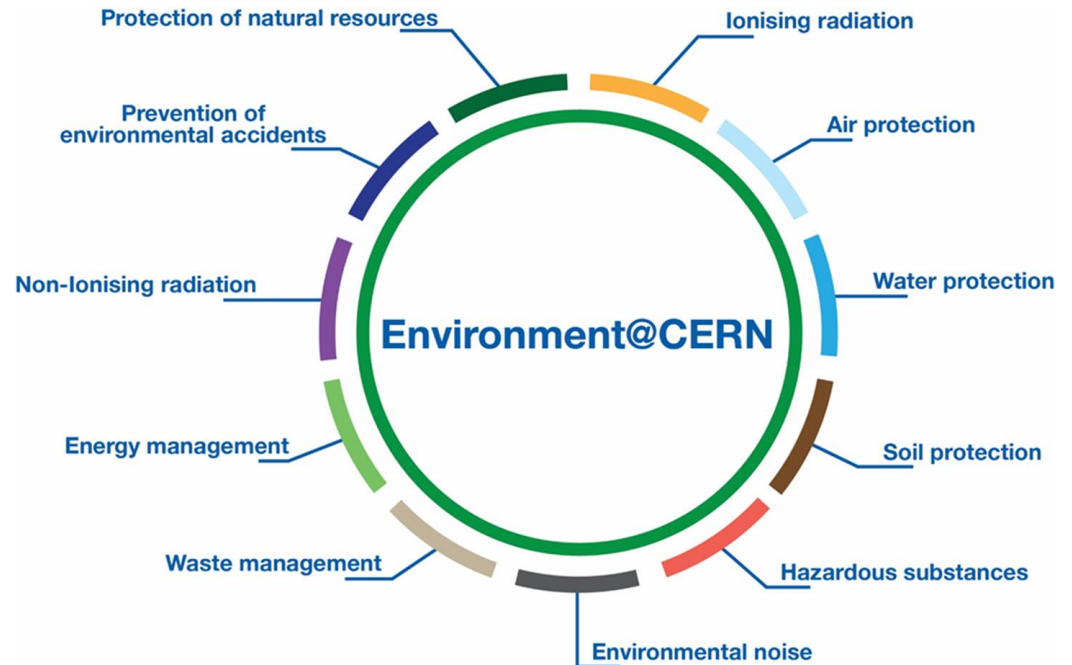
CERN's performance in matters of Safety is dependent on every one of us. I invite you to familiarize yourself with the CERN Safety Policy and our Safety Rules, and I am confident that you will actively contribute to CERN's excellence in matters of Safety through exemplary conduct and the use of best Safety practices when carrying out your activities at CERN.

Fabiola Gianotti
Director-General
8 July 2016

Context of CERN's Year of Environmental Awareness

CERN's commitment to environment

- ❑ CERN Environmental Protection Steering Board established since 2016 – prioritized objectives for 11 Environmental Domains and follow-up of their implementation
- ❑ Dedicated panel on **Energy Management** since more than ten years, incl. exchanges with other Large-Scale Research Infrastructures. **Increase efficiency – Use less – Recover more**



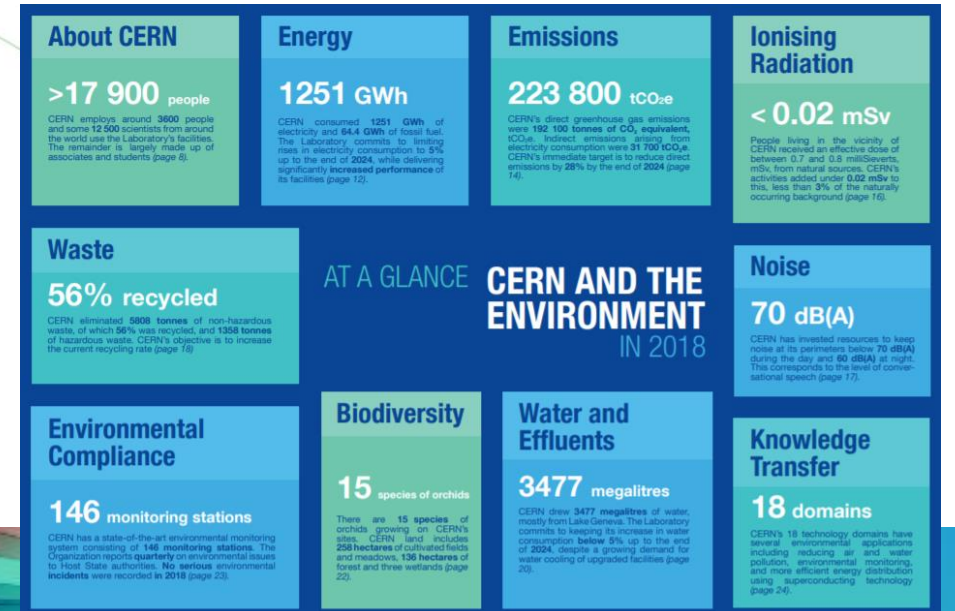
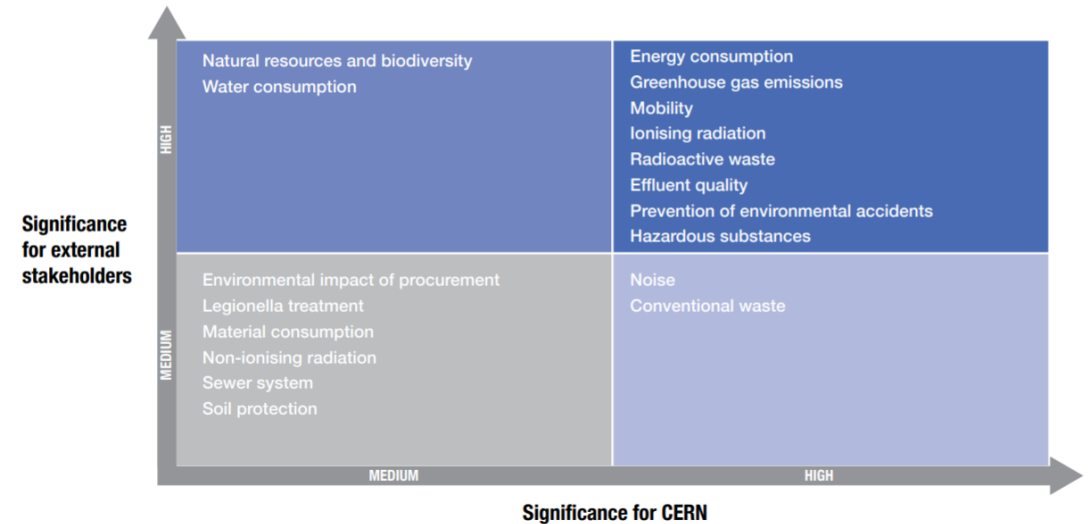
Energy Management for Large-Scale Research Infrastructures



Context of CERN's Year of Environmental Awareness

First Public CERN Environment Report

- ❑ Covering the years 2017-2018, published in September 2020
- ❑ Aligned to the **Global Reporting Initiative (GRI)**. Materiality assessment carried out with internal and external stakeholders
- ❑ Very positive external feedback, limited feedback from CERN personnel



Context of CERN's Year of Environmental Awareness

European Strategy for Particle Physics Update (ESPPU)

- ❑ Approved at the June 2020 CERN Council Meeting
- ❑ Minimising environmental impact of future projects
- ❑ Engaging with industry to facilitate knowledge transfer and technological development, also in the field of environment
- ❑ Considering CERN Environment Report and the ESPPU - Decision early 2021 to carry out a CERN internal environmental communication campaign

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Environmental and societal impact

A. The energy efficiency of present and future accelerators, and of computing facilities, is and should remain an area requiring constant attention. Travel also represents an environmental challenge, due to the international nature of the field. ***The environmental impact of particle physics activities should continue to be carefully studied and minimised. A detailed plan for the minimisation of environmental impact and for the saving and re-use of energy should be part of the approval process for any major project. Alternatives to travel should be explored and encouraged.***

B. Particle physics, with its fundamental questions and technological innovations, attracts bright young minds. Their education and training are crucial for the needs of the field and of society at large. ***For early-career researchers to thrive, the particle physics community should place strong emphasis on their supervision and training. Additional measures should be taken in large collaborations to increase the recognition of individuals developing and maintaining experiments, computing and software. The particle physics community commits to placing the principles of equality, diversity and inclusion at the heart of all its activities.***

C. Particle physics has contributed to advances in many fields that have brought great benefits to society. Awareness of knowledge and technology transfer and the associated societal impact is important at all phases of particle physics projects. ***Particle physics research centres should promote knowledge and technology transfer and support their researchers in enabling it. The particle physics community should engage with industry to facilitate knowledge transfer and technological development.***

CERN's Year of Environmental Awareness

Launching Townhall event in June 2021

- ❑ At the occasion of the World Environment Day (5th of June)
- ❑ CERN DG, Representatives of the Host States, Member of the ESPPU, CERN talks + online Quiz for participants

CERN Bulletin

Issue No. 23-24/2021-Wednesday 09 June 2021
More articles at <http://home.cern/cern-people>

THE HIGH-LUMINOSITY LHC PROJECT TAKES SHAPE AT POINT 1

The construction of an underground cavern at Point 1, which will house equipment for the High-Luminosity LHC, has been successfully completed



A WORD FROM THE DIRECTOR GENERAL

JOIN US IN LAUNCHING CERN'S YEAR OF ENVIRONMENTAL AWARENESS ON 24 JUNE

Last Saturday was World Environment Day, and a fitting occasion for us to launch CERN's Year of Environmental Awareness, an initiative allowing everyone involved with the Laboratory to discover CERN's work in the field of environmental protection, and to find out how we can all contribute.

(Continued on page 2)

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CERN's Year of Environmental Awareness

Launching Townhall event in June 2021

- ❑ Objective of the communication campaign: inform CERN community about **CERN actions** in support of the environment and promoting engagement and active participation of the personnel
- ❑ Publication of articles, every two weeks in the CERN Bulletin + engaging actions from June 2021 to June 2022



3 lines of actions

Minimise Laboratory's impact on environment

- ❑ Implement recommendations of CEPS
- ❑ First public Environment Report released in 2020: describes current status and set ambitious goals for future. Next one Sept 2021, then every two years.
- ❑ Staff member in charge of "sustainable procurement" recently appointed → include environmental considerations in CERN's purchasing processes.

Sustainability: energy saving and re-use

Dedicated Energy Management Panel (EMP) established in 2015.

Energy savings:

- ❑ Online tool monitors energy consumption by activity → "virtual invoices" sent annually to all main consumers to raise awareness
- ❑ ~ 100 GWh/y saved since 2010 (Computing Centre, cryo, SPS operation, ...) through dedicated actions
- ❑ East Area renovation in LS2 (pulsed magnets) → from 11 GWh/year to 0.6 GWh/year. All sites being evaluated (North Area renovation in LS3).

Energy re-use:

- ❑ Heat recovery at LHC Point 8 to warm up new housing in Ferney-Voltaire as of 2022
 - ❑ Heat recovery from new Computing Centre will provide heating for buildings in Prévessin as of 2024.
 - ❑ Science Gateway: unused solar panel energy injected into CERN's grid.
- R&D on efficient power production for future projects (high-efficiency klystrons, etc.) with potential applications in industry

Develop technologies for the environment

- ❑ Vacuum, high-temperature superconducting links for electricity transport, high-efficiency klystrons, etc.
- ❑ Collaboration between Accelerators and Technology sector, Research and Computing sector, HSE unit, Knowledge Transfer group

Courtesy of F. Gianotti – 24 June 2021

CERN's Year of Environmental Awareness

Articles/Infographics published so far

- Providing data on CERN's environmental actions, as well as tips and suggestions



CERN's Year of Environmental Awareness

Did you know that CERN has committed to decrease its direct greenhouse gas emissions by 28% by the end of 2024? Read this new series of articles focusing on various environmental topics and CERN's ongoing initiatives

News | At CERN | [09 June, 2021](#)



Environmental awareness: CERN's **main environmental objectives**

News | At CERN | [21 June, 2021](#)



Environmental awareness: CERN's **water management, give and take**

Did you know that CERN uses water from Lake Geneva to cool its accelerators?

News | At CERN | [05 July, 2021](#)



Environmental awareness: **Water releases** to nearby watercourses

News | At CERN | [20 July, 2021](#)



Environmental awareness: Tackling **waste management** at CERN

The best waste is that which is never produced

News | At CERN | [30 July, 2021](#)

CERN's Year of Environmental Awareness

Articles/Infographics published so far



Environmental awareness: Take action on waste by respecting the three Rs

News | At CERN | 30 August, 2021



Environmental awareness: Participate in CERN's "Tidy-up Week"

Tidy up your work environment with a focus on recycling materials and waste

News | At CERN | 15 September, 2021

+ Article on recycling of non-hazardous waste under publication

CERN's Year of Environmental Awareness

Articles/Infographics to come

Publication 2021	Subject	Layout
12.10.21	CERN's noise in the environment	Article
26.10.21	Noise : annual measuring campaign	Infographic
09.11.21	CERN Environment Report 2019-2020	Article
23.11.21	CERN CO₂ Footprint	Article
07.12.21	CERN CO₂ Footprint	Infographic

Publication 2022	Subject	Layout
January	Technology transfer : technologies linked to Better Planet	Article
	Technology transfer : Activity announcement	Infographic
February	IT : impact of digital infrastructure	Article
	IT : impact of digital infrastructure	Infographic
March	Hazardous substances	Article
	Hazardous substances	Infographic
April	Mobility	Article
	Mobility : maps of cycling routes	Infographic
May	Energy : CERN strategy	Article
	Energy : Activity announcement	Infographic
June	Biodiversity	Article
	Biodiversity : biotopes at CERN	Infographic

CERN's Year of Environmental Awareness

Engaging Actions

- ❑ Tidy-up week organized in collaboration with CERN Safety Representatives and Departments providing operational support (transport services and waste management services)
- ❑ Other engaging actions under discussion for 2022 (e.g *innovation day* as follow-up of COP26 - *energy saving*)



(Image: CERN)

On 18 September, people in 180 countries worldwide will engage in the [World Clean-up Day](#), an annual social action with the objective of tackling the global waste problem. CERN will contribute to this effort through its “Tidy-up Week”, aimed at raising awareness about the need to reduce waste and properly sort recyclable materials.

If you want to know more about CERN's Environmental report
<https://hse.cern/environment-report-2017-2018>