The CERN Environment Report

James Gillies, EIROforum ComG, 24 February 2020

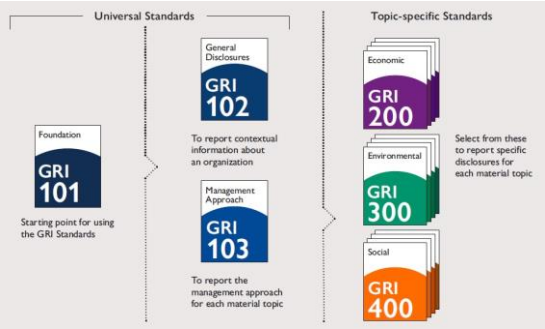
How it all began…

“I want CERN to be a role model for environmentally responsible research”

The Global Reporting Initiative

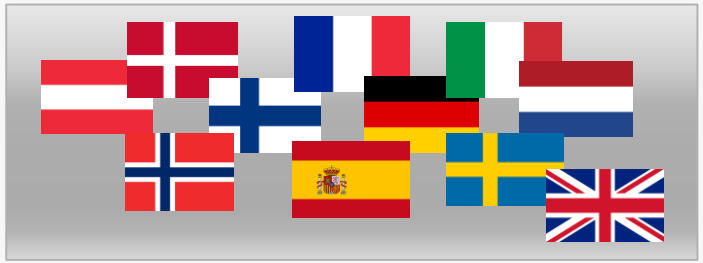
- GRI, is an independent organization established in 1997 to promote standardisation in sustainability reporting.
- A succession of guidelines (G1-G4) have evolved into the GRI Standards.
- The GRI Standards are the leading framework for sustainability reporting world-wide.
- 93% of the world's largest 250 corporations report on their sustainability performance.

Why GRI?



- GRI is modular and flexible
- It allows us to report only on environmental aspects (General disclosures plus GRI300)
- The key principle is materiality: report only on what is relevant for CERN and major stakeholders

- GRI is compatible with other standards (ISO)
- GRI is compatible with the EU directive on non-financial reporting
- GRI can formally be linked to the SDGs
- GRI is endorsed by many CERN MS, UNEP, OECD…



Materiality

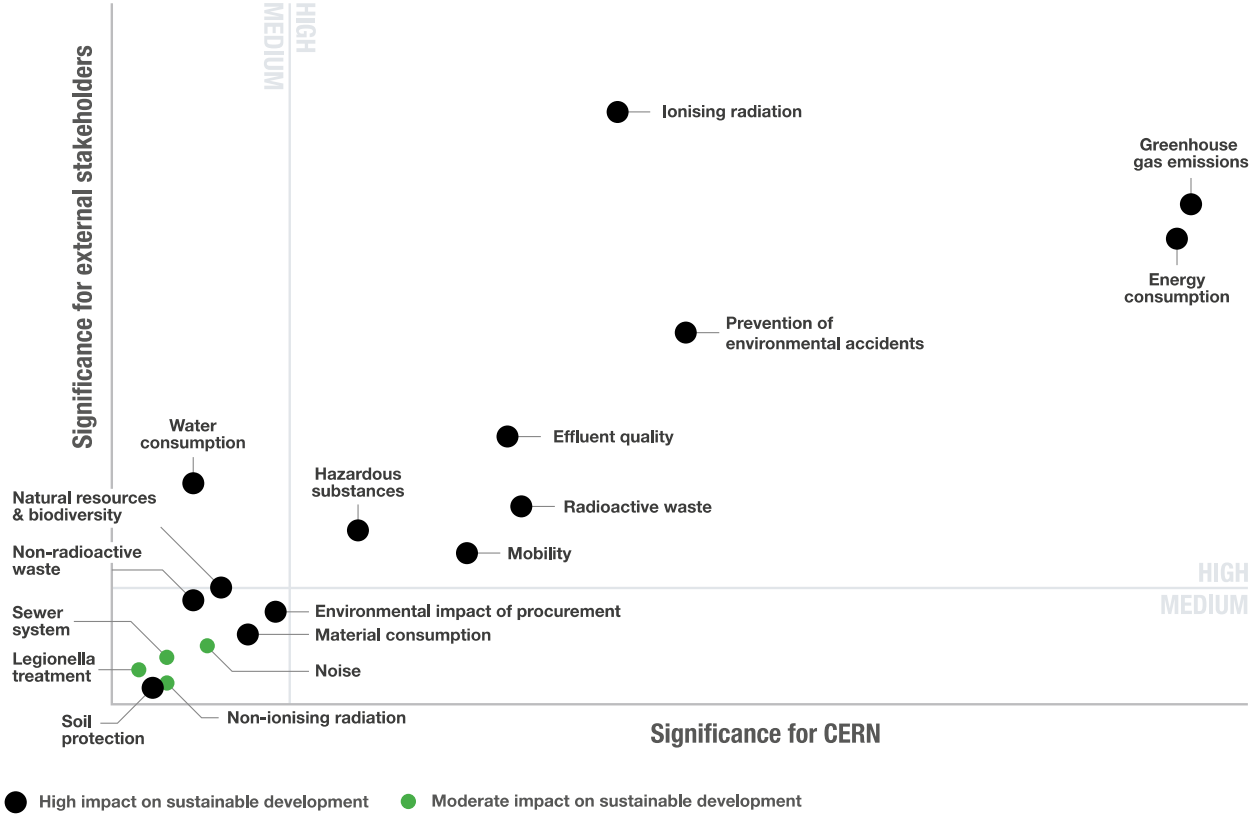
Internal stakeholders:

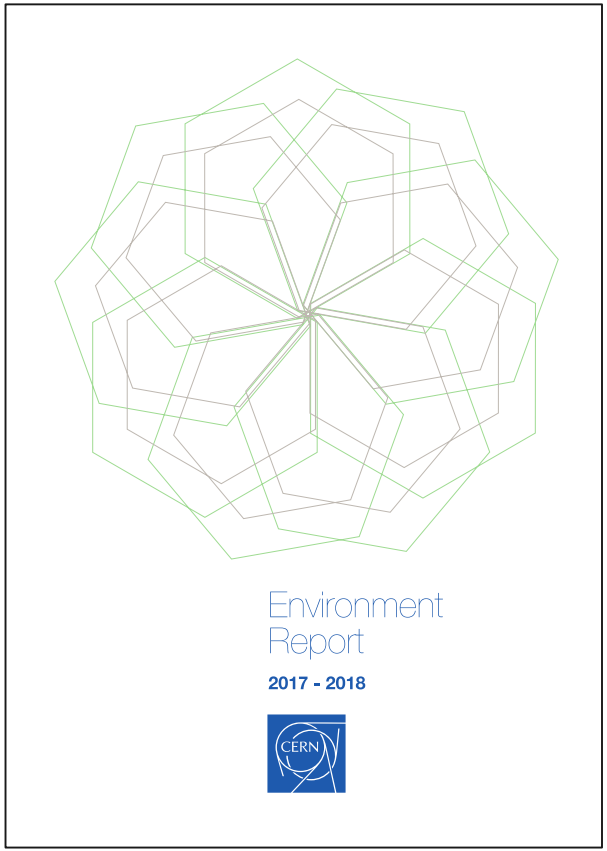
- Heads of CERN Departments;
- Administrative, finance and procurement officers;
- Personnel responsible for aspects of external relations;
- Representatives of the User community and Staff Association;
- Senior management;
- CERN Council President and members;
- Personnel with responsibility for environmental aspects.

External stakeholders:

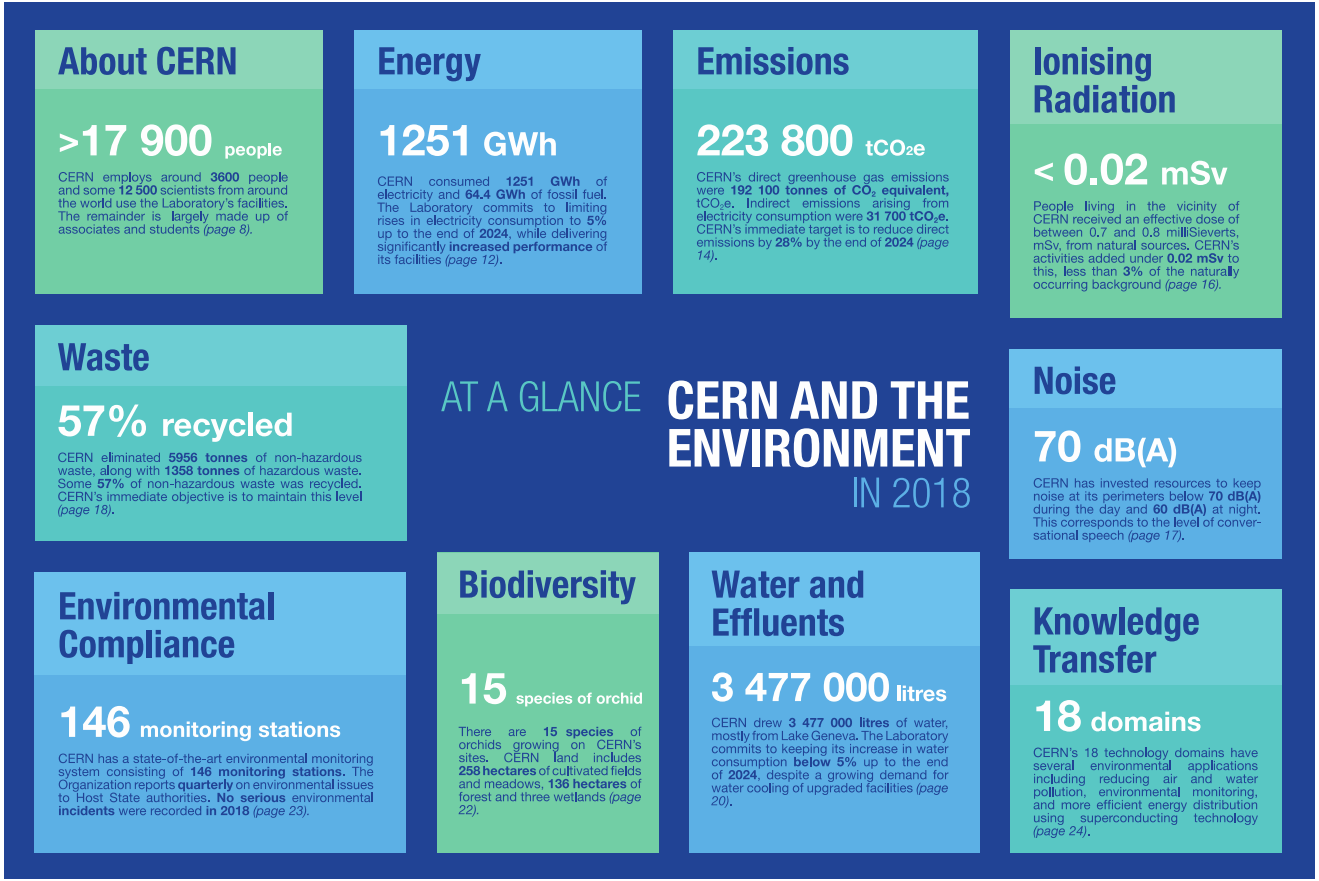
- Host State participants in meetings held under the tripartite agreement on radiation protection and radiation safety;
- Host State participants in meetings held under the tripartite committee for the environment;
- The Mayors of some local communities with a strong CERN presence;
- Energy suppliers;
- Representatives of Host-State media;
- Sustainability consultants.

Materiality





CERN


About CERN
>17 900 people
CERN employs around 3600 people and some 12 500 scientists from around the world use the Laboratory's facilities. The remainder is largely made up of associates and students (page 8).
Energy
1251 GWh
CERN consumed 1251 GWh of electricity and 64.4 GWh of fossil fuel. The Laboratory commits to limiting rises in electricity consumption to 5% up to the end of 2024, while delivering significantly increased performance of its facilities (page 12).
Emissions
223 800 tCO2e
CERN's direct greenhouse gas emissions were 192 100 tonnes of CO2 equivalent, tCO2e. Indirect emissions arising from electricity consumption were 31 700 tCO2e. CERN's immediate target is to reduce direct emissions by 28% by the end of 2024 (page 14).
Ionising Radiation
< 0.02 mSv
People living in the vicinity of CERN received an effective dose of between 0.7 and 0.8 milliSieverts, mSv, from natural sources. CERN's activities added under 0.02 mSv to this, less than 3% of the naturally occurring background (page 16).
Waste
57% recycled
CERN eliminated 5956 tonnes of non-hazardous waste, along with 1358 tonnes of hazardous waste. Some 57% of non-hazardous waste was recycled. CERN's immediate objective is to maintain this level (page 18).
AT A GLANCE
CERN AND THE ENVIRONMENT
IN 2018
Noise
70 dB(A)
CERN has invested resources to keep noise at its perimeters below 70 dB(A) during the day and 60 dB(A) at night. This corresponds to the level of conversational speech (page 17).
Environmental Compliance
146 monitoring stations
CERN has a state-of-the-art environmental monitoring system consisting of 146 monitoring stations. The Organization reports quarterly on environmental issues to Host State authorities. No serious environmental incidents were recorded in 2018 (page 23).
Biodiversity
15 species of orchid
There are 15 species of orchids growing on CERN's sites. CERN land includes 258 hectares of cultivated fields and meadows, 136 hectares of forest and three wetlands (page 22).
Water and Effluents
3 477 000 litres
CERN drew 3 477 000 litres of water, mostly from Lake Geneva. The Laboratory commits to keeping its increase in water consumption below 5% up to the end of 2024, despite a growing demand for water cooling of upgraded facilities (page 20).
Knowledge Transfer
18 domains
CERN's 18 technology domains have several environmental applications including reducing air and water pollution, environmental monitoring, and more efficient energy distribution using superconducting technology (page 24).

GRI INDEX

Disclosure	Title	Pages / Informations
GRI 101:2016 FOUNDATION		
GRI 102:2016 GENERAL DISCLOSURES		
Organizational Profile		
102-1	Name of the organization	pp. 8-9
102-2	Activities, brands, products, and services	pp. 8-9
102-3	Location of headquarters	pp. 8-9
102-4	Location of operations	pp. 8-9
102-5	Ownership and legal form	pp. 8-9
102-6	Markets served	pp. 8-9
102-7	Scale of the organization	pp. 8-9
102-8	Information on employees and other workers	pp. 8-9
102-9	Supply chain	pp. 8-9
102-10	Significant changes to the organization and its supply chain	There were no significant changes during the period covered by this report.
102-11	Precautionary Principle or approach	pp. 10-11, p.16
102-12	External initiatives	pp. 8-9
102-13	Membership of associations	pp. 8-9
Strategy		
102-14	Statement from senior decision-maker	pp. 4-5
Ethics and Integrity		
102-16	Values, principles, standards, and norms of behavior	pp. 8-9
Governance		
102-18	Governance structure	pp. 8-9
Stakeholder Engagement		
102-40	List of stakeholder groups	pp. 8-9
102-41	Collective bargaining agreements	The CERN Staff Association represents the CERN personnel, which is an important stakeholder group to the Organization. The Association represents the entire staff body on the Tripartite Forum on Conditions of Employment (TREF). Besides the Staff Association, TREF is composed of representatives of the Member States and the Directorate. TREF examines the conditions of pay and employment at CERN and its recommendations, if adopted by the Council, apply to all staff.
102-42	Identifying and selecting stakeholders	pp. 10-11
102-43	Approach to stakeholder engagement	pp. 10-11
102-44	Key topics and concerns raised	pp. 10-11
Reporting Practice		
102-45	Entities included in the consolidated financial statements	CERN's financial statements are presented to the Council at its June meeting. Those for 2018 can be found at http://cds.cern.ch/record/2680368
102-46	Defining report content and topic Boundaries	pp. 10-11
102-47	List of material topics	pp. 10-11
102-48	Restatements of information	This is CERN's first GRI report. There are therefore no restatements of information.
102-49	Changes in reporting	This is CERN's first GRI report. There are therefore no changes in reporting.
102-50	Reporting period	This report covers the years 2017 and 2018.
102-51	Date of most recent report	This is CERN's first report.
102-52	Reporting cycle	The reporting cycle is biennial.
102-53	Contact point for questions regarding the report	Questions regarding this report may be addressed to Environment.info@cern.ch
102-54	Claims of reporting in accordance with the GRI Standards	This report has been prepared in accordance with the GRI Standards: Core option.
102-55	GRI content index	This document

GRI INDEX

Disclosure	Title	Pages / Informations
102-56	External assurance	No external assurance was sought for this report. However, Host State authorities carry out independent measurements concerning CERN's water releases, ionising radiation and noise emissions. Regular exchanges with the Host State authorities take place within the framework of the tripartite committees for the environment and for radiation protection.
GRI 300: ENVIRONMENTAL		
GRI 302:2016 ENERGY		
GRI 103-1/2/3.2016	Management approach	pp. 12-13
302-1	Energy consumption within the organization	pp. 12-13
302-2	Energy consumption outside of the organization	pp. 12-13
GRI 305:2016 EMISSIONS, RADIATION and NOISE		
GRI 103-1/2/3.2016	Management approach	p. 14, p. 16, p. 17
305-1	Direct (Scope 1) GHG emissions	pp. 14-15
305-2	Energy indirect (Scope 2) GHG emissions	pp. 14-15
	Mobility management	pp. 14-15
	Ionising radiation	p. 16
	Noise	p. 17
GRI 306:2016 WASTE		
GRI 103-1/2/3.2016	Management approach	pp. 18-19
306-2	Waste by type and disposal method	pp. 18-19
GRI 303:2018 WATER AND EFFLUENTS		
GRI 103-1/2/3.2016	Management approach	pp. 20-21
303-1	Interactions with water as a shared resource	pp. 20-21
303-2	Management of water discharge-related impacts	pp. 20-21
303-3	Water withdrawal	pp. 20-21
303-4	Water discharge	pp. 20-21
303-5	Water consumption	pp. 20-21
GRI 304:2016 BIODIVERSITY		
GRI 103-1/2/3.2016	Management approach	p. 22
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	p. 22
GRI 307:2016 ENVIRONMENTAL COMPLIANCE		
GRI 103-1/2/3.2016	Management approach	p. 23
307-1	Non-compliance with environmental laws and regulations	p. 23
	Prevention of environmental accidents	p. 23
	Hazardous substances	p. 23
CERN-SPECIFIC DISCOLSURE: KNOWLEDGE TRANSFER		
	Knowledge and technology for the environment	p. 24, http://kt.cern

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http://home.cern

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Images: CERN

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ISBN 978-92-9083-553-0 (electronic version)

Next steps

- Secure GRI organizational mark
- Small number of copies to be printed (200 each English/French)
- Dedicated space for the Environment being developed on the HSE website
- Report to be delivered to the CERN Council in March and made public
- Comprehensive communications campaign to follow
- Work to begin on the next report this summer – to cover 2019 and 2020, and be published in 2021.
- Potential to work with GRI being investigated
- Potential to produce full sustainability report