

# The EWG Bulletins on pressurized waterways: work in progress

*Antonella Frigerio*

November 21, 2024



## The ITCOLD Working Group

2016

In 2016, the **Italian Commission on Large Dams** (ITCOLD) set up a Working Group on penstocks, given their importance for the operation of hydropower plants

The aim of the WG was to **share experiences and best practices** in the design, maintenance, control, safety assessment, and rehabilitation works for these facilities

The **28 members** were consultant engineers, hydropower operators, researchers, diagnostics and modelling experts, and control authorities

2019

In 2019, the WG issued a **Bulletin** representing the state of the art of this sector and providing guidelines for the safety assessment of existing penstocks



## Extending the Italian experience

2019

In many European countries there is a **lack of standards** for the design of new penstocks and even **regulations** for institutional controls

ITCOLD proposed to the European ICOLD Club (EurCOLD) to **extend the Italian experience to the European level** to exchange knowledge

In October 2019, during the 11<sup>th</sup> ICOLD European Club Symposium held in Chania (Greece), the EurCOLD Board accepted the ITCOLD proposal and established the European Working on **Penstocks & Pressure Shafts**





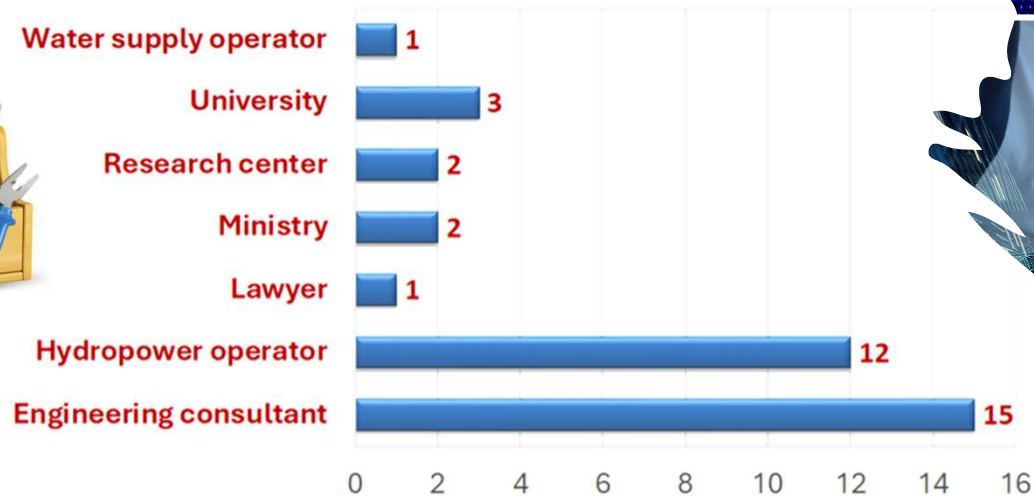
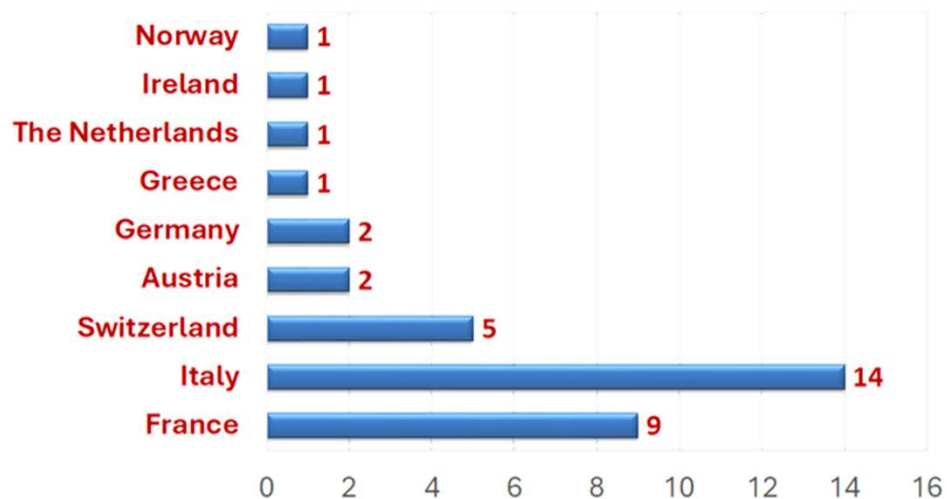
## EWG Penstocks & Pressure Shafts - ToR

- Types of penstocks and pressure shafts
- Main constitutive elements
- Main recurring problems
- Surveillance and control methodologies
- Maintenance and rehabilitation activities
- Safety assessment
  - ▶ Critical assessment of national and international standards
  - ▶ Recommended state-of-the-art design and verification criteria
- Risk assessment and insurance issues
- Case histories





## EWG Penstocks & Pressure Shafts - Members







## EWG workshops

**Penstocks, pressure shafts  
& pressure tunnels**  
*workshop*

European  
ITCOLD Club  
Working Group

November 3-4  
2022

Online &  
in presence

**Date and time**  
November 03, 2022  
14:00 - 17:30, UTC +1  
November 04, 2022  
09:00 - 12:30, UTC +1

**Location**  
Centro Congressi FAST  
Piazzale R. Morandi 2  
20121 Milan  
Italy

organized by  
ITCOLD

In collaboration with  
RSE

Registration  
Send an email to [itcold@iol.it](mailto:itcold@iol.it) by October 25, 2022  
attaching the registration form received via email together with this  
brochure. For Italian engineers, Credits Formative Professional (CFP) will  
be available.



**ITCOLD  
RSE**

**Milan (Italy)  
November, 3-4  
2022**



**Penstocks, pressure shafts  
& pressure tunnels**  
*workshop*

European  
ITCOLD Club  
Working Group

November 21<sup>st</sup>  
2024

Online &  
in presence

**Date and time**  
November 21, 2024  
08:00 - 21:30, UTC +1

**Location**  
TU Graz  
Lecture Hall HS II  
Rechbauerstraße 12  
A-8010 Graz (Austria)

organized and  
supported by  
ATCOLD

TU  
Graz

RSE

mokveld

Registration via  
<https://atcold.it/eurocold-working-group-workshop/>  
(End of registration 14 November 2024, 23:59)  
Please send your questions to: [ewg2024@tugraz.at](mailto:ewg2024@tugraz.at)



**ATCOLD  
TUGRAZ  
mokveld  
RSE**

**Graz (Austria)  
November, 21  
2024**





## EWG bulletin...

In 2021, the EWG started a  
Bulletin on Penstocks and  
Pressure Shafts

The index recalls the assigned  
Terms of References

In each chapter/subchapter the  
main issues to be addressed  
have been figured out



European Working Group

Penstocks & Pressure Shafts







European Working Group  
Penstocks, Pressure Shafts and Pressure Tunnels

Bulletin n. 1

2024



Pressurized waterways  
State-of-the-art

## ... split into several Bulletins

The EWG Bulletin has been subdivided into 4 parts:

1. **Pressurized waterways: state of the art**
2. **Pressurized waterways: surveillance and control methodologies, maintenance and rehabilitation activities and main recurring problems**
3. **Pressurized waterways:**
  - a) Design and safety assessment
  - b) Risk assessment and insurance issues
4. **Pressurized waterways: case histories**



**Issuing the first  
bulletin next year**





## How to join the EWG



Write an email to:  
[antonella.frigerio@rse-web.it](mailto:antonella.frigerio@rse-web.it)



I will inform the EurCOLD Secretariat  
of the new member/s





*Antonella Frigerio*

November 21, 2024

