



Penstocks, pressure shafts & pressure tunnels

workshop



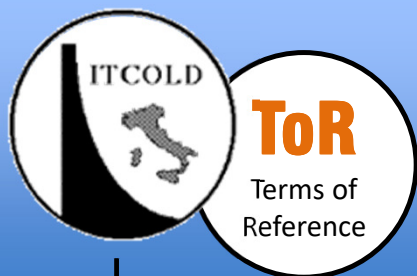
4th November 2022

European Working Group Penstocks and Pressure Shafts

Antonella Frigerio



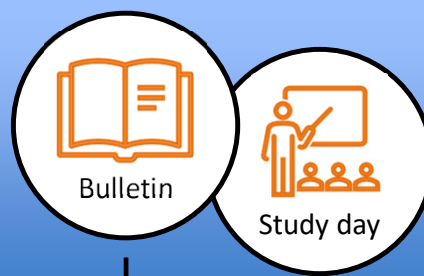
The Italian experience



2016

ITCOLD formed a national Working Group on Penstocks

Coordinator: Sergio Ballatore
Members' number: 27



2018

The Working Group issued a **technical Bulletin** on Penstocks

ITCOLD organized a **study day** to present the main WG' outcomes



From the Italian experience up to the European Working Group



11th ICOLD
European Club Symposium



2-4 October 2019
Minoan Palace, Chania
Crete - **Greece**

2019

Considering the proposal of ITCOLD, the **European ICOLD Club** set up a new European Working Group on **Penstocks & Pressure Shafts** at the Symposium held in Chania, Greece

Coordinator: Antonella Frigerio

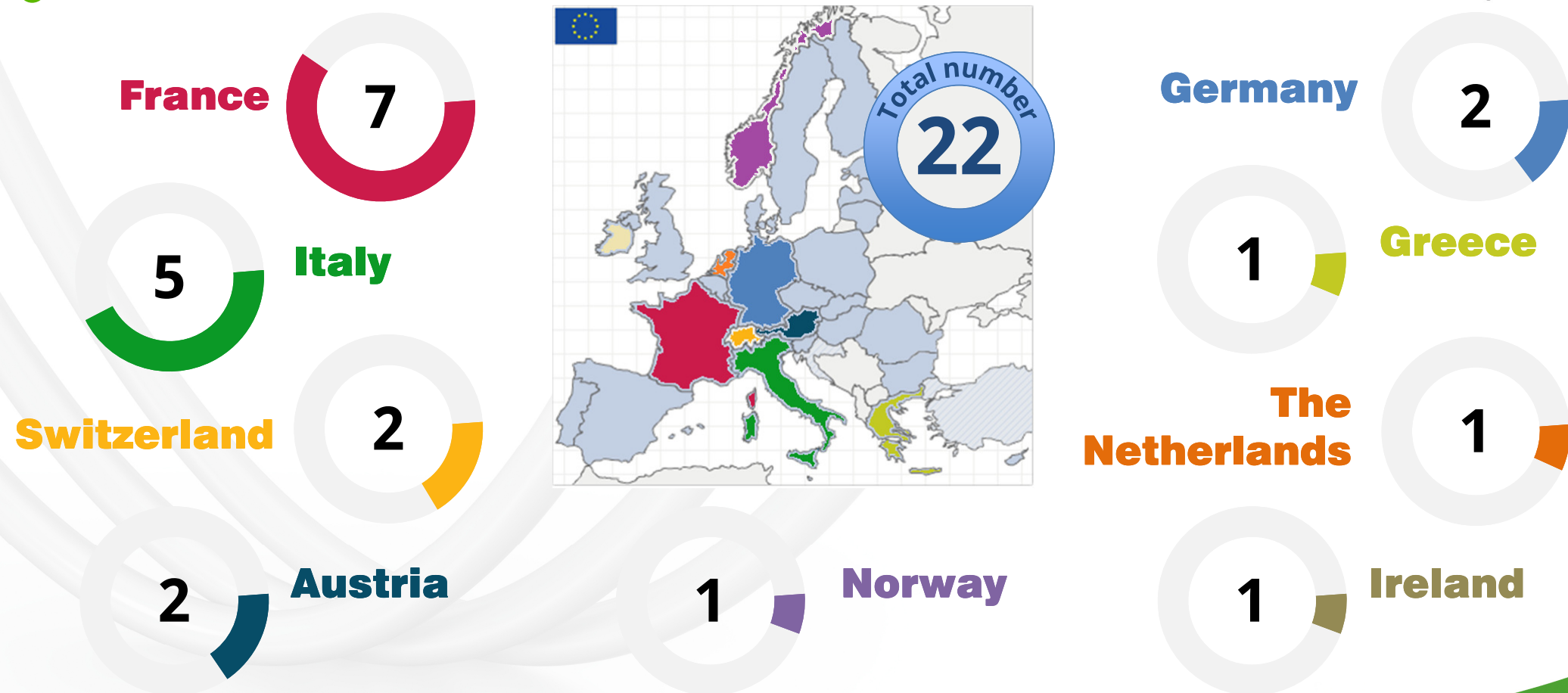
Some pictures of the study day organized by ITCOLD in Milan in 2018 to issue the Bulletin of the national WG on Penstocks

EWG Penstocks & Pressure Shafts - ToR

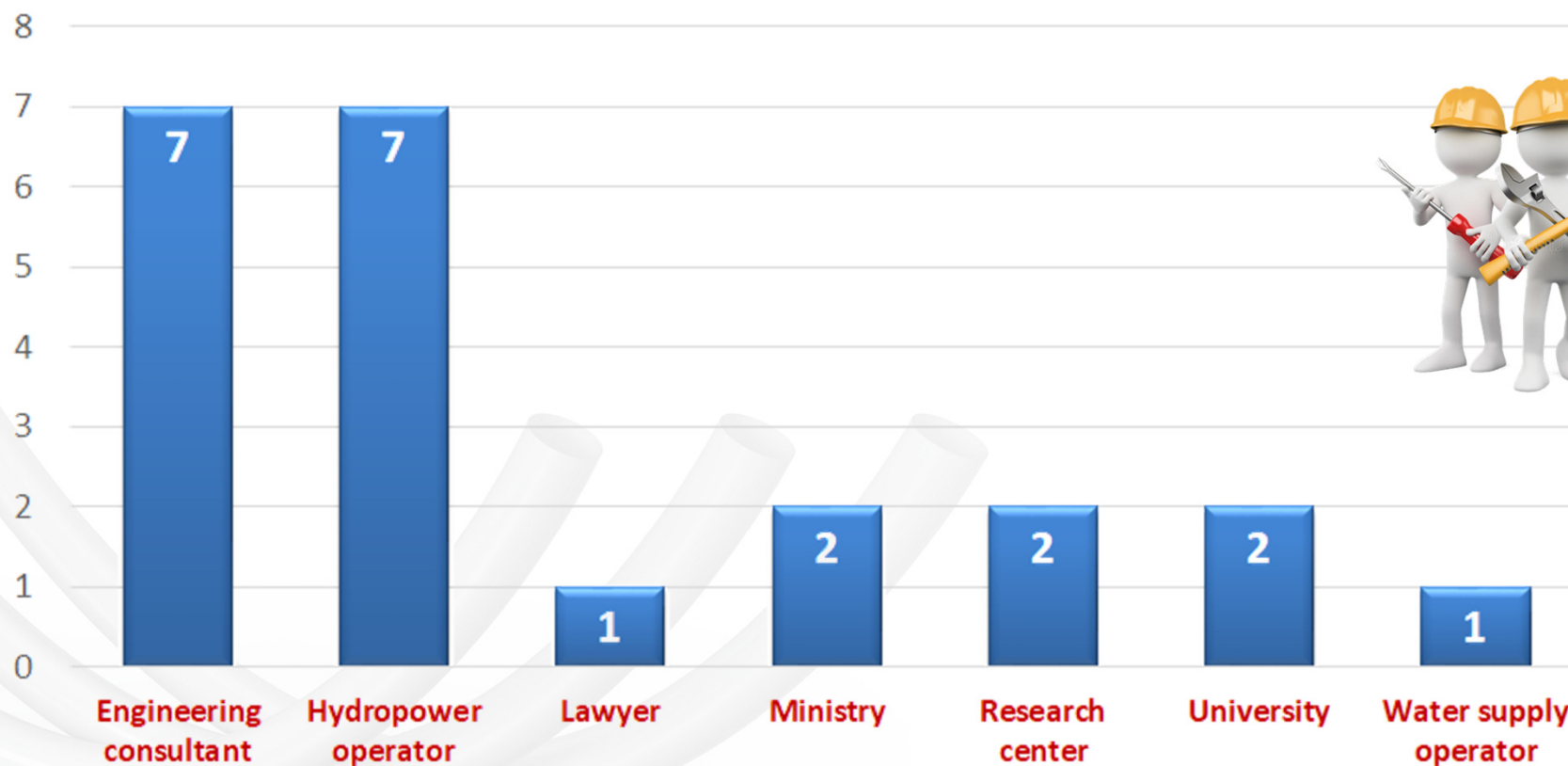
- Types of penstocks and pressure shafts
- Main constitutive elements
- Main recurring problems
- Surveillance and control methodologies
- Maintenance and rehabilitation activities
- Safety assessment
 - ▶ Critical assessment of national and international standards
 - ▶ Recommended state-of-the-art design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



EWG - Members' Country (updated Nov 2022)



EWG - Members' field of activity (updated Nov 2022)



Members' main interests: design, safety assessment, operation, research and innovation

EWG Bulletin - Index and contents (in progress)



European Working Group

Penstocks & Pressure Shafts



EWG "Penstocks & Pressure Shafts"

European ICOLD Club

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The definition of the **Bulletin index** has been completed



The main content of each chapter and subchapter has been outlined



Promote a teamwork to openly discuss the main issues related to the design and safety operation, research needs, innovative solutions and methods etc.

Organize open **workshops** in Europe with the support of National ICOLD Committees, Companies or Universities to share and exchange experiences with other technicians





Penstocks and pressure shafts

Colleagues interested in taking part in the technical activities of the EWG can:



Inform their National ICOLD Committee



Send an email to Antonella Frigerio
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3rd November 2022

European Working Group Penstocks and Pressure Shafts

Antonella Frigerio

