

ETIP HYDROPOWER Governing Board Application form

Name and surname	Antonella Frigerio
Photo	
Name of entity (e.g. company, association, etc.)	Ricerca sul Sistema Energetico - RSE S.p.A.
Job title / role	Civil Engineer / Deputy Director
Stakeholder category	<input type="checkbox"/> Hydropower industry and technology ¹ <input type="checkbox"/> Operator/owner of large hydropower plants and/or pumped storage plant(s) <input type="checkbox"/> Independent operator/owner of small hydropower plant(s) <input type="checkbox"/> Design, planning and project development <input type="checkbox"/> Finance, business and insurance ² <input checked="" type="checkbox"/> Research, innovation and development ³ <input type="checkbox"/> Environment and civil society ⁴
Country	Italy
Previous experience (1300 characters with spaces)	<p>More than 20 years' experience in non linear numerical modelling of energy structures, particularly concrete large dams and steel penstocks. For 7 years, in RSE I managed public research projects, funded by the Italian Ministry of Economic Development, that focused on: the security and resilience of the electric system against extreme weather events and climate changes; the development of innovative technologies and the integration of energy storage systems in the transmission network to facilitate the Renewable Energy Sources uptake; the development of long-term scenarios to support the Italian Government in the definition of the National Integrated Energy and Climate Plan.</p> <p>In RSE I also carried out some consulting activities for hydropower operators for the safety assessment of concrete dams and penstocks.</p> <p>I am in charge of the ITCOLD Working Group on "Multiple arch, buttress and hollow gravity dams",</p>

¹ Equipment supplier and/or manufacturer, maintenance industry, etc.

² Financial, legal & developing institutions, development, public or commercial banks, financial organisations, and private investors/investment funds, international monetary fund, insurance, legal advisors, etc.

³ R&D institutions, research centers and institutes of universities, etc.

⁴ Environmental or conservation NGO's, civil society associations, policy makers, water resources associations, project stakeholders, etc.

	<p>and the EurCOLD Working Group on “Penstocks & Pressure Shafts”. I am co-opted member of the ICOLD Technical Committee A on “Computational Aspects of Analysis and Design of Dams”.</p> <p>I was appointed Deputy Director of the Sustainable Development and Energy Sources Department in August 2019.</p>
<p>Motivation to become Governing Board member (1300 characters with spaces)</p>	<p>Hydroelectric is the main renewable source in Italy in terms of energy delivered. To play an active role in the energy transition process, this sector must consolidate its points of strength, and reduce its weaknesses, mainly related to the ageing of infrastructures, the impacts on river ecosystems, and the public acceptance. RSE is fully aware of the research and development needs of the hydroelectric sector thanks to its longlasting experience in the field, through promoting innovative numerical methods for the safety assessment (e.g., the development of the SAM-4D seismic wave propagation model for the seismic analysis of dam-foundation-reservoir systems; the introduction of the eXtended Finite Element Method in dam engineering to evaluate the trigger and propagation of cracks in concrete dams without remeshing), evaluating the Italian pumped storage potential (both conventional and seawater) and supporting the social acceptance of these infrastructures through the organization of the “Dams & Territories” workshops all over Italy in cooperation with ITCOLD. These activities are carried out taking part in national, European and international Working Groups / Technical Committee to collaborate and share information with the operators, the academic and institutional world.</p>