Partner profile

- **(*) Relevant topic in work programme**

- LC-SC3-NZE-6-2020: Geological Storage Pilots

- **Quick description of the expertise**

Istituto Nazionale di Geofisica e Vulcanologia (INGV) is among the largest research institutions of Earth Sciences in Europe. INGV is the reference institution for Italian governmental bodies in the field of geo-hazards. Its main mission is the monitoring and the study of geophysical phenomena in solid and fluid Earth System components. INGV manages monitoring networks and collects, inspects and disseminates data in the field of seismology, volcanology, geomagnetism, aeronomy, geochemistry and marine sciences.

The INGV group could work on the seismic monitoring of CO2 pilot sites, in the subsurface imaging with passive seismic techniques (2D and 3D models), computation of high resolution models, fault individuation and fluid characterization. In particular, subsurface imaging can be focused on the possibility to track fluids migration within the reservoir with repeated passive surveys (time-lapse ambient noise tomography). INGV group has seismic monitoring facilities (including instruments, data storage device and algorithms for analyses).

- **(*) Description of the expertise offered (up to 1000 characters)**

The INGV research group offers scientific skills in the reconstruction of high resolution three-dimensional models of the subsurface, targeted at verifying the effective geological storage capacity of CO_2 in the subsoil, through the execution of passive seismic surveys and monitoring.

The research group was already involved in research projects related to the geophysical exploration, seismic monitoring of CO2 potential pilot sites (Sulcis, southern Italy) and other exploiting areas. Decades of application on seismic monitoring and studies on the evolution of seismicity make the group at the top level worldwide.

The main expertise of the group consists of:

✓ geophysical characterization of fault systems and fractures, using active and passive seismic tomographic techniques;
✓ detailed geological characterisation, including faults and facture systems, porosity and permeability of the reservoir and of the seal formation;
✓ implementation of networks and monitoring systems for the seismicity induced in response to the dynamic pressurization of the wells and the injection of CO2 into the subsoil

- **Keywords describing the expertise requested (up to 10 words)**

- Seismic monitoring
- Imaging of the subsurface
- Fault and reservoir physical characterization

Organisation information

Organisation and country: INGV Italy
Type of organisation: ☐ **Enterprise** ☐ **SME** ☐ **Academic** ■ **Research institute** ☐ **Public Body** ☐ **Other: Association**
Former participation in FP European projects? ■ **Yes** ☐ **No**
Web address: www.ingv.it
Description of the organisation: Italian public research body

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(*) –Mandatory