

## Cover sheet

Full name of state or organization:

Italian Republic

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Job Title: Minister Plenipotentiary – Special Envoy for the Arctic

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## Observer Report

Please describe in no more than two pages your state's or organization's contributions to the work of the Arctic Council's Working Groups, Task Forces, and/or Expert Groups since the time of your most recent report, or in the previous two years. Please highlight contributions to specific projects, such as through proposals, concept development, in-kind and financial support, and hosting of meetings. Please detail any collaboration with Permanent Participants, such as project proposal endorsement and support.

Italy considers the Arctic Council the cornerstone of international cooperation on Arctic issues and is determined to continue to contribute actively to its works, mindful of the prerogatives of the Observer States. In this framework, Italy recognizes the sovereignty of the Arctic States in the Arctic, respects the values, cultures and traditions of local and indigenous peoples, promotes bilateral and multilateral cooperation on Arctic issues and offers its contribution to keep the Arctic as an area of low tensions and a high level of cooperation. Italy has appointed a senior diplomat as Special Envoy for the Arctic. He attends the Ministerial and SAO meetings of the Arctic Council and, at a national level, he chairs the Arctic Scientific Committee and the Arctic Table, a coordination forum on Arctic issues that gathers Ministries, research agencies and companies interested in the Arctic.

Scientific research is the main driver of Italian engagement in the Arctic. Therefore, Italy gives a high priority to its contribution to the works of the subsidiary bodies of the Arctic Council. Consequently, it identified representatives for each of the six permanent working groups of the Arctic Council, as well as for some expert groups. The Italian delegates come from different institutions: the Ministry of Environment, Land and Sea (MATTM), the Italian Hydrographic Institute (IIM) and the primary research agencies (National Research Council – CNR; National Agency for New Technologies, Energy and Sustainable Economic Development – ENEA; National Institute of Geophysics and Volcanology -INGV; National Institute of Oceanography and Applied Geophysics - OGS), in a collective effort to support the works of the Arctic Council with our best expertise.

**ACAP.** Dr. Warren Raymond Lee Cairns (CNR-ISP) has recently started attending the ACAP meetings and replaces Dr. Ian Hedgecock. He works for the recently established Institute for Polar Sciences (ISP), which gathers competencies and experts on Polar issues that were previously dispersed in different Institutes of CNR.

**AMAP.** Italy boasts a longstanding, active and continuous participation in AMAP, through the work of Dr. Vito Vitale (CNR-ISP), Dr. Angelo Viola (CNR-ISP) and Dr. Michele Rebesco (OGS). In addition, Italy has appointed representatives for five AMAP expert groups: EG on Persistent Organic Pollutants and EG on Mercury - Dr. Warren Raymond Lee Cairns (CNR-ISP); EG on Short-Lived Climate Forces (SLCFs) – Dr. Vito Vitale (CNR-ISP); EG on Climate – Dr. Vito Vitale (CNR-ISP) and Dr. Florence Colleoni (OGS); EG on Marine Litter and Micro-plastics – Dr. Stefano Aliani (CNR-ISMAR). These experts provided concrete contributions in several assessments, reports and working plans, for instance on POPs, climate change, short-lived climate forcers, litter and micro-plastics. Moreover, in November 2018 CNR hosted in Bologna a meeting of SLCFs expert group.

**CAFF.** In 2018 Italy appointed Dr. Antonello Provenzale (CNR-IGG) and Dr. Luigi Paolo D'Acqui (CNR-IRET) as delegates for CAFF and since then they have assured active participation in the meetings. With CAFF, Italy covered all the permanent working groups of the Arctic Council.

**EPPR.** Since 2016, representatives of the Italian Hydrographic Institute (IIM) assured active participation in EPPR, currently Cdr. Maurizio Demarte and Prof. Roberta Ivaldi. Within the subgroups, Italy participates in the Marine Environmental Response EG with Prof. Ivaldi and in the Search and Rescue EG with Cdr. Demarte. Dr. Vito Vitale (CNR-ISP) and Dr. Stefania Amici (INGV) attended the first meeting, via videoconference, of EPPR Circumpolar Wildfire project steering committee. In the framework of IT-Navy High North Program, IIM and e-Geos, the leading Italian company in Earth observation and geospatial data, are continuing to implement the ARNACOSKY (Arctic Navigation with COSMO-SkyMed) project, based on the COSMO-SkyMed radar satellite constellation – for support activity in search and rescue, environmental emergencies, monitoring shipping routes, oil spills and sea ice dynamics. The system has been developed and tested during High North18, High North19 and High North20 campaigns, whose results have been illustrated by IIM during EPPR meetings.

**PAME.** Dr. Luca Fiorani (ENEA) and Dr. Stefano Aliani (CNR) since many years regularly attend PAME meetings and actively contribute to several activities. Dr. Aliani is also the Italian representative in the EG on Marine Litter and has contributed to the desktop study on this subject. Cdr. Antonino Scarpato (Italian Coast Guard) and Dr. Salvatore Mauro (CNR) participate in the Shipping Expert Group.

**SDWG.** Dr. Giovanni Brunelli and Dr. Luigi Martire (MATTM) have participated as Italian representatives in the SDWG meetings. Italy has also appointed an expert for the EG on Arctic Human Health, Dr. Vittorio Pasquali (University of Rome “La Sapienza”), who actively participated in the recent meetings.

**EBGCM.** Dr. Stefania Gilardoni (CNR-ISP) has replaced Dr. Antonello Pasini as Italian representative in the EG on Black Carbon and Methane, assuring continuity in the Italian engagement on a sensitive subject. In March 2019, Dr. Stefania Gilardoni submitted to the group the national report on black carbon and methane emission data and emission reduction strategies. The report was prepared with the active contribution of members of the Arctic Table. Dr. Gilardoni follows the discussion for the preparation of the most recent sector papers and the EBGCM summary report to be released in 2021.

**TFICA.** Dr. Ingrid Hunstadt (INGV) participated in all the meetings of this task force and contributed to its works. She was also the Italian representative to the previous task force on the same subject, TFTA.

Italy considers of paramount relevance the field of education and training on Arctic-related, environmental and sustainable development issues. The Ca' Foscari University in Venice launched last year a PhD course in Polar Sciences, in cooperation with CNR, INGV, the Bicocca University of Milan, the University of Pisa and the Insubria University, in addition to a Master and a PhD course in Science and Management of Climate Changes, organized with the Euro-Mediterranean Center on Climate Changes (CMCC) and OGS.

SIOI (Italian Society for International Organizations) has organized since 2016 a Master Course in Sustainable Development, Geopolitics of Resources and Arctic Studies, which includes specific lessons on the Arctic Council. The Arctic University of Tromsø coordinates one section of the Master Course. Since 2018, SIOI organizes “Arctic Connections”, an International Symposium which aims at strengthening bilateral relations with the Member States and Observers of the Arctic Council, identifying possible common areas of cooperation and dialogue. In September 2018, SIOI became the first Italian member of UArctic.

Finally, Italy considers of utmost importance the engagement of companies operating in the Arctic in the crucial challenge of balancing economic development and environmental conservation. In this respect, technological expertise of the Italian industry is a significant asset, offering comprehensive and innovative solutions to minimize effects on habitat and biodiversity and enhance the wellbeing of indigenous people.

If applicable, please describe in no more than one page your state's or organization's future plans for contributing to the work of the Arctic Council's Working Groups, Task Forces, and/or Expert Groups. Please highlight intentions to contribute to specific projects and to collaborate with Permanent Participants.

The budget law for 2018 allocated, for the first time, specific financial resources for research activities in the Arctic, establishing the Arctic Research Program on a first period of three years (PRA 2018-2020). All the objectives and topics of PRA are in line with the Arctic Council activities. In summary, they are: monitoring Arctic ecosystem changes; quantitative understanding of the causes of Arctic amplification; paleoclimate reconstructions; assessment of the changes of Arctic seas atmospheric and water column; analysis of the effects of climate change on the wellbeing of Arctic inhabitants and preservation of indigenous cultures. The actions include, inter alia, open calls for research projects, support for upgrading marine and terrestrial research infrastructures and long-term monitoring activities, implementation of a data system and a PhD course on Polar Sciences. The results of PRA actions already proved worthwhile and will undoubtedly be even more productive in the near future for the Italian contribution to the Arctic Council works.

One of PRA goals is to support Italian participation as an Observer to the Arctic Council. This has already allowed increasing participation of Italian experts in the meetings of subsidiary bodies and will certainly contribute to its further consolidation. Over the past few months, holding many events via videoconference has facilitated a broader participation, showing a strong interest of the Italian scientific community towards the Arctic Council works. Therefore, also thanks to resources provided by PRA, it is our intention to explore the possibility to expand our contribution to work programs and WGs projects, for instance in relation to AMAP (where Italy is actively engaged in 5 of the 7 expert groups) and the EPPR Circumpolar Wildfire project, promoted by the Gwich'in Council.

For the future Italian engagement in the Arctic, it is of utmost relevance the acquisition by OGS of a new research vessel, the icebreaker Laura Bassi, in substitution of the previous OGS Explora. Laura Bassi is an 80 m long vessel and can host up to 50 scientific personnel with an endurance of up to 60 days, and is being fully equipped with scientific instruments for different disciplines including geophysics, geology, physical oceanography, marine biology, and atmospheric observations. This research icebreaker, used in prevalence in Antarctica, is perfectly apt for the current conditions of the Arctic sea ice and the management is striving to actively collaborate with Arctic countries. The 2021 research campaign of Laura Bassi in the Arctic will certainly be useful for acquiring data to be shared in Arctic Council works.

The already mentioned IT-NAVY HIGH NORTH Program, launched for three years in 2017 by IIM, has been confirmed for the period 2020-2022 with an enhanced overview, having a look to the 3D mapping from satellite to seabed. The program is a result of a long-lasting national and international synergy between the main Italian research agencies, NATO-CMRE, JRC-UE and the Italian Navy. High North aims at contributing to oceans' knowledge in the UN Decade of Ocean Science for Sustainable Development 2021-2030. Results from the High North program have already been shared and will certainly produce interesting results to be shared within the pertinent Arctic Council working groups.

Italy is strongly engaged in the ASM process: ten new activities were proposed for ASM3 alongside with an updated status of the 14 ongoing ones (9 still active). In addition, Italy is involved in the Arctic Funding Forum, through CNR. In this framework, we intend to devote a special attention to subjects like collaboration with indigenous organizations and local communities, wellbeing of Arctic inhabitants and preservation of indigenous cultures, research and education.

If applicable, please describe in no more than one page your state's or organization's contributions to other aspects of the Arctic Council and its goals not covered by the previous sections since the time of your most recent report, or in the previous two years.

Italy has actively participated in SAON since its beginning, contributing to its committees for Arctic Data (ADC) and Observation and Networks (CON). Recently, thanks to CNR, Italy started to concretely support SAON Secretariat. It is our intention to enhance our current level of participation, mainly through actions devoted to increasing data fairness. Long-term measurements program, mainly dedicated to Arctic climate monitoring and understanding of Arctic processes, are operational at "Dirigibile Italia" Station (Ny Alesund, Norway), managed by CNR, and at the Thule High Arctic Atmospheric Observatory (Thule, Greenland). These programs contribute to the network of Arctic Observatories and provide data to different international data bases. Italy is also strongly involved in EU coordination initiatives, like Polarnet and ARICE, contributes to develop research infrastructures as SIOS and participates in coordination organisms like EPB and FARO. Italy is partner in the "International Network for Terrestrial Research and Monitoring in the Arctic" – INTERACT (II and III). This project promotes researches and monitoring all over the Arctic and the Italian Station "Dirigibile Italia is involved through Transnational, Remote and Virtual accesses.

The Italian scientific community, following the recommendations expressed in 2019 and 2020 SESS (The State of Environmental Science in Svalbard) reports, contributes to organize a SIOS (Svalbard Integrated Earth Observing System) workshop in November 2020 on harmonization of marine and terrestrial observation systems. A proposal led by OGS and the University of Tromsø for the reconstruction (through scientific drilling on the eastern side of the Fram Strait) of Northern Hemisphere climatic evolution and ocean circulation has been positively received and is being evaluated by the International Ocean Discovery Program (IODP). Numerical modelling of Northern Hemisphere ice sheets is being implemented by OGS in collaboration with the rest of the Italian scientific community, to simulate past conditions and predict future scenarios.

INRiM (Italy's national metrology institute) launched the "Arctic Metrology Laboratory", a common facility based in Ny-Ålesund to the benefit of data quality from several measuring installations and active projects in the Arctic. The laboratory allows the calibration of temperature and pressure instruments, the characterization of sensors dynamics, analysis and evaluation of mutual influences among the quantities.

The Italian Hydrographic Institute (IIM), member of the International Hydrographic Organization (IHO), is also an associated member of the Arctic Regional Hydrographic Commission (ARHC). IIM is partner in the proposal "Mapping the Arctic: Filling Gaps in the Arctic Geospatial Foundation to Support Research and Sustainability", which will be presented at the ASM3. The aim of the proposal is to fill the gaps in mapping and hydrographic data in the Arctic Ocean, with the contribution of IT-NAVY HIGH NORTH program and IIM, as member of GEBCO - SEABED 2030 project.

e-Geos, an Italian Space Agency (ASI) - Telespazio company, exclusive distributor of the Italian COSMO-SkyMed satellite constellation of ASI, is a partner of the EU H2020 project ARCSAR (Arctic and North Security and Emergency Preparedness Network) and has been recently awarded the EU H2020 project ARCOS (Arctic Observatory for Copernicus Sea Service) in cooperation with the EU SatCen.

Another interesting Italian initiative, in a good example of public-private partnership, is the Memorandum between CNR and ENI for the establishment of a research center on Arctic and climate change in Lecce. Current activities are focused on permafrost and the results can contribute to the Arctic Council works.