

# Cover sheet

Full name of state or organization:

**Italian Republic**

Date of submission:

21 novembre 2016

Observer's website, if appropriate:

[http://www.esteri.it/mae/it/politica\\_estera/aree\\_geografiche/europa/artico](http://www.esteri.it/mae/it/politica_estera/aree_geografiche/europa/artico)

Information for appropriate contact person

Full name: Francesco Puccio

Email: [dgue.artico@esteri.it](mailto:dgue.artico@esteri.it)

Telephone: +390636914068

Organization or department: Ministero Affari Esteri, Direzione Generale Unione Europea

Job Title: Coordinator for Arctic Policy

Full mailing address:

Ministero degli Affari Esteri e della Cooperazione Internazionale  
Direzione Generale Unione Europea  
Piazza Farnesina 1  
00135 Roma

Is your state or organization still interested in continuing as an Observer of the Arctic Council?

X Yes ☐ No

## Observer Report

Italy has been holding observer status in the Arctic Council since the Ministerial Meeting in Kiruna in 2013. Italy views the Arctic Council as the regional high ranking decision-making body. In line with its long-standing tradition of research and scientific presence in the Arctic, Italy is keen to contribute actively to the goals and objectives defined in the Ottawa Declaration, recognizing the sovereignty, sovereign rights and jurisdiction in the Arctic of the Arctic States, and respecting the values, interests, culture and traditions of Arctic indigenous peoples and other Arctic inhabitants.

Vis-a-vis the challenges posed by global warming and the need to pursue concerted efforts by the international community, Italy is giving high priority to strengthening scientific co-operation on climate change and environmental protection. On the occasion of the recent Arctic Science Ministerial in Washington, the Italian Minister for Education and Scientific Research pledged to increase our financial support to Arctic Research and presented new projects aimed at fostering and increasing international collaboration. Moreover, Arctic science will be included in the National Research Plan as part of the National Polar Program.

In December last year, through the Ministry of Foreign Affairs and International Cooperation (MFAIC), Italy published a National Strategy in the Arctic ([http://www.esteri.it/mae/resource/doc/2015/12/strategia\\_artica\\_09.12.2015.pdf](http://www.esteri.it/mae/resource/doc/2015/12/strategia_artica_09.12.2015.pdf)), detailing operational guidelines meant to enhance our role in the area and assure a qualified presence in international fora. The paper states a clear political commitment, inter alia towards the goals of the Arctic Council, which also results in public support to research and scientific cooperation, as well as in actions encouraging further involvement of the private sector.

In this respect, the technological expertise of the Italian Industry has also proved to be a significant asset to support the sustainable development of the Arctic, through comprehensive innovative solutions allowing to: minimize effects on the marine habitat and biodiversity; enhance the wellbeing of indigenous people; improve operations' safety; monitor infrastructures' and environment integrity and secure route navigability. The political dimension of our engagement in the whole range of Arctic issues stems from our participation not only in the work of the Arctic Council (in its various formats), but also in other relevant international bodies. Italy is signatory to most of the international treaties and conventions related to the Arctic region and is very active in the framework of relevant EU programs. Bilaterally, we have developed enhanced cooperation with Arctic partners.

For internal coordination purposes, the MFAIC (a senior representative of which is regularly present at SAO meetings) relies on a network of domestic stakeholders, and on an informal, open-ended advisory body, the "Arctic Table", that includes officials from other Ministries, Arctic experts, representatives of research agencies, scientific institutes and high-tech business groups.

Last but not least, the MFAIC organized in Rome this year (10th and 11th of October) a two days event to mark the 20th anniversary of the Ottawa declaration, including a conference with speakers from several Arctic countries and a scientific workshop. The event has been attended by diplomats, scientists, stakeholders, academics and general public and has been echoed in the Italian press

Even before obtaining observer status, Italy has been contributing to the work of the Arctic Council by supporting its subsidiary bodies through the participation in meetings and discussions, the submission of reports and documents and the provision of expertise in environmental monitoring and control. Italy also participates in the International Arctic Science Committee (IASC). Our involvement in subsidiary bodies over the last two years can be summarized as follows:

**AMAP:** Dr. Angelo Viola (CNR-ISAC, HoD) and Dr. Michele Rebesco (OGS) have been participating to AMAP WG Meetings. Dr. Alessandra Lucchetta (CNR-ISMAR) took part in the AMAP/AOA II Scoping Meeting (May 2014). Dr. Umberta Tinivella contributed as peer reviewer to "AMAP Assessment 2015: Methane as an Arctic climate forcer"

**PAME:** Italian experts (dr. Stefano Aliani, CNR-ISMAR; dr. Luca Fiorani, ENEA) have participated since 2012 in some of PAME meetings.

**ACAP:** Dr. Ian Hodgecock presented an overview of work of Italy in the Arctic at the ACAP meeting in Rovaniemi (January 2015) and has been involved ever since in the work of this WG.

**BCM Expert Group:** Italian experts, Dr. Antonello Pasini (CNR-IIA) and Prof. Roberto Udisti (Florence University) provided a national report on Italian actions and policies to reduce emissions and mitigate the effects of Black Carbon and Methane on climate. They will provide contribution to the final report of the EG.

**EPPR:** Experts of the Italian Navy have started recently to contribute to EPPR activities. At the Montreal meeting they participated in EPPR EG "Search and Rescue" (SAR) and IOGP-EPPR joint workshop on "Development of Standards for oil pollution prevention". They also took part in the 2nd table top International exercise of the MOSPA Agreement.

**SDWG:** Dr. Elisabetta Colaiacomo (Ministry of the Environment and of the Protection of Sea and Land) recently started to chip in WG activities, with the aim to identify areas/topics to which Italian experts could fruitfully contribute.

**SCFT:** Italy has paid great attention to the works and overall objectives of SCFT, assuring its participation in most meetings, with a view to enhance scientific cooperation. Italy has always been convinced that the role of non-Arctic States in the advancement of scientific knowledge in environmental and social changes in the Arctic should be recognized. We are content with the text emerged from the task force.

**TFTIA:** The National Institute of Geophysics and Vulcanology (INGV) has provided expertise in the field of GNSS Research and Application to Polar Environment. Experts also illustrated activities of the SCAR (Scientific Committee on Antarctic Research) EG GRAPE they coordinate. Support and contributions will be provided to the final report of the TF.

**Collaboration with Permanent Participants:** A delegation of the Saami Council visited Italy in June 2015 and met at the Farnesina with Secretary of State Della Vedova. They discussed possible areas of cooperation.

If applicable, please describe in no more than 1 page your state 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.

**AMAP:** More generally, Italian Research agencies are increasing observations and research activities in relation to several topics highly relevant for AMAP. CNR, also in cooperation with Italian Universities, is increasing its Arctic activities:

- to provide an assessment of Arctic aerosol, local sources and long distance transport (project GULP); -
- to improve the knowledge of Svalbard snow cover and to record the evolution on climatic time scales of snowpack in the glacial and periglacial area (MOSSCO);
- to contribute to monitor spectral UV radiation and investigate effects at high and middle latitudes of spring ozone depletion episodes.

Furthermore, ERA-PLANET (the European Network to observing our changing planet), a European program coordinated by CNR, identifies polar areas and natural resources as one of the four strands of most relevant activities and will provide substantial contributions to AMAP objectives (especially expert Groups on POPs-Persistent Organic Pollutants, heavy metals, SLCP-Short Lived Climate Forcers).

**ACAP:** Activities in ERA-PLANET will also largely contribute to the working of this WG. ENEA's contribution might include use of laser radar for remote measurement of black carbon.

**PAME:** Participation of Italy is very intense and our representatives have been invited to submit a paper and show a presentation at the next PAME meeting. Italian research activities may be useful for the protection of the marine Arctic ecosystem.

**EPFR:** Italian Navy may contribute to the development of an Arctic SAR Joint Manual offering experience acquired in life-saving operations in the Mediterranean. Other contributions of Italian Navy Hydrographic Institute (IIM) may involve bathymetry and hydrography as well as digital cartography. ENEA and CNR contribution will include use of laser radar and satellites for the detection and assessment of oil spills by remote sensing.

**SDWG :** Italy is planning future regular participation in meetings of this Working Group and will examine possibilities of contributing to individual projects in areas where Italian technologies and know-how might be of interest for sustainable development in Arctic ecosystems.

**Collaboration with Permanent Participants:** After the meeting with the Saami Council in 2015, Italy is ready to envisage forms of collaboration with Permanent Participants in areas where our expertise and know-how could be useful for them.

Finally, Italy confirms its readiness to host meetings of the Arctic Council subsidiary bodies and/or seminars and workshops to be organized under the umbrella of the AC.

If applicable, please describe in no more than 1 page your state 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.

In the last two years Italy has been participating actively in SAON (Sustaining Arctic Observing Networks) activities and meetings. Italy sits in the SAON Board and contributes to its committees for Arctic Data (ADC) and Observation and Networks (CON). In SAON-CON, Italy is engaged in developing thematic inventory of activities for atmospheric physics. The national inventory of existing Arctic observation programs and platforms has been submitted to SAON, and an IT platform to secure regular update of such inventory is under implementation at CNR.

Italy is actively supporting polar research and promotes cooperation with Arctic as well as non-Arctic countries through several projects which are in line with the goals of the AC. Our main asset for monitoring and long-term activities in the Arctic is the CNR permanent Arctic Scientific Station Dirigibile Italia (Ny-Ålesund, Svalbard). CNR has also implemented several research projects and permanent monitoring infrastructures at Ny-Ålesund. Other activities are performed by ENEA and INGV at Thule (Greenland) hosted by DMI. OGS Explora performed several geophysical surveys on the NW Barents Sea Margin. Activities involve research Agencies as well as several Universities. In the period 2014-2016, efforts have been made to increase the multi-disciplinary and interdisciplinary approach of observing activities. At European level, Italy has been/is involved in several research projects devoted to the Arctic. Due to limited space, here only some of the main projects can be mentioned, such as EUAIC, EU-POLARNET, EUROFLEET-2, ICE-ARC, INTERACT. Italy is also strongly committed to promoting scientific bilateral cooperation with various countries, and especially collaborative activities exist with Canada, Norway, USA and Russia. A more detailed synthetic outline of funding sources, infrastructures and projects run by the Italian research agencies is detailed in annex 1 and has to be considered an integral part of this report.

The Hydrographic Institute of Navy, as member of GEBCO, actively contributes to working of IBCAO project for an International Bathymetric Chart of the Arctic Ocean, supplying data and expertise. OGS is in the Editorial Board of IBCAO.

Among other initiatives in the education/ public information fields we can include the setting up in 2016 by the Italian Society for International Organisations (SIOI) of a Master course in Sustainable Development, Geopolitics of Resources and Arctic Studies. SIOI organises also on a regular basis a number of conferences and lectures on arctic issues.

A number of Arctic events are taking place in Italy. Among others, we can mention the promotion of the Arctic at the Science Festival in Genova (October-November 2016) and the celebration of the centenary of the birth of the Italian Explorer Silvio Zavatti, organized by The Polar Institute in Fermo, which he founded in 1944. The Institute publishes also a quarterly journal IL POLO (The Pole), bilingual in Italian and English, and collaborates with the University of Svalbard. In the past, other conferences were organized by the MFAIC, in collaboration with Universities and private cultural and scientific institutions, in Venice (July 2014 -Arctic, climate change and ecosystem), in Rome (October 2014), and again in Venice in December 2014 (Climate change and future scenarios in the Arctic Region). During a recent Conference organized at the Italian Chamber of Deputies a Report "Linguistic minorities in the Arctic and Italy: a legal comparison" has been presented. Regular Italian participations (institutional, scientific, industrial) are registered to the major Arctic Fora (Arctic Circle, Arctic Frontiers etc.).





## Italy

### Points of Contact:

Consiglio Nazionale delle Ricerche (CNR), Department of Earth System Science and Environmental Technologies (<http://dta.cnr.it>)

### Arctic Research Policy and Goals

Italy's Arctic policy is to increase knowledge of Arctic change, and its impacts and feedbacks, through scientific observations and monitoring, multidisciplinary research, and by enhancing international scientific cooperation. This policy is stated in the Italian Arctic Strategic and is implemented by Consiglio Nazionale delle Ricerche (Italian National Research Council, CNR), in collaboration with universities and research organizations, including the Italian Space Agency (ASI), Istituto Nazionale di

Oceanografia e Geofisica Sperimentale (OGS), Istituto Nazionale di Geofisica e Vulcanologia (INGV) and the National Agency for New technologies, Energy and Sustainable Economic Development (ENEA). Italy's overarching Arctic research goal is to obtain the necessary knowledge and understanding of climate change in order to mitigate its impacts, to increase resilience, and to enable sustainable, ecosystem-based management of resource development in the region.

### Main Arctic Research Funders

Italian Ministry of Education, Universities and Research (MIUR, <http://www.istruzione.it>) supports research and innovation in the polar regions. This involves scientific research in the Arctic and Antarctica, such as observing and monitoring the atmosphere, sea ice, snow, and glaciers, and modeling of climate change and its impacts on terrestrial and marine ecosystems.

Consiglio Nazionale delle Ricerche (CNR) – The Italian National Research Council (<https://www.cnr.it/en>) supports research activities carried out at the CNR Arctic Station *Dirigibile Italia*. These include atmospheric and climate change studies, geology and geophysics, marine and terrestrial ecosystems, and paleoclimate and marine environment studies in the Kongsfjord, in the Svalbard Islands (Norway).

Agenzia Spaziale Italiana (ASI) – ASI (<http://www.asi.it>) uses various satellite constellations, including the COSMO-SkyMed, to support observational research that focuses on environmental monitoring and on surveillance applications to manage and respond to natural and anthropogenic hazards.

Ministero degli Affari Esteri e della Cooperazione Internazionale (<http://www.esteri.it/mae/it>) supports international collaborative research projects in the Arctic.

Istituto Nazionale di Oceanografia e Geofisica Sperimentale (OGS) supports Arctic oceanographic research and operates the *R/V OGS Explora*.

### Major Arctic Research Initiatives

**CCT-IP.** *The Climate Change Tower Integrated Project* investigates Arctic atmospheric boundary layer dynamics, surface energy budget and fluxes, and the roles played by complex coupling processes involving air, aerosols, clouds, snow, ice and land (permafrost and vegetation).

**MELT.** Using an internationally cooperative approach, and as an element of a pan-Arctic observing network, the scientific objectives of the project *Monitoring and Investigating Arctic Change along a Longitudinal Transect* are to strengthen and integrate Arctic observations, and to enhance understanding of complex processes involved in climate change.

**PERMASAR** conducts remote sensing of ice, snow and permafrost using DInSAR techniques. The objective of this research is to increase knowledge about the effects of global warming on permafrost, and to monitor small ground displacements and their effects on infrastructures in support of risk management.

**ARCA.** The project *ARctic present Climate change and pAst extreme events* is funded by MIUR and aims to develop a conceptual model of the mechanisms



responsible for the release of large volumes of fresh, cold water from melting ice caps. The processes in this complex system are investigated by using both paleoclimatic and modern observations.

**DRAFT** (*Damping Role of Arctic Fjords in the climate change*) and **SNOW** (*Sensor Network for Oceanography in Shallow Water*). The major aim of these CNR projects is to collect time series of oceanographic data in *Kongsfiord* using permanently mooring arrays to understand how climate change is affecting fjord systems, and how the effects of this change may be mitigated.

**UVASS**. The objectives of the CNR project *Unmanned Vehicles for Autonomous Sensing and Sampling* are to develop and use unmanned marine vehicles and drones to perform *in situ* measurements in areas that are difficult or dangerous to access, such as glacier fronts.

**GULP**. The main goal of the *Gruebadet Atmospheric Laboratory Project* is to assess Arctic aerosols, to understand local sources and long distance transport, and to increase knowledge of the complex processes that characterize the snow-air interface.

**MOSSCO**. The project *Morphological and chemical evolution of the Svalbard snow cover*, led by CNR and University of Venice, studies Svalbard snow cover and documents snowpack changes in glacial and periglacial areas.

### Arctic Research Infrastructures

**CNR Arctic Station 'Dirigibile Italia'**. The Arctic station (<http://arcticnode.dta.cnr.it/welcome>), located at Ny-Ålesund, Svalbard, is a multidisciplinary research station operated by CNR. It can host up to seven scientists working in laboratories and offices. Active since 1997, it is named after the Umberto Nobile's airship Italia expedition of 1928.



The CNR Arctic Station Dirigibile Italia – Ny-Ålesund, Svalbard (Photo: Giuseppe Pellegrino, Ca' Foscari University, Venezia).

**The Amundsen-Nobile Climate Change Tower** is a CNR-operated facility connected to the Italian Arctic Station in Ny-Ålesund. The tower is 32 m high and is equipped with instruments to investigate surface radiation and energy budgets, planetary boundary layer dynamics, spectral surface reflectance, and greenhouse gas fluxes.



The Amundsen-Nobile Climate Change Tower during maintenance (Photo: Fabio Giardi, University of Firenze).

**SIOS** (*Svalbard Integrated Arctic Earth Observing System*). Italy participates in SIOS, within the European Strategy Forum on Research Infrastructures (ESFRI) in support of a pan-Arctic observing system. SIOS coordinates and develops existing and new research infrastructure in Svalbard. The SIOS objective is to increase knowledge about climate change and develop climate scenarios. SIOS also coordinates open data, transnational access, logistics and training.

**Gruebadet Atmospheric Laboratory**, also connected to the Italian Arctic Station, and operated by CNR and the University of Florence, is a modern laboratory with atmospheric and aerosol instruments.

**COSMO-SkyMed** is an ASI satellite constellation consisting of four medium-size satellites equipped with a microwave high-resolution synthetic aperture radar (SAR) operating in X-band.

**R/V OGS Explora** is a polar capable, research vessel equipped for geophysical and oceanographic research.

**Italian All-Sky Cameras For Auroral Observations**. In a cooperative effort, cusp auroras are studied with two cameras, operated by INAF (Italian National Institute for Astrophysics), and located in Ny-Ålesund and in Daneborg, on the northeastern coast of Greenland.

**Italian Arctic Data Center**. This digital center manages Arctic data and observations. The center is operated by CNR in cooperation with all other Italian research Institution.