



Sustainability Report 2017

This is the RINA Communication on Progress in implementing the Principles of the United Nations Global Compact and supporting broader UN Sustainable Development Goals.

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CEO statement

Sustainability is one of the highest priorities of our time and society places increasing importance on environmental and social issues.

We believe that the pursuit of excellence also means shaping a more sustainable future for the world and we have the responsibility to align our activity with this ambitious goal.

For this purpose, our Ethical Code sets out our highest commitments to human rights, labour standards, the environment and the fight against corruption.

We constantly work to integrate these commitments into our activities, with the aim of adding value both within RINA and for all external stakeholders.

In 2017 we continued to increase our efforts in terms of sustainability, both internally for key functions and processes and externally in our services and projects. Our twin goals are to minimise the impacts of our operations and support customers by generating positive impacts for their business.

This report describes our actions to integrate the Global Compact Principles and the UN Sustainable Development Goals into our business strategy, culture, dedicated services and daily operations.

Ugo Salerno
Chairman and CEO
RINA S.p.A.

Genoa, August 2018



RINA approach to sustainability

RINA is evolving and growing rapidly, both organically and through external acquisitions. We therefore have a constant need to look at sustainable solutions and take a structured approach in the conduct of our business. This allows us to develop and deliver new services that have a positive impact on society as well as the environment.

RINA has been a signatory to the United Nations Global Compact since 2016 and is reporting according to the UN Global Compact Active Level. We have committed to embed sustainability as one of the key drivers of our business strategy and to ensure this approach is reflected in the services we deliver to our clients. We actively support the 10 Principles of the UN Global Compact relating to human rights, labour standards, the environment and the fight against corruption. We report and communicate annually to our stakeholders on progress made to implement these principles.

Our path towards sustainability involves a number of internal initiatives designed to increase awareness of more sustainable ways to approach our business and carry out our activities, as well as to develop innovative services that generate positive impacts for our stakeholders and for our customers' projects and businesses.

We participate in national and international networks focused on corporate social responsibility (CSR) and sustainability. These include Fondazione Sodalitas, the Italian partner of CSR Europe, and Transparency International and its Italian Business Integrity Forum supporting voluntary anti-corruption initiatives. We have developed a CSR policy whose principles are embedded into our business development strategy.

We have enhanced our approach to sustainability, through a Corporate Social Responsibility strategy, formalised in four pillars: Governance, People, Planet and Innovation. We want our stakeholders to feel confident that we do our best to manage our social, environmental and economic impacts. We maintain a proactive and transparent dialogue with our stakeholders to better understand their expectations and build shared values.

The integrated Enterprise Risk Management (ERM) framework that we have adopted takes into account strategic, financial, operational and compliance risks as well as environmental, social and governance (ESG) criteria. The aim is to drive continuous improvement in each of these areas.

RINA is engaged in rule development processes within a number of technical associations, committees and working groups, at both the national and international level, with the purpose of sharing research, results, technical knowledge and best practices.



Corporate Social Responsibility

The RINA Corporate Social Responsibility Policy, issued for the first time in April 2016, sets out our commitment to sustainable development. It is built around four pillars:

Governance, by:

- integrating sustainability into our global business activities;
- creating long-term value;
- increasing returns for investors and shareholders;
- ensuring the highest level of integrity;
- fighting against any form of fraud and corruption;
- following fair and correct business practices;
- following international best practices.

People, by:

- respecting human rights in our organisation and supply chain;
- respecting labour organisation principles;
- meeting health and safety regulations;
- creating a safe, participatory and inclusive workplace;
- banning any discrimination in respect of employment and occupation;
- considering diversity as an opportunity and meritocracy as a must.

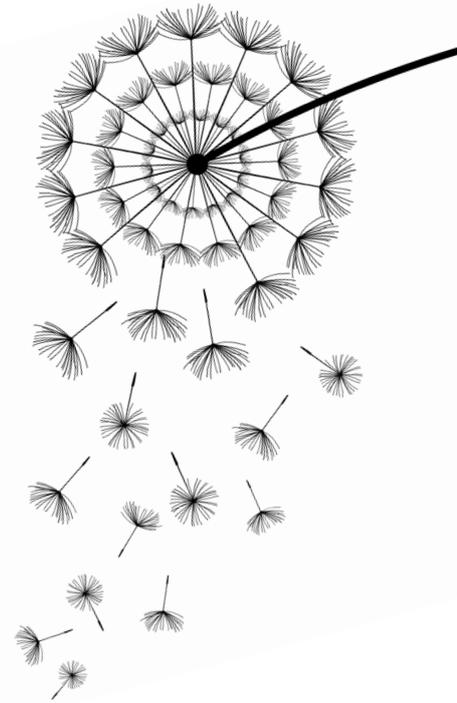
Planet, by:

- meeting environmental protection regulations;
- increasing energy efficiency;
- reducing CO₂ emissions;
- minimising and mitigating any environmental impacts;
- creating value in local communities;
- sharing social values with our stakeholders.

Innovation, by:

- promoting research and sustainability-driven projects and services;
- delivering innovative solutions to our stakeholders;
- offering services that support customers in generating positive environmental and social impacts through their projects and businesses.





About this document

RINA has been a signatory to the United Nations Global Compact since 2016.

This report reflects our self-assessment on how we work to continuously meet the UN Global Compact Active Level criteria¹. It includes some of our initiatives to ensure a sustainable business-oriented approach.

RINA is committed to communicating on an annual basis its advancements and developments towards the goals' realisation. The report is publicly available on the RINA website: www.rina.org

RINA welcomes questions, comments and feedback from all its stakeholders.
Please contact csr.rinagroup@rina.org

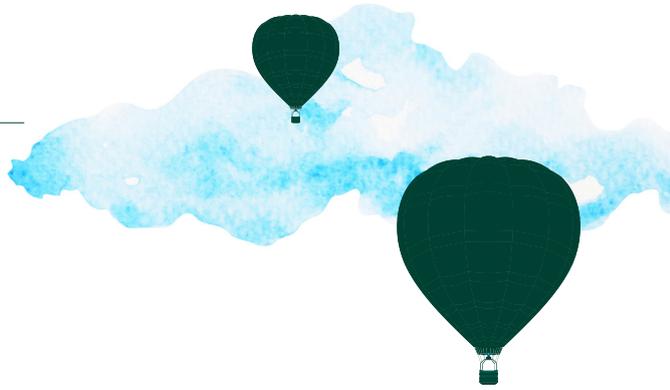


INTERNAL APPROACH
CSR POLICY
HUMAN RIGHTS
ENVIRONMENT
LABOUR
ANTI-CORRUPTION

BUSINESS APPROACH
MARINE
ENERGY
INFRASTRUCTURE
INDUSTRY
BUSINESS ASSURANCE

The 17 Sustainable Development Goals (SDGs) define global sustainable development priorities and aspirations for 2030 and seek to mobilise global efforts around a common set of goals and targets. The SDGs call for worldwide action among governments, business and civil society to end poverty and create a life of dignity and opportunity for all, within the boundaries of the planet.

¹ In line with the differentiation levels set by the UNGC.



RINA at a glance

Delivering tangible benefits for the growth of industries all over the world.

RINA is a multinational player that provides a wide range of high-quality, tailored solutions throughout project lifecycles in the Energy, Marine, Certification, Transport & Infrastructure and Industry sectors.

We work to deliver services that contribute to increasing the qualitative level of the market and improving the wellbeing and safety of society, building sustainable values for future generations. We believe in the value of visionary ideas and the importance of protecting life and the environment. This is why innovation and sustainability run through our business and contribute to increasing the reputation of both RINA and our customers, who have committed to sustain the planet and make a positive contribution to society.



3,700+ people
worldwide



170 offices in
65 countries



€ 437 M
turnover



ENERGY

RINA's energy business supports private and public operators worldwide to sustainably meet growing market demands in a wide range of energy sectors, including oil and gas, conventional power generation, renewables and power transmission. Our services are delivered under a strong overarching sustainability approach to ensure environmental and social impacts are either reduced or completely mitigated.

We provide a vast array of engineering and consultancy, testing, inspection and certification services aimed at all players in the sector. Our services help operators to meet sustainability targets as well as ensure compliance with the highest standards of engineering and construction.



MARINE

Marine is one of our core businesses, with RINA recognised as one of the world's leading marine classification societies. Our integrated services for the complete shipping cycle include design, building, shipyard management, inspection and testing of materials and components to meet class requirements. They apply to cargo ships, ferries, ro-ro ships, passenger ships, yachts, cruise ships, navy vessels and specialist vessels such as LNG carriers.

Our marine sector is at the forefront of designing and delivering sustainable products and solutions for our clients. These include specific in-house class notations and solutions to increase comfort, safety and energy efficiency, ranging from Green Plus and Hybrid Propulsion additional notations to smart ships.



CERTIFICATION

Our third-party certification services give stakeholders an independent guarantee of compliance with applicable regulatory standards. They are designed to protect companies across all aspects of projects, operations, logistics and legislation. Our certification services cover a wide range of areas including climate change, management systems (quality, environment, health and safety, social accountability), product safety and quality, environmental sustainability, social accountability, food traceability and certification, personnel, transport infrastructure and green buildings.

Our Certification business unit has achieved significant results in terms of sustainability-driven services in the areas of food certification and sustainable food production and traceability, biofuels, bioliquids and bio-based materials, as well as biomethane and biomass supply chains.

RINA was the first certification body to be accredited for ISO 37001 anti-bribery system certification.



TRANSPORT & INFRASTRUCTURE

Our Transport and Infrastructure business unit supports clients with dedicated, bespoke services in the infrastructure, transport and logistics markets including ports, railways, roads and highways, buildings, dams and hydraulic infrastructures. We deliver comprehensive, proven, dependable and efficient third-party testing, inspection, certification, design, consultancy and owner's engineering services to a full range of public authorities, private contractors, insurance companies, investors and owners.

We develop innovative design solutions for green buildings, historical compounds and a wide range of infrastructures. In addition, our services focus on long-term greenhouses gas emission reduction, masterplans and climate resilience solutions to minimise the vulnerability of socio-ecological systems associated with the environmental consequences of climate change.



INDUSTRY

The Industry business unit supports clients in boosting their competitiveness wherever materials, technologies and innovation play a critical role. We provide confidential expertise and ensure real progress in industrial sustainability. Our innovative engineering services support governments, public bodies and industrial operators throughout the entire lifecycle of a project. This includes the design and development of advanced products, the application of innovative solutions, verification and validation, product/software assurance and improvement of production processes.

Some of our recent achievements in the area of sustainable development for Industry include: RINA's Green Label voluntary green declaration, innovative approaches to additive manufacturing and research for the bio-economy industry to create novel sustainable materials from agricultural and forestry waste. We have also developed an innovative approach to lifecycle assessments for critical industrial assets and worked on a new EU research project to develop a cost-effective sustainable reinforced concrete for long-lasting and added-value applications.

Some examples of sustainability-driven services to support clients in developing their projects in line with the expectations of the SDG framework are included in the "Our services for sustainability" section of this report.

The UNGC 10 Principles

● ● HUMAN RIGHTS



Businesses should support and **RESPECT THE PROTECTION** of internationally proclaimed human rights; and make sure that **THEY ARE NOT COMPLICIT IN** human rights abuses.

● ● ● ● LABOUR



Businesses should uphold the freedom of association and the effective recognition of the right to **COLLECTIVE BARGAINING**; the elimination of all forms of **FORCED AND COMPULSORY LABOUR**; the effective abolition of **CHILD LABOUR**; and the **ELIMINATION OF DISCRIMINATION** in respect of employment and occupation.

● ● ● ENVIRONMENT



Businesses should support **A PRECAUTIONARY APPROACH** to environmental challenges; undertake initiatives to promote **GREATER ENVIRONMENTAL RESPONSIBILITY**; and encourage the development and diffusion of **ENVIRONMENTALLY FRIENDLY TECHNOLOGIES**.

● ANTI-CORRUPTION



Businesses should work **AGAINST CORRUPTION** in all its forms, including extortion and bribery.

Based on the Universal Declaration of Human Rights, the International Labour Organization's Declaration on Fundamental Principles and Rights at Work, the Rio Declaration on Environment and Development, and the United Nations Convention Against Corruption, the 10 Principles of the UN Global Compact guide organisations in meeting fundamental responsibilities in the areas of human rights, labour, environment and anti-corruption.



Human rights

OUR COMMITMENT

As foreseen in article 2 of the Italian Constitution and in international treaties, the respect of human rights is an essential principle. RINA promotes and defends these rights in every circumstance and repudiates all discrimination based on gender, ethnic group, language, religion, politics or social and personal conditions. RINA's subsidiaries in the UK have developed appropriate actions to be in compliance with the Modern Slavery Act.

Our key priorities are to:

- value diversity and the respect of privacy rights;
- fight against modern slavery;
- build partnerships to improve our positive impact on society.

We work towards achieving the ambition of SDG 5 for gender equality, SDG 10 to promote the social and economic inclusion of all and SDG 17 to promote effective private and civil society partnerships.



KEY INITIATIVES AND RESULTS

Whistleblowing platform

In 2017, RINA implemented a whistleblowing platform to enhance the channels of communication available to all internal and external stakeholders. Acting as a form of grievance mechanism, it can be used to report alleged violations of the RINA Ethical Code, with specific reference to human rights. The platform is freely available on the RINA website, along with information about the procedure.

Local communities

RINA is committed to delivering and supporting projects and initiatives aimed at creating social value. In 2017, these included:

Teatro Carlo Felice sponsorship: In 2017, we began a fruitful collaboration with the Carlo Felice theatre in Genoa, one of the city's most prestigious foundations. Through this sponsorship, we wish to further sustain the preservation of Italy's history and culture and the development of new art. To consolidate our collaboration with the Carlo Felice theatre and to officially launch our new company brand, in December 2017 we dedicated an evening of drama and musical performance at the theatre to our clients.



School of Peace: In 2017, we supported the Community of Sant'Egidio in opening the 12th School of Peace in Genoa. Our contribution allowed the community to redevelop the classrooms of the Istituto Scolastico Aldo Moro in the district of Prà and to make it safe with all the necessary facilities. Schools of Peace are free centres that facilitate integration into school and provide concrete support to families, while offering a more open model of education. As a donor, we wish to give robust and loyal support to children's development, helping them to overcome barriers and discrimination.

Food and non-food donations in Tortona: The RINA laboratory in Tortona, Italy provides testing for clients to check compliance with regulations or voluntary quality management systems. In 2011, RINA decided to start a programme to support the charitable association Casa di Accoglienza di Tortona. All samples not used for testing or that have concluded the testing period and the mandatory storage period are checked for compliance and donated. Every year since the programme started, we have been able to donate around 100 boxes of food and non-food products, with an estimated weight of over 500 kg.

Meals for Acquasanta earthquake victims: In 2017, we continued to support the Helpcode initiative known as Aggiungi un pasto a tavola (Set an extra place at the table). We have provided 1,000 meals to young students in Acquasanta, an Italian village severely damaged by the 2016 earthquake.

Promoting maritime heritage: In 2017, RINA supported a voyage of the historical schooner Oloferne with technical assistance, information and financing. Part of the Museo Navigante (Sailing Museum) project, the schooner travelled from the Adriatic to the Tyrrhenian Sea, visiting coastal regions along the way to promote Italian seafaring heritage. The voyage ended at the major maritime festival of Escale à Sète in March, with Oloferne acting as a representative of Italian maritime museums.

UK fundraising initiatives. We were involved in several UK fundraising initiatives in 2017, including:

- **Battle of the Bands:** Won by Brighton-based band the G59ers, this musical event raised funds for the charity Renewable World;
- **Red Nose Day:** Events included a bake-off competition and cake sale, a sweepstake and breakfast baps, all raising funds for Comic Relief;
- **Macmillan coffee morning:** A bake-off competition and cake sale raised funds for Macmillan Cancer Support;
- **Earth Wind & Tyre:** RINA was one of the sponsors of this two-day cycling event, with two RINA colleagues participating in the race to raise funds for Renewable World.

Privacy and the GDPR

The General Data Protection Regulation (GDPR), the biggest ever change to the regulatory landscape affecting the digital economy, took effect in the European Union on 25 May 2018. The unprecedented scope of the GDPR puts Europe at the forefront of global privacy regulations. These high standards will bring back the trust we need to be successful in a global digital economy.

RINA has decided to extend its approach to the GDPR worldwide. In 2017, a Working Group was created to define the implementation steps, including a series of interviews with all those responsible for relevant processes across RINA. We have consequently implemented all technical and organisational measures needed to ensure a level of security appropriate to the risks identified, as well as a programme for continuous improvement.



IT security

RINA is strongly committed to IT security. Due to the nature of our business, we continuously strive to strengthen the protection of privacy, confidential information and intellectual property. We have developed a global IT Security Policy based on the ISO 27001 standard and in compliance with the applicable Italian law on information security and the protection of the privacy and personal data of European citizens.

The policy and procedures attest to the importance that RINA places on the protection of the information managed within its IT systems. They represent a commitment to implement all reasonable organisational and technical measures to mitigate the growing risks in the area of cyber security.

At least once a year, a vulnerability assessment (VA) and a penetration test (PT) are carried out to test the effectiveness of our system and procedures. Any reported findings are used to guide plans and investments aimed at continuously improving the security of internal information, as well as data belonging to our clients. Our procedures are based on the wide range of certification and support services we offer clients in this area.

Supply chain

RINA is actively improving its human rights impact assessment in order to adequately identify and address actual and potential adverse impacts on human rights. RINA suppliers are mainly consultants, practitioners and suppliers of goods and services. Although the level of potential risk identified in our supply chain is very low, we nevertheless continuously improve our qualification process to account for social and human rights aspects.

Through an internal due diligence activity, we have identified some opportunities for improvement in our supplier qualification process. In line with the consolidated qualification process implemented for RINA companies in Italy, covering both technical and administrative aspects, suppliers commit to carry out their business activities in compliance with the principles laid down in the RINA Ethical Code and to declare any proceedings or judgements relating to child labour and other forms of human trafficking and exploitation. A new procedure for supplier qualification will be issued in 2018 in order to harmonise the approach, standardise activities and strengthen control.

To fulfil the requirements of our Enterprise Risk Management framework, the qualification process has been developed to be applied worldwide by all RINA companies, taking into account local regulations and in compliance with guidelines provided by Corporate.



Labour

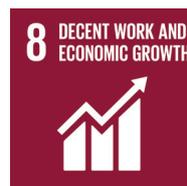
OUR COMMITMENT

We strive to provide our people with decent, productive work and the prospect of a stable and secure future. People are our most important assets and have a central role to play in supporting the sustainable growth of our organisation.

We respect the diversity of all employees and we invest in their development and professional growth, enhancing their technical skills, their problem-solving capacity and their approach to clients' needs, in line with our company values.

We also work to maintain a safe and friendly working environment for our staff, with particular attention to health and safety issues. We apply risk management tools to plan safe journeys for people travelling abroad to countries potentially exposed to health and security risks. Our aspiration is to be an employer of choice and to achieve zero harm in our operations.

We work towards the ambition of SDG 8 to ensure decent work for all, including safe and secure working environments, and SDG 3 to promote health and wellbeing and to strengthen the capacity for managing national and global health risks.



KEY INITIATIVES AND RESULTS

Smart working

In 2017, we developed a flexible working initiative named WorkLifeBalance@RINA. The pilot phase is planned for early 2018 for a selection of business areas before rolling out the project in the near future.

We believe that flexibility gives a sense of personal control and ownership, as well as care and responsibility. Together, this translates into higher motivation and more productivity, creativity, performance and personal commitment. Empowerment will make our colleagues more confident and able to take decisions independently, with consequent improvements in efficiency and effectiveness.



Fair employment and remuneration

At RINA, the workforce is a valuable asset and we work to maintain a constructive approach in the management of employees throughout our organisation worldwide. Work contracts are applied in line with local labour regulations, according to overarching company guidelines defined by the Corporate HR department and implemented by local HR managers. We cooperate constantly with trade unions to help address and solve any issue that arises. Appropriate employment policies are set out, providing information regarding workers’ rights under national labour and employment law. All practices reflect a worldwide culture where individual capabilities and potential are valued. Our practices reflect our long experience as a Social Accountability certification body. Our reputation as an employer benefits from our efforts to encourage positive relationships with employees and follow international standards on working conditions. The remuneration policy is aimed at attracting and retaining the best talents, by assuring internal pay equity and external competitiveness in terms of compensation packages. In terms of total reward, additional compensation beyond the salary takes into consideration the needs of staff members and their work-life balance. These include healthcare assistance and a range of benefits (accident insurance, tax assistance, scholarships for employees’ children, discount schemes with selected third-party providers, etc.) tailored to the country and type of contract applied. Our corporate welfare system already offers the option of private medical insurance for the majority of employees. In 2017 we introduced a prevention initiative to provide an annual medical check-up for executives and part of the middle management.

Workforce composition and diversity management

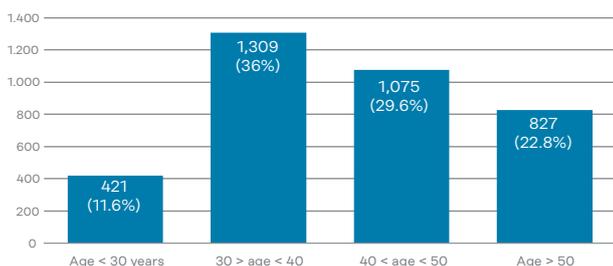
Measures to enhance diversity and inclusion help to develop and foster the implementation of best practices, increase employee engagement and productivity and encourage collaboration across geographical areas and organisational functions. They also contribute to leveraging the transfer of knowledge between otherwise disparate groups, empowering interpersonal connections, developing innovation and creativity and strengthening the capacity to attract and retain talented employees.

In 2017, a Diversity Group was set up in Brighton, UK. The group holds regular meetings to discuss diversity and inclusion, equity and equality, the gender pay gap and related issues. The ultimate goal is to encourage dialogue and collaboration at a global level, connecting initiatives and promoting new ideas and projects around the world.

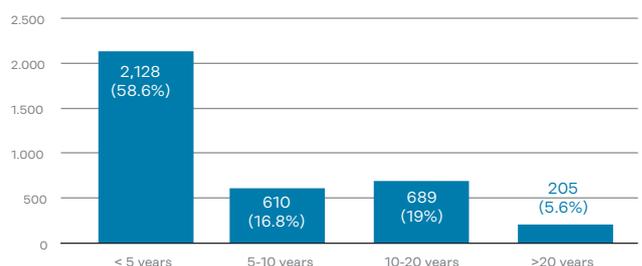
In 2018, we are planning to collect more data to deepen our qualitative analysis in this matter across our organisation worldwide. The aim is to highlight differences and similarities in areas including gender, age, education, ethnicity, ability and disability, religion or belief, etc. The ultimate aim is to represent diversity at all levels of the organisation, and to look at new incentives and actions aimed at furthering this cultural change within RINA.

We are also planning to draft a Diversity and Inclusion Policy to further promote equal opportunities, dedicated to encouraging a supportive and inclusive culture amongst the whole workforce and an inclusive environment respectful of all cultural backgrounds. The total number of employees as of 31 December 2017 was 3,632. Of these, around 30% were female (1,103) and 70% were male (2,529). Almost 70% of employees have a bachelor’s degree or another form of higher education.

EMPLOYEES BY AGE



EMPLOYEES BY SENIORITY





Training and skills development

Training initiatives and programmes cover both technical and managerial competencies and are an integral part of our policy on human resources management. Training initiatives are aimed at:

- promoting and increasing competencies and behaviours in line with business needs;
- nurturing personal and professional growth in order to support our business and ensure a sustainable and appropriate operational workload in the long term.

E-learning is a proven training methodology that has been used successfully within RINA since 2006. In 2017, we further increased the use of our e-learning system by adding new functions and sector-specific training modules, such as a new set of courses on finance and accounting for all managers. Around 450 courses in total were made available in 2017, equating to 60,000+ hours of training delivered and an average of 16 hours of training per person.

For 2018, our target is to further increase our capacity to deliver e-learning training courses to our personnel worldwide, with new topics, additional digital tools applied to learning and dynamic monitoring of attendance.

Health and safety

RINA considers Health, Safety and the Environment (HSE) issues a priority for all our employees and for our business in general. To fulfil this commitment and comply with applicable legal requirements for Occupational Health and Safety (OHS), we have implemented an integrated management system in line with our continuous improvement approach.

To strengthen OHS harmonisation, we have established a new QHSSE Corporate function to proactively support the implementation of our Quality, Health, Safety, Security and Environment strategy throughout RINA. We are also in the process of developing a new set of QHSSE documentation with the aim of updating our Corporate General Procedures by the end of 2018.

RINA's operating companies apply an OHSAS 18001-certified OHS Management System. No major non-conformities were raised in 2017 as a result of either external or internal audits. All minor findings or opportunities for improvement have been successfully addressed and closed. Our certified management system already covers 46 locations, including almost all Italian sites and employees, plus some of our offices and operations outside Italy.

In 2017, the single supplier purchasing process was extended to 19 non-Italian countries as part as of the process of progressively guaranteeing the same Personal Protective Equipment (PPE) standards.

Our employees are required to attend mandatory HSE training. Delivered both via e-learning and in a classroom setting, the training modules cover basic HSE and task-specific subjects with the aim of increasing awareness among our employees of HSE matters and work-related risks. In 2017, 5,000+ hours of training were delivered to employees of our Italian companies.

On 28 April 2017, for the ILO's World Day for Safety and Health at Work, RINA launched the second RINA Safety Day, an awareness campaign on near misses among our employees. A Round Table on Health and Safety event was also organised at the RINA headquarters, with the participation of other local companies, workers' associations and national authorities, to share lessons learned and HSE best practices in data collection and analysis.



Improving security for our people

In line with internationally recognised duty of care principles, RINA considers the safety and security of people and corporate assets a priority. In 2017, we proactively took a number of measures to strengthen the way we manage security activities associated with our operations. The key areas are:

- travel risk management, to assess risks for people travelling and adopt suitable logistical and security measures;
- physical security of RINA sites, including management of security incidents.

We have revised all procedures, instructions and protocols related to travel risk management. A team has been established at the Corporate level, including representatives of international HR, HSE, Corporate Security and the Travel Office, to ensure the joint risk management of all aspects related to travel. The internal business travel risk management programme, first introduced within RINA in 2015, has been strengthened with a new management system to ensure all business trips to high- or very high-risk countries are managed properly, prioritising the safety and security of employees. A total of 111 trips and five projects to countries with a high or very high security risk were assessed and managed in 2017.

All RINA employees have access to a special travel intelligence platform to identify any security risks at specific destinations and note security advice. In the event of an emergency, a 24/7 assistance centre is available for support and advice on medical and security issues during business travel. The tool includes a mobile app that supports trip planning, keeps our people constantly informed about security incidents through an alert system and enables on-demand assistance if needed. To date, 600+ employees have registered an account in the system and use the tool to plan and manage their trips. These employees represent the vast majority of employees travelling to high-risk countries.

In 2017, Corporate Security started to take over responsibility for operational security management of the RINA headquarters. It has developed and disseminated guidelines on how to respond and behave in the event of security incidents. Corporate Security regularly assesses the exposure of RINA companies to security risks and provides advice on how to identify and mitigate such risks in accordance with corporate risk management procedures.

The main actions planned for 2018 are to:

- adopt a Security Policy that makes a clear statement about company security principles and sets out the main security goals;
- consolidate and continue to perform activities related to the business travel risk management programme, continuously improving the management system and ensuring internal compliance with relevant procedures;
- implement a three-year (2018–2020) physical security programme for sites. This will assess all RINA sites worldwide for security risks and verify the consistency and effectiveness of security procedures and measures in place, enhancing security control measures if necessary.



Environment

OUR COMMITMENT

Accountability for environmental impact is fundamental to RINA's entrepreneurial approach. Monitoring and reducing energy consumption and our carbon footprint are our top priorities in our efforts to minimise the environmental impact of our operations. We draw on our experience and competencies acquired through our position as a market leader in certification and support services for our clients in these matters. We also participate in research and networking activities via European platforms and associations.

We work towards achieving the ambitions of SDG 7 to improve efficiency in energy consumption, SDG 13 to combat climate change and its impacts, and SDG 17 to promote effective private and civil society partnerships.



KEY INITIATIVES AND RESULTS

Environmental Management System

RINA's operating companies utilise an Environmental Management System. In 2017, we extended ISO 14001 certification to additional companies, bringing the total number of certified company sites to 46. No major non-conformities were raised in 2017 as a result of either external or internal audits. All minor findings or opportunities for improvement have been successfully addressed and closed.

Reducing printing and copying

In 2017, we made significant progress in the renewal of our printer technology park by investing in new multifunctional machines. These reduce energy consumption thanks to a new generation of advanced eco-friendly toners. Compared to 2016, we have increased the use of duplex printing and the practice of scanning documents. This has allowed us to achieve significant savings in terms of less paper consumption and consequent CO₂ emissions, lower expenditure in paper purchase, a simpler process for sending, archiving, sharing and viewing documents, as well as less storage and archive space.

In 2017, we reduced the number of printers and multifunctional printers by 8% and the number of black and white prints in Italy by 18%. The number of colour prints remained substantially unchanged, consolidating the good performance of previous years.



Sustainable business travel

In July 2017, we adopted a new global travel procedure to improve the management of all business trip-related aspects, including health, safety and security, environmental impacts and cost efficiency. The new procedure applies worldwide to all RINA employees and external consultants and states that "all travellers are expected to exercise duty of care, from the point of view of their safety and security... travellers are expected to make environmentally friendly decisions to the best of their ability". The use of train transportation as an alternative to short-haul flights is encouraged.

The introduction of the new procedure has had a positive impact already. In Italy alone, calculations for 2017 demonstrate a reduction of 69,159 kg of CO₂ emissions, with the number of employees in the country remaining substantially unchanged.

Every year the contracted travel agency provides, for RINA companies based in Italy, an environmental report with details of carbon emissions per service type. Validated by LifeGate, the 2017 document reported 3,178,674 kg of global emissions compared to 3,247,833 kg in 2016.

For 2018, RINA has planned to extend the monitoring of those offices abroad with the highest number of business trips. A new Travel Dashboard will also be developed to provide managers with travel data of their business units, including KPIs about carbon emissions from business trips.

Renewable energy supply

Since 2012, all energy consumption in the RINA headquarters in Genoa has come from electricity. This was a first step towards achieving energy supply from renewable sources. In 2017, the total energy consumption in Italy used for lighting, air conditioning, heating and cooling was 5,894,647 kWh and was entirely supplied by certified renewable sources. For 2018, we have already renewed the agreement with the utility company and plan to start monitoring electricity consumption at target RINA offices worldwide from 2019.

Carpooling and company cars

RINA has reviewed its policy on carpooling and company cars to improve the performance of car transport in terms of both the safety of drivers and CO₂ reduction. We have selected the Euro 6 environmental class and introduced an incentive policy for hybrid cars. Rental companies contracted are required to highlight CO₂ emissions for each rented vehicle.

Compared to 2016, implementing the new car policy for the Italian fleet has contributed to a 9% reduction in CO₂ emissions for company cars and 5% for cars used for carpooling. In 2018, we plan to introduce additional safety requirements and to extend monitoring outside Italy, starting with the most relevant countries in this respect.

Improving the energy efficiency of facilities

In 2017, we carried out an internal analysis to improve the management of all RINA buildings. This involved collecting site-specific information on:

- status of structures and systems (installation dates, type of systems/components, state of preservation, etc.);
- service contracts (water, electricity, etc.) and number of employees.

We have commenced a study on energy efficiency of existing lighting systems at all our offices in Italy. For Rome and Naples, we have replaced the lights with innovative LED lamps to increase energy efficiency.

For new buildings, we have an internal procedure that takes into account sustainability and energy efficiency parameters. A recent example is our new office in Rozzano, Milan. The newly renovated building is designed to meet the highest standards in terms of energy efficiency and living conditions.



Anti-corruption

OUR COMMITMENT

RINA is committed to embedding the principles of integrity and transparency into all financial operations and transactions. All financial operations have to be correctly authorised, verifiable, legitimate, coherent and adequate. RINA rejects any form of corruption as an instrument to execute its business and bribery is not allowed in any circumstance. Nobody can promise or give money or other advantages in order to obtain undue benefits for RINA or for themselves. Nobody can ask for money or other advantages in order to carry out undue services.

Our top priority is to maintain responsible business conduct, implementing voluntary best practices and fighting against corruption to be recognised as a company with the highest possible reputation for ethical standards.

Our effort is also focused on promoting networking within international associations and advocacy to foster a culture based on legality. We draw on the skills and experience we have acquired thanks to our position as the first certification body to be accredited for the worldwide ISO 37001 certification of anti-bribery management systems.

As such, we conduct our business in support of the ambitions of SDG 16 to reduce corruption and bribery in all their forms and SDG 17 to promote effective private and civil society partnerships.



KEY INITIATIVES AND RESULTS

Strengthened managerial oversight

The RINA Board of Directors has appointed a Control Body to oversee the effective implementation of the internal model adopted to prevent crimes, corruption and bribery throughout our operations. Our RINA Corporate Internal Audit function has the mandate from the Control Body to perform yearly compliance audits using a risk-based approach. During 2017, 42 audits were carried out and relevant improvement actions undertaken.

RINA has also established a Corporate Compliance Board and Risk and Control Committee, two additional bodies that oversee business integrity across our operations.



Participation in anti-corruption initiatives

Since 2012, RINA has been a member of the International Federation of Inspection Agencies (IFIA) and has adapted the RINA Compliance Programme and Principles to comply with the IFIA Compliance Code. The Code addresses technical as well as business professional conduct and ethics in relation to the following aspects: integrity, conflicts of interest, confidentiality, anti-corruption and fair competition. RINA appointed PWC to perform third-party compliance audits, which confirmed that the 2017 RINA Compliance Programme and Principles comply with the IFIA Code. RINA has been reconfirmed as being eligible for IFIA membership. The RINA Compliance Programme and evidence of compliance with the principles of the IFIA Compliance Code are publicly available on the RINA website.

In early 2017, RINA joined Transparency International Italia – Business Integrity Forum (BIF) to support voluntary anti-corruption initiatives. We are actively engaged in the initiatives promoted and developed within this forum. Examples are the Business Integrity Toolkit for small enterprises, advocacy and awareness campaigns via social media, the BIF National Event on 13 November 2017 in Milan and the CSR and Social Innovation event on 26 May 2017 in Genoa.

Communication channels

RINA has established dedicated channels to facilitate information flow regarding any potential misconduct noticed from any employee. In 2017, RINA adopted a whistleblowing platform to enhance existing channels of communication to report alleged violations. These can be violations of the RINA Ethical Code, the Organisational Model pursuant to Legislative Decree no. 231/2001, internal policies and procedures, current laws and regulations or good business practices. The platform is publicly accessible on the RINA website, together with information about the procedure.

Anti-corruption training for employees

All employees have been provided with mandatory training tools about the anti-corruption control model, along with guidelines for anti-corruption and managing conflicts of interest. These have mainly been in the form of online courses.

Supplier qualification

RINA is enhancing the qualification process for its suppliers by including integrity and anti-corruption requirements and by requiring the countersigning of terms and provisions in a Privacy Notice. To be an approved RINA supplier, the qualification process states that each supplier must acknowledge the provisions of the RINA Ethical Code and Organisational Model. Suppliers have to self-declare that they have not been the object of any judicial or criminal proceedings for attempting or committing a range of violations including criminal and/or mafia-type associations, bribery, corruption, fraud, bankruptcy, activities involving money laundering/self-laundering, the use of money, goods or assets of illegal origin or any form of human trafficking or child labour.

The supplier qualification process will be further enhanced during 2018 with a full review of procedures and forms. We are also working to ensure a harmonised application by all RINA companies worldwide.

Third-party due diligence

RINA has decided to enhance its control measures for third parties with which it has established business relationships. The aim is to reduce operational, reputational and security risks and to comply with national and international standards on anti-money laundering and anti-corruption.

In late 2017, the Risk Management and Audit Committee reaffirmed the recommendation to develop a third-party due diligence process within the company, as a qualifying element with respect to anti-bribery and anti-money laundering regulations. In line with this indication, a specialised due diligence tool has been selected to develop a pilot programme. The pilot programme, jointly managed by the Legal Affairs and Corporate Security, will be launched in 2018 to focus on selected case studies, clients, customers and candidates connected to potential high-risk countries (identified through a set of Key Risk Indicators). The objective is to provide the Committee with estimates and data on potential risk exposure and to define a set of control measures to either prevent or minimise potential risks.

Our services for sustainability

In September 2015, world leaders adopted the 2030 Agenda for Sustainable Development of the United Nations. This defines a set of global sustainable development priorities and initiatives and calls for worldwide action among public and private sectors for sustainable development combining economic, social and environmental aspects.

This section explores examples of our contribution to the Sustainable Development Goals (SDGs). It focuses on some of the businesses areas in which we are proactively supporting clients in developing their projects in line with the expectations of the SDG framework.

We are proud to be a pioneer company working in the sustainability field alongside numerous private stakeholders operating in the energy, marine, certification, transport and infrastructure and industry sectors. Through the application of the IFC Sustainability Framework and other environmental and social standards, we encourage companies to identify their responsibilities in managing environmental and social risks associated with their operations, and contribute to the application of the UN Sustainable Development Goals. We support the creation of employment opportunities and economic growth, and contribute to responsible consumption and production in line with country legislation and sectoral plans, sustainable business practices and consumer behaviour.

SUSTAINABLE O&G DEVELOPMENTS IN EGYPT



RINA has been developing a Biodiversity Management Capacity Building Programme in the context of a Technical Cooperation assignment with the European Bank for Reconstruction and Development (EBRD). We organised a workshop in Cairo, Egypt, providing an opportunity for participants, including authorities involved in environmental and petroleum sectors and national O&G sector players, to discuss biodiversity issues and best practices for managing them. The second phase of the project includes a dedicated biodiversity risk assessment and biodiversity baseline data collection techniques training, to be delivered to selected participants including local authorities and O&G stakeholder staff.

Aimed at strengthening the institutional role of the environmental authorities, the Biodiversity Management Capacity Building Programme is contributing to achieving the SDGs on peace, justice and strong institutions. Integrating biodiversity considerations into new initiatives is fundamental to ensure sustainable development that meets the SDGs related to the conservation and sustainable use of the oceans and marine resources, as well as the sustainable management of land-based resources.

KABAAL AIRPORT PROJECT IN UGANDA



The Kabaale Airport project is an integral piece of the Albertine Graben Physical Development Plan in Uganda, as the country prepares to develop its petroleum industry. The Government of Uganda is working with a consortium of international companies to invest in, operate and co-own the planned Uganda Oil Refinery. Also known as Hoima International Airport, Kabaale Airport is currently under construction and is expected to facilitate the mobilisation of equipment for the refinery and related infrastructure and growth. In addition, the airport is expected to assist in the development of agriculture and tourism in the western region of Uganda.

RINA undertook the Environmental and Social Due Diligence (ESDD) process for the project to support the pool of Lenders prior to financing decision. We have now commenced biannual monitoring visits during the construction phase. The ESDD phase led to the development of an Environmental and Social Action Plan, outlining a series of actions to be implemented by the airport developer. These range from HSE aspects of the site to social awareness and investment aspects relating to surrounding communities and stakeholders. Our major areas of focus are gender equality and equal opportunities within the workforce, fair wages and working conditions in line with accepted international standards and guidelines, economic growth opportunities for local communities and the provision of proper management systems to ensure a safe and healthy working environment.

RINA's key involvement is to ensure that the project avoids or minimises adverse negative environmental and social impacts while maximising the positive impacts that a project such as this can bring to the region. The airport development has created a number of employment opportunities, with a focus on local communities and the upskilling of local workers. A range of economic growth opportunities will also benefit the region once the airport is operational.

MONGOLIAN SUSTAINABLE ENERGY FINANCING FACILITY (MONSEFF)



The European Bank for Reconstruction and Development (EBRD) was the first International Financial Institution with the mandate to promote sustainable development in its countries of operation. Since 2004, RINA has been assisting industries and SMEs supported by EBRD funds, ensuring that their actions combat climate change and its related impacts, are in line with the philosophy of responsible consumption of natural resources, and work towards strengthening the clean energy system. We are proud to be part of EBRD initiatives that support businesses seeking to invest in equipment or processes that would significantly reduce their energy consumption.

MonSEFF is a US\$25 million credit line provided by the EBRD to commercial partner banks in Mongolia. The goal is to help fund loans to sustainable businesses that wish to invest in energy-efficient and renewable energy technologies. This helps local businesses increase their sustainability and competitiveness while protecting the environment by reducing CO₂ emissions. An innovative aspect of the Sustainable Energy Financing Facility is that the funding comes with free guidance from a team of experts, who can advise banks and clients on investments with a short payback period. This requires a high level of technical knowledge to ensure the equipment selected is adequate for Mongolia and will result in savings within a short time.

To assist this initiative, RINA has developed a web-based interactive project database, provided technical assistance for considered sub-projects, promoted the project through targeted public awareness and marketing campaigns and delivered a series of training courses to identify eligible project opportunities.

SUPPORTING SMES IN GEORGIA



The EU4Business-EBRD Credit Line is a joint initiative of the EU and EBRD to help Georgian SMEs finance investments in order to take advantage of opportunities presented by the Deep and Comprehensive Free Trade Agreement (DCFTA). The EU4Business-EBRD Credit Line and grant support scheme offers EBRD loans, EU grant incentives for successfully implemented projects and free-of-charge technical assistance from an international pool of technical experts, who help SMEs find the best solutions for their investment targets.

Since early 2017, RINA has been providing support in establishing, marketing and managing the programme. Specific activities include preparing and maintaining a database and documents to trace sub-loans, organising training on the eligibility criteria for the different project categories and developing appropriate procedures.

SCALING SOLAR INITIATIVE



In support of the SDGs for an affordable and clean energy future, the World Bank Group is planning to make energy storage an integral part of its Scaling Solar initiative. Until now, this has focused mainly on supporting privately funded grid-connected solar PV projects, predominantly in Sub-Saharan Africa.

RINA Group was engaged by the World Bank Group to explore the possibility of expanding its Scaling Solar initiative to include battery storage systems in a new Scaling Solar and Storage (SSS) programme. Our research included a review of international standards, focusing on new-build photovoltaic and energy storage systems, and drawing up a list of relevant standards, codes and regulations applicable to energy storage systems.

Emphasis was placed on facilitating tendering and contracting requirements in emerging markets and the minimum requirements for bidder experience with the design, installation and operation of a solar-plus-energy storage system. The requirements should ensure that the battery supplier's technology and product development is of a sufficient, bankable technological readiness and has been operationally proven within other installations.

POWER GENERATION TO SUPPORT GROWTH IN NIGERIA



African Infrastructure Investment Managers (AIIM) and Helios Investment Partners have invested heavily in StarSight Power Utility for the provision of solar-diesel-battery hybrid power services in Nigeria. The aim is to stimulate sustainable power production and alleviate dependency on the unreliable national electricity grid and diesel generators. Limited access to electricity and poor performance of utility power generation are considered constraints for the sustainable growth of the commercial sector in Nigeria. The project is part of the wider transformation of the power generation landscape that is expected to foster economic growth across Sub-Saharan Africa.

To support their investment, AIIM appointed RINA to provide technical advisory services. Our main objective was to evaluate the technical, commercial and environmental risks and benefits of StarSight's products and services in Nigeria, as well as provide a comprehensive risk management framework.

DOLPHIN NOTATION



There is widespread concern among the international community that underwater noise generated by commercial shipping may have negative effects on marine life, especially marine mammals. Such a concern is confirmed by the International Maritime Organization (IMO) MEPC Circ. 833, Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life. This gives guidance on design and operational solutions that may be adopted to reduce underwater radiated noise. The International Organization for Standardization (ISO) has also developed its own ISO/PAS 17208-1 and ISO/DIS 16554 standards.

RINA is tackling underwater noise through the development of Dolphin, a voluntary notation scheme that combines the abovementioned standards. This gives shipowners a clear way to indicate commercial vessels that have implemented solutions to minimise underwater radiated noise, thus reducing their environmental footprint. The Dolphin notation is particularly relevant for ships operating in sensitive marine areas and shipowners who wish to demonstrate that they have taken actions to mitigate the impact of their vessels.

The notation will be granted only to vessels fully complying with both sets of standards. The notation includes requirements on instrumentation, sites and procedures to carry out the measurements, and describes the information and post-processing activities necessary for reporting.

COMPETENCE MANAGEMENT SYSTEM CERTIFICATION



RINA provided Competence Management System (CMS) certification to several shipowners and crewing companies in 2017. CMS certification is used to confirm that the hiring process, periodic evaluation and training of staff have been implemented correctly and comply with company goals and applicable legislation. It helps companies to cope with increasingly strict regulations and demands from customers and the market, new ship designs, changes in construction processes and operational changes.

Preventing accidents is crucial for the good health and wellbeing of seafarers as well as for the environment, and the continuous training of crew is essential to avoid accidental spills and pollution disasters. Installing new equipment or updating software can also lead to the need for staff to develop new specific and up-to-date competencies. In view of the large number of people involved in operating and managing ships, measures to update and improve competencies help to mitigate the risk of accidents, delays and ship downtime, as well as potential reputational risks for the company.

SUSTAINABLE CERTIFICATION



The certification procedure is a key tool to enable customers to demonstrate their efforts towards achieving an environmentally, socially and economically sustainable business. By certifying their products and processes, they commit to adopt a responsible approach to the environment, reduce greenhouse gas emissions, combat climate change and foster a sustainable bio-economy, as well as proactively prepare their business for the legislation of tomorrow.

Since the mid-1980s, RINA has diversified its fields of activity and grown into a global market leader in assisting public and state administrations, as well as industrial players in the private sector, in the assessment of sustainability and environmental conformity. 2017 was an important year for RINA in this respect, not only in terms of the increased number of certificates we issued but also in terms of our active involvement in the green chemistry, bioenergy and agri-food sectors. In 2017, RINA gained the authorisation to perform the control functions provided for by EC Reg. 834/2007 on organic production (IT-BIO-018) and the SQNPI Integrated Crop Management National Quality System.

MATRICA ISCC-EU CERTIFICATION



Matrica is a company at the forefront of the bioplastics industry. It arose from a joint venture between Versalis (part of ENI Group) and Novamont to convert the Porto Torres petrochemical facility in Sardinia into an integrated green chemistry complex focused on developing products sourced from raw materials of vegetable origin.

RINA has supported Matrica in the evaluation – approved by the Italian Ministry of the Environment – of residues left by some of the production processes and helped the company obtain International Sustainability and Carbon Certification (ISCC EU).

MONTELLO BIOMETHANE



Biomethane is a biogas that, after a refining process to achieve a minimum 95% methane concentration and in compliance with current legislation, can be used as a biofuel for motor vehicles to replace natural gas or methane produced from fossil fuels.

RINA has supported Montello and issued the sustainability certification for biomethane obtained from the anaerobic digestion of the Organic Fraction of Urban Solid Waste (OFURW). The certification was the first carried out in accordance with the National Certification System for the Sustainability of Biofuels and Bioliquids defined by the Italian Ministerial Decree of 23 January 2012. It contributes to making biomethane compliant with the EU Renewable Energy Directive 2009/28 and achieving the EU 2020 target of 10% of transport fuel coming from renewable sources.

ENEL BIOMASS SUPPLY CHAIN CERTIFICATION



In 2017, thanks to a contract with Enel Produzione, RINA mobilised a team of inspectors with a background in forestry and agronomy to carry out a series of inspections for the certification of biomass (wood chips) supply chains according to Enel's technical specifications.

The inspections covered the documentation, verification and evaluation of the wood companies and sites involved in the supply of biomass materials for the production of electricity in Enel power plants. The project also involved the subsequent field audit of verified plants and sites in order to issue the necessary certification to authorise the supplies. The geographical areas concerned are the Italian regions of Calabria, Campania, Basilicata, Puglia and Tuscany and the Mediterranean coast of Spain.

ENI GREEN REFINERIES



Biofuels sourced from waste and residues represent a step forward in the re-use of organic raw materials. They are more sustainable than the first generation of biofuels obtained by processing food-type biomass, as they do not put food safety at risk.

In 2017, RINA issued the first sustainability certification for biofuels produced by Eni – Refining & Marketing at some of their industrial facilities. The certification was carried out in accordance with 2BSvs, a voluntary certification scheme for biofuels accepted by the European Commission. Eni's plant in Venice is the world's first example of transforming a conventional refinery into a bio-refinery able to process organic raw materials such as vegetable oil, used cooking oil, animal fats, non-edible oils, etc. into high-quality biofuels.

ISO 37001 ANTI-BRIBERY SYSTEM CERTIFICATION



RINA is the first certification body to have been accredited for ISO 37001 anti-bribery system certification. This important new business service has increased our profile on the international stage and we have already worked with governments, global organisations and industrial associations in countries including Italy, Brazil, Romania and France. Some of the companies and organisations that have opted for the certification include Eni, Enel, Aeroporti di Roma, Pirelli, Autostrade per l'Italia, Robert Bosch Middle East (the first certified company in the Middle East), Win Magazin (first in Romania), Construtora Queiroz Galvão (first in Brazil). All chose RINA as their accredited third-party partner for the certification.

SOCIAL ACCOUNTABILITY



RINA delivers social auditing and certification services to support clients in managing their supply chains and internal processes in terms of labour rights, occupational health and safety, human rights, modern slavery, child labour and discrimination, to ensure a high level of transparency towards all stakeholders. RINA has been accredited by SAAS to perform SA8000 third-party audits since 2001.

In 2017, RINA increased its efforts in this sector and was confirmed as the third-ranking international player for the number of SA8000 certificates issued worldwide, with an average growth rate over the last three years of over 27%.

With the new Energy Performance of Buildings Directive coming into force in 2018, the European Union is setting a firm commitment to develop a sustainable, competitive, secure and de-carbonised energy system by 2050. The building sector is one of the largest industries responsible for energy consumption and CO2 emissions, so there is huge potential in renovating obsolete buildings and finding “smarter” solutions to further enhance the energy performance of new buildings. Besides the obvious positive impacts on the real estate industry and its supply chain, the potential benefit of new technologies extends to other sectors, such as finance, automotive and energy.

NEARLY ZERO ENERGY ORATORY IN REZZATO



RINA has been involved in the construction of a new oratory in the Italian community of Rezzato, near Brescia. This advanced, environmentally sustainable building is designed with cutting-edge technological, construction and plant engineering techniques such as the use of a dry construction system, solar panels, green roofs and solar greenhouses. The use of natural and ecological materials – wood for the structure of external walls and the façade, plus an innovative cement conglomerate with high draining capacity for outdoor floors – ensures high technological performance for this “nearly zero energy” building.

RINA has supported the owner in identifying the most effective sustainable options that balance saving natural resources and achieving high living quality standards. The result was a building constructed following the ITACA Protocol of Standards for Sustainable Building, one of the most advanced European protocols to enhance the sustainability of buildings.

ECO-FRIENDLY SCHOOL DESIGN



RINA was appointed by City Life, one of the most important operators of professional real estate, to verify and certify all energy efficiency aspects associated with the design and construction of a new nursery school.

Our input was aimed at creating living spaces using eco-friendly materials and ensuring an innovative sustainable design approach combined with child-friendly architectural solutions to guarantee high quality standards. The result was a building that achieved the highest energy efficiency standards, well beyond those currently set by existing Italian regulations.

PLATINUM LEED CERTIFICATION



Leadership in Energy and Environmental Design (LEED) is the highest internationally recognised and renowned certification protocol of building sustainability. As technical advisor, RINA supported Generali Real Estate to identify, design and develop the strategy to achieve the Platinum-level LEED certification for one of their buildings in Milan.

The 1980s property has been completely renovated using advanced and innovative solutions integrating energy and environmental sustainability LEED certification principles from the early stages of engineering design and throughout the construction phase. Specific design solutions were implemented to maximise energy performance, enhance alternative transport modes, reduce water consumption, use environmentally friendly recyclable materials and design layouts to maximise internal comfort and living standards.

Innovation in materials and technologies is a key enabler to ensure a real breakthrough in industrial development and to achieve high sustainability targets. RINA has always been committed to challenging the limits of enabling technologies and to identifying innovative and sustainable solutions for the continuous improvement of industrial processes.

ADDITIVE MANUFACTURING FOR SUSTAINABILITY



Additive manufacturing (AM) is a sustainable technology as it contributes to reducing the amount of raw materials needed to manufacture a product. It offers time and energy cost savings compared to traditional manufacturing methods. It also uses lighter components that can be re-engineered and manufactured through topological optimisation, with the same strength as components produced using conventional methods.

RINA is a pioneer and innovator in the field of metallic AM, managing the whole innovation process from simulating and developing new materials to optimising processes. We work to improve the integration of AM into manufacturing as a “green” alternative to standard cast, wrought and machined materials.

LIFECYCLE ASSESSMENT OF SPACE ASSETS



The European Space Agency (ESA) is deeply concerned about environmental impacts generated by space missions that are traditionally designed according to technical requirements with less attention to environmental implications.

The use of toxic materials and the need to carry out extensive and energy-consuming tests are just some examples of the potential environmental impacts. Eco-designing a satellite from the early stages of design, adopting advanced solutions to reduce environmental impacts, has become a priority for the ESA. RINA is a key partner in delivering an innovative methodological approach to Space Life Cycle Assessments (LCAs) to assess the impacts of missions outside the troposphere. To date, we have assisted the ESA in LCAs for two space missions (MetOp-B and Astra 1N).

These involved studying the specific eco-toxicity impacts and risks of launcher materials and decommissioned satellites in a fragile ecosystem such as the deep sea, as well as identifying new advanced solutions for their mitigation.

RESEARCH AND FINANCED PROJECTS



The RINA Research and Development division is one of the main actors involved in Horizon 2020, the European Commission-funded research and innovation programme with €80 billion of funding between 2014 and 2020. Horizon 2020 focuses on three key areas: Excellent Science, Industrial Leadership and Societal Challenges.

RINA is particularly engaged in developing research projects with a focus on Industrial Leadership and Societal Challenges to:

- support our business departments in identifying innovative services, sectors and market trends;
- gain knowledge to develop, design and enhance our services and to develop new offers;
- develop strategic relationships with key players in highly relevant areas for the company;
- gain higher visibility as a global player within the innovation sector;
- support clients within the innovation chain.

In 2017, RINA was involved in over 100 research and innovation projects, most of them within the Horizon 2020 framework. In terms of sustainability-driven aspects, we have focused on the areas of:

- Secure, Clean and Efficient Energy in the Built Environment;
- Smart Cities and Communities;
- Sustainable Production and the Circular Economy;
- Disaster Resilience and Nature-based Risk Reduction;
- Innovation in Infrastructure;
- Low Carbon Energy and Smart Grids;
- Innovation in the Manufacturing Industry.

The goal of SDG 5 to “achieve gender equality and empower all women and girls” is an overarching topic in all EU projects, where action plans should promote gender equality and strengthen the participation of women. Some projects address gender equality issues explicitly, like the DIAMOND project that focuses on enhancing gender-specific needs in the transportation sectors and in fostering women’s employability in the industry.

Many EU projects are in line with SDG 7 to “ensure access to affordable, reliable, sustainable and modern energy for all” and SDG 11 to “make cities and human settlements inclusive, safe, resilient and sustainable”. The projects include supporting access to water and sanitation, urban mobility, energy and affordable housing, as well as energy efficiency and disaster prevention and preparedness. Within the FORESEE project, for example, we are studying the development of resilience schemes for traffic disruption following flooding, landslides and structural damage to rail and road corridors and multimodal terminals.

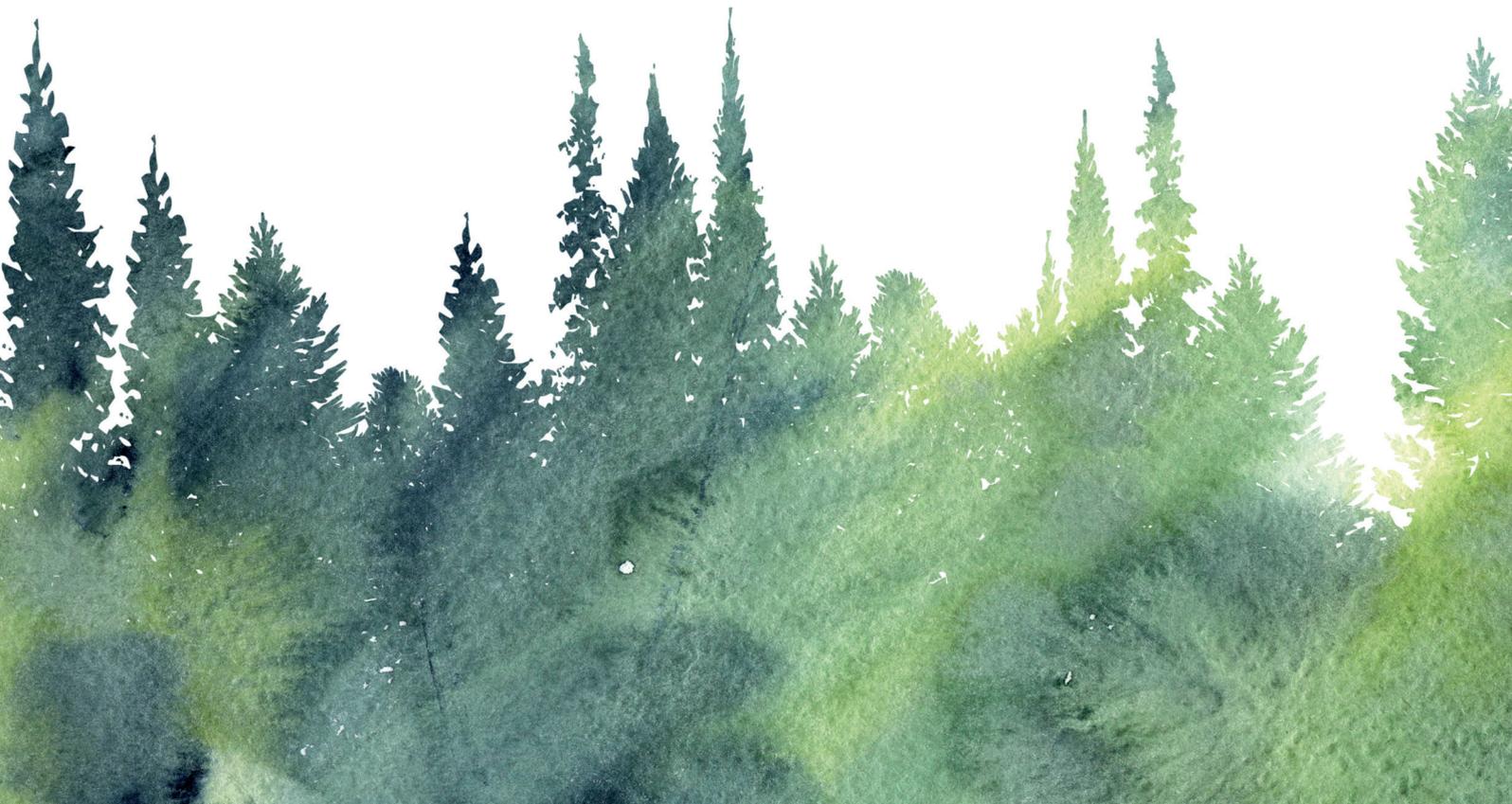
Relating to SDG 14 to “conserve and sustainably use the oceans, seas and marine resources for sustainable development”, EU research is very active in finding innovative solutions for marine pollution prevention and the conservation and sustainable management of marine resources. As an example of our commitment in this area, we are coordinating the Blue Growth Farm project that aims to develop and demonstrate an automated, modular and environmentally friendly multifunctional platform for open sea farm installations of the Blue Growth Industry.



COMMUNICATION ON
PROGRESS

This is our **Communication on Progress** in implementing the principles of the **United Nations Global Compact** and supporting broader UN goals.

We welcome feedback on its contents.





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