Welcome to Cannon!

Cannon is an international Group supplying worldwide a wide range of industries with dedicated engineering solutions. Main fields of activity are currently Plastics Processing Technologies, equipment for Energy & Water treatment, Aluminium Die-casting machines, Industrial Electronic Controls. Independence, Innovation, Internationality are three "Is" that characterize and have contributed to the success of this dynamic Group.

Continuous involvement of Cannon in their Customer's needs and success, in their Partner's vision and strategy, in the continuing evolution of their technologies have kept the Group ahead and well alive, in spite of the turbulences of the economy and the difficulties of a highly-competitive business environment.

In 2012 more than 1000 employees work in 12 Manufacturing Centers and in more than 30 Local Units and Agencies, servicing more than 25,000 industrial Companies all over the World.

Energy & Water Treatment

Two dedicated Companies are active in the field of Energy production and Water Treatments:

Formerly known as BONO Energia, Cannon BONO since 1958 design, manufacture, install, service and maintain industrial boilers for standard and special applications: plug in solutions, package solutions, site erected plants, all built in compliance to PED machinery and ATEX directives, GOST-R & RTN and SQLO certification; according to ASME, European standards, AD 2000, BS 1113, ISPESL.

Their main commitments are primary energy saving, energy efficiency's improvement, emission reduction, low impact environment solutions and keeping high energy efficiency during service lifetime of the plant.

Founded in 1977 as the BONO Company in charge of waste water treatments, ARTES Ingegneria consolidated into a single company the experience of water and waste water processes that diversely originated within the Group.

Using proprietary technologies, Cannon ARTES is committed to the highest efficiency in water and waste water treatment systems, fully compatible with the goal of "sustainable development" of industrial activities.

Steam & Water tailor made for Oil & Gas

You might have tried it before, a bargain dress bought in a department store. The tissue looks good, the cut is appealing, the price tag even more. Then, back at home, you wear it and you discover that the shoulders are right but the waist line is a bit tight. After a couple of washings the trousers are a few centimetres shorter. And the zip soon fails, in the middle of a party, of course. They told you that the tailor downtown is better, and you said that it's too expensive. Fine.

Your money, your choice, of course.

We learned, in the past few years - caring about fast-growth markets - how to cut our plants around your measures and according to your taste and needs. You have had less time than before to take care of a number of details, and to acquire a number of new skills trying to put together a complex plant. You told us what you needed - in terms of heat, steam or electrical output - and how many square meters were available, and we supplied the whole package.

You were satisfied, started saving money and called us again when you needed another solution. You allowed us to multiply by five in ten years the turnover of our thermal plants division.

If your problem was related with water treatment, squeezed between the availability of incoming liquids more and more polluted and the need to release them more and more cleaned, you appreciated our problem-solving approach and our innovative technologies.

You allowed us to multiply by ten in ten years the turnover of our water treatment division.

We are the tailor.

We know how to tailor-made the plant that you need. Read in this Cannon News a number of successful references about our most recent developments in the Oil & Gas field worldwide: most of them have been designed around the specifications of our customers - you.

And we are even not that expensive.

We learned - in more than 50 years of continuing activity - how to design, build and install non-standard equipment maintaining the manufacturing skills and the cost structure of our industrial division, that keeps supplying several lines of standard machines.

Thank you for your continuing support.
Your Steam & Water Tailors.
Cannon ARTES from downstream to upstream and offshore

An annual average rate of 28% characterises the growth of Cannon ARTES turnover in the past ten years. “The whole difference is expected, and most of it comes from new applications!” states Alessio Liati, Sales & Marketing Manager of Artes Ingegneria (Cannon ARTES), the Water and Waste Water Treatment Company of the Cannon Group. We interview him to discover the recipe of their success.

Cannon News: Can you tell us how Cannon ARTES achieved this success?
Alessio Liati: The figures first: ten years ago we were selling 3 mln euro of water treatment plants, all in the Italian market. Today we sell close to 30 mln euro worldwide, out of which 90% are exported. New technologies and applications were the picklock to international markets. We moved first to the Middle East and North Africa, then to the rest of the World: Asia, Pacific, South America and Russia. Today we are present in 75% of the most significant oil&gas countries. We are well known abroad through the introduction of new products. We are developing new technologies and new applications. We are increasing our portfolio and new solutions are constantly developed.

CN: Can you give some examples of new solutions?
AL: Some of our innovations are: deaerated water, a double stage degassing tower may be specified “hold-up” time according to the request of the user. This is a particular solution for the upstream and offshore where our contribution in terms of know-how and technology could be relevant. We are also very interested in the development of unconventional oil and gas sector, where the waste water treatment is a great challenge for us.

The Engineering Division takes care of the special BONO thermal plants designed for the generation of “unconventional” oil (heavy oil, oil sands, shale gas etc.), using our ZEROGAS degassing technology.

Aramco Gulf Operations have been awarded the Taboguilla Island Terminal Extension Project in the offshore sector for a total value of about 350 million euros, with an efficiency of 94% to 40 MW. These Zero Gas vacuum degassing packages, whose Onshore footprint and increase oil recovery.

Many thanks are given to the National Oil Companies of the Middle East area, from where our international business started. Gasco, Takreef, KNPC, Qatar Petroleum, Sonatrach trust us and more important international EPC contractors had endorsed us. When Groups like these are satisfied with our solutions we need a little effort to follow them around the globe for their next projects; this is the best promotion for us!

CN: What are you supplying them?
AL: Until 2010-2011 we mainly concentrated on the treatment of primary water, required for boiler feed or for other processing needs: deaerators, condensate polishing units, filtration and demineralisation plants. In the past 18 months we have extended our efforts to the treatment of effluent waters produced by refineries and petrochemical plants and we have moved “upstream” in the Oil & Gas sector with the treatment of the so-called “produced and injection water” for oil and gas wells, onshore and offshore. Huge quantities of water are produced and injected, especially in “aging” reservoirs where recovery of oil may be enhanced by proper injection techniques and in the field of “unconventional” oil (heavy oil, oil sands, shale gas etc.), where water treatments are essential to reduce the groundwater footprint and increase oil recovery.

CN: In particular what are the products and technologies essential for the upstream sector?
AL: In the upstream sector we have to make a distinction between onshore and offshore technologies. Treatment of produced water offshore is mainly concerned with deoiling and particles removal that can be done in a compact and light way with hydrocyclones and induced gas flotators. When sea water is used as “flooding water” one of the major issues is residual oxygen. Cannon ARTES is currently supplying vacuum degassers to ExxonMobil and Aramco. Onshore produced water is normally treated so that it could be reinjected. Crucial technologies are induced gas flotation and media filtration with walnut shell filters as the “state of the art” solution.

CN: And what about the downstream?
AL: In the downstream sector we are working on the treatment and utilities island. We are offering solutions for:

- efficient treatment, featuring deoiling, chemical conditioning, biological oxidation, sludge dehydration, tertiary recovery.
- condensate polishing, with systems based on internal or external regeneration and outputs above 1,000 m³/h.
- demineralisation, with innovative ion exchange technologies of 100% membrane based incorporating ultra filtration, reverse osmosis, membrane degassing and electrodeionisation.
- cooling water filtration with our proprietary Hydrack® system, outputs higher than 3,000 m³/h.
- thermophysical deaerators using our ZEROGAS ZeroGas technology able to deliver more than 1,000 m³/h of boiler feed water.

CN: Any news about your future projects?
AL: We want to extend our presence in the upstream and the offshore where our contribution in terms of know-how and technology could be relevant. We are also very interested in the development of unconventional oil and gas sector, where the waste water treatment is a great challenge for us!
Efficient solutions are available for the transport and storage of crude oil and refined products

Crude oil reserves are concentrated in certain areas of the world, while the demand for refined products is much more distributed; therefore, large amounts of crude product are transported from extraction to refining sites, to be then moved to target markets.

The transport and storage of crude oil and less noble distillates, from heavy fuels to bitumen, require a substantial amount of heat to decrease the fluid viscosity in order to facilitate its handling.

This is a very critical issue when considering extraction sites characterized by very severe temperatures or by lower crude oil extracted quality.

Cannon BONO offers efficient and reliable solutions for the temperature maintenance of crude oil and its derivatives in storage and pumping stations, ensuring a rapid response to the required heat loads.

An example is the provision of a heating complex in Russia: three hot oil heaters OMP for a total capacity up to 40 MW. The supersale system is able to operate with an efficiency of 94%, thanks to the optimization of the heat exchange in the convective area and to the introduction of a heat recovery system.

Cannon BONO is also participating in the Panama Taboga Island Terminal Extension Project, creating the storage facilities of the Italian DECAL, specialized in the management of the coastal terminals for oil and chemicals.

The fuel oil tanks will be heated with thermal oil provided by three BONO OMP 2500 thermal oil heaters, for a total capacity of 9 MW. The boilers have been delivered to Puerto Colon and will be installed within November, 2012.

Vacuum degassing packages, a critical application in Oil&Gas upstream

Application of Cannon ARTES’s ZeroGas® vacuum degassing technology is thriving together with the boom of the upstream sector.

Oxygen-free water is a critical issue not only in steam generation and power production: in most oil fields to keep crude oil flowing constantly through the wells, sea water or river water must be pumped into the oil basin as “flooding water”, one of the most common enhanced oil recovery techniques.

Use of Oxygen-free water is mandatory in “water-flooding” applications because the presence of Oxygen in the injection water may accelerate corrosion and bacteria proliferation.

Since water to be injected as flooding water is not expected to be heated, conventional thermophysical deaerators - in which Oxygen is depleted by heating and by steam stripping - are replaced by vacuum degassing packages where Oxygen is forced to flow from the liquid into the gas phase, because of the low partial pressure consequent to the vacuum conditions.

Vacuum is created into the degassing tower through the action of liquid-ring pumps with or without the assistance of additional air-driven ejectors. The water is fed to the top of the degassing tower and falls across metallic or plastic rings down to the storage tank which is designed against a specified “hold-up” time according to the request of the users downstream.

When stringent limitations apply to the residual oxygen in deaerated water, a double stage degassing tower may be implemented and operated at two different vacuum levels.

In the last two years Cannon ARTES has been awarded important contracts for ZeroGas® vacuum degassing packages by prestigious Clients.

Technip (Italy), one of the major engineering and construction companies, currently works on behalf of KJO, Al-Khaffji Joint Operations, a joint petroleum production operations agreement between KGOC and Aramco Gulf Operations.

Technip is handling the EPC Contract of a new crude oil treatment and storage facility, whose function is to maintain the oil wells’ extraction capacity at 50,000 barrels for the next 20 year.

Three vacuum degassing packages have been awarded to Cannon ARTES by the Consortium Samsung Engineering and Construction Ltd (Korea), and PT Triputra Engineers and Construction (Indonesia), to be installed into the Banyu Urip’s Production Processing Facilities in the Cepu block, east of Java, Indonesia.

The Banyu Urip Full Field Development Project is operated by Mobil Cepu Ltd (subsidiary of ExxonMobil Corporation), and PT Pertamina EP Cepu (subsidiary of PT Pertamina), and it is targeted to produce 165,000 barrels per day, with full recoverable resources estimated to 450 million barrels.

These Zero Gas® vacuum degassing packages, whose overall deaerated water capacity exceeds 2,200 ton/h, allow Cannon ARTES to consolidate its presence in the Upstream Oil & Gas sector with top-ranking customers.
Cannon ARTES strengthens its collaboration with KPC Kuwait Petroleum Corporation, in particular with the refining subsidiary KNPC - Kuwait National Petroleum Company and the oil production division KGOC - Kuwait Gulf Oil Company. In the last years KNPC is carrying on an intensive activity to upgrade the three refineries on the Kuwaiti coast. Major goals are increasing the capacity and converting high sulfur fuel oil to higher value “clean products” for both internal and international markets, with consistent reduction of direct emissions, reducing gas flaring to less than 1%. In particular, at Mina Al Ahmadi Refinery (MAA), TECNIMONT is developing a lump-sum turn-key project for the engineering, procurement, construction and commissioning (EPC) services for a new acid-gas removal plant, AGRP (the process train of gas handling and sweetening facilities) and upgrading of the existing one.

With reference to the AGRP Project, TECNIMONT awarded ARTES with two major contracts. The first one concerns the supply of a demineralization and condensate polishing unit, with mixed bed ion-exchange technology, for the production of 90 m³/h of ultrapure water suitable to feed high pressure boilers.

The second contract awarded by TECNIMONT covers a thermophysical deaerator, designed against ARTES’s proprietary ZeroGas® technology, arranged with horizontal degassing towers in order to cope with the required deaerated water capacity of 450 t/h.

Still in MAA Refinery, Daelim Industrial has been assigned with LPG TRAIN-4 Project for the production of Ethane, Propane and Butane by the processing of gas from ethane, propane and butane fractions produced by KOC (Kuwait Oil Company) and by KNPC refineries. ARTES takes part in the project with the supply of another demineralization plant, ion exchange type, with a capacity of 140 m³/h.

The demineralization system is designed to treat raw water, perform efficient iron-removal, demineralization on fluidized bed cation and anion exchangers and polishing on mixed bed exchangers.

Expansion in Algeria

Concurring to the Algeria’s important program of modernization of the main refineries.

SONATRACH – Société Nationale pour la Recherche, la Production, le Transport, la Transformation, et la Commercialisation des Hydrocarbures – is undertaking the expansion of its existing refineries, for a total increase of about 5 million tons/year of crude oil processing capacity.

Technip France has been awarded by the Algerian national oil company, an approximately US $ 900 million contract for the refurbishment and revamping of the Algerian refineries within the “Algeria Refinery Rehabilitation project” that will produce gasoline compliant to European specifications.

ARTES has been contracted by Technip France for several water treatment units.

At first the demineralization plant. Based on ion-exchange technology and arranged on three trains, once in service it will be capable to deliver 595 m³/h and will be one of the largest demineralisation plants ever built by ARTES.

Furthermore, Technip entrusted Arts for the supply of a thermophysical deaerator, designed against ARTES’s ZeroGas® technology.

To meet the requested deaerated water output of 275 ton/h it will feature an horizontal degasging tower to accommodate the mass transfer area necessary to reduce the oxygen content from 10 ppm to 7 ppm.

At last ARTES secured also a cooling water filtration system based on ARTES’s proprietary HYDRABACK®, an automatic valveless gravity filtration which is very effective in the reduction of the suspended solids while having the lowest operating costs: operation does not require chemicals, instruments, blowers, backwashing pumps and tanks.

BONO is taking part to the “Arzew Refinery Rehabilitation project” supplying FBM Hudson Italiana S.p.a, which is collaborating with SONATRACH in several maintenance and service plant activities.

The scope of supply is a water tube boiler that generates 30 t/h high pressure superheated steam (60 bar – 469°C) for electricity production, feed water treatment (deaerator, chemical and dosing system – produced by ARTES), and accessories: control system, combustion system, fuel train.

SONATRACH is going to construct other four new refineries in the country, ARTES and BONO are willing to participate to the downstream projects, and to mining projects as well, since ARTES, in particular, has gathered remarkable experience in mining plants in Africa and New Caledonia.
BONO collaborates with CCC in UAE

BONO is collaborating with the Consolidated Contractors Company for two projects in UAE.

The current one, 100+MBD Das Facilities upgrade project, in Das Island, has been awarded by ADMA-OPCO, Abu Dhabi Marine Operating Company, to CCC which is charged with the engineering, procurement and construction work for upgrading facilities that will increase production capacity by 100,000 barrels a day.

BONO is building for CCC a turn-key water tube 68 t/h superheated steam boiler (12 bar, 250°C), ASME stamp, that will supply heat for the first fractional distillation process, close to the extraction field.

The boiler will be delivered as a package, including BOP: air fan, stack, pipeworks, economizer, the fuel gas conditioning skid and the dryer.

The feed water treatment, a 70 tons/h deaerator, is managed by the system company ARTES.

The peculiarity of this job is the sour service requirement, for which the definition of materials and the tests are critical: the combustion system will be fed by process gasses that have a high rate of sulphur.

Furthermore, BONO is going to deliver to UAE–Shah Gas field for CCC that is charged with the sulfur station and pipeline package - three water tube 18 t/h superheated steam boilers, ASME stamp, sandblasted and zinced, compliant to GASCO’s specifications.

The boilers’ steam will be used for keeping in temperature the stored sulfur and it will be used for sniffing.

More than 350 t/h steam capacity for PETROFAC, very active in the Middle East area since 2010

In the last two years BONO has been awarded by PETROFAC eight water tube boilers - for a total capacity of 355 t/h of steam production.

PETROFAC, the international oil & gas service provider, has been awarded a US$330 million lump-sum engineering, procurement and construction (EPC) contract by Gazprom Neft Badra B.V. for the first phase of the Badra Oilfield Development Project in Iraq, Wasit province.

The competitively tendered project will commence shortly and be completed in three 18-month phases, with final completion scheduled during the second half of 2015.

PETROFAC will provide detailed design, engineering, procurement, construction, pre-commissioning, commissioning and start-up work on the Badra development’s central processing facility, which comprises three crude oil processing trains.

In BONO’s premises the production of two water tube steam boilers, of 40 t/h capacity, 235°C, is in progress.

In 2011, BONO supplied to PETROFAC two 70 t/h water tube boilers for Turkmenengi, the state owned gas company in Turkmenistan.

The operating pressure of the plant is 49 bar and a temperature of 272°C firing natural gas and light oil.

The EPC company is in charge of a huge lump-sum turn key 10 bcm/year gas processing plant in South Yoloten.

This project is a step towards the target of the Government to export 180 bcm of natural gas a year by 2030 (starting from 11 bcm in 2011).

The collaboration with PETROFAC started in 2010, on the upgrading of the Acid Gas Removal & Sulphur Recovery Plant in Dukhan and Messedieh run by Qatar Petroleum.

BONO supplied three water tube boilers for the production of 45 t/h of saturated steam at a pressure of 18 barg firing natural gas. The water treatment system was provided by Cannon ARTES.
Cannon ARTES will contribute with two water treatment plants for the Shell project - Prelude, the first FLNG vessel operating in the Australian's coast from 2016.

In the next twenty-five years, demand for energy in the world will grow even further. The increase of the demand for natural gas is supported by the liberalization of some markets, newly found reserves worldwide, the stop to nuclear decided by many countries after Fukushima, and the lower exploitation costs and price than oil.

The new natural gas reserves to be exploited are mainly "unconventional" (shale gas) or in offshore fields off the coast. In the second case the use of traditional structures would be technically complex and very expensive, compared to the time of exploitation of the reservoir.

The situation has prompted the major Oil&Gas companies in developing LNG plants installed on board of ships, known as Floating Liquefied Natural Gas (FLNG) - in which the extracted gas is treated and directly liquefied and transferred to ocean-going carriers, which will load the LNG as well as other liquid-by-products (condensate and LPG) and deliver them to the market.

To reduce the assembly time of the plants inside the hull of the ship, the packages will be supplied fully modulated. A major challenge therefore consists in the mechanical design of the structures (size: 15m x 10m x 7m) that will support the weight of the equipments and ensure stability both during lifting and fitting, with an estimated weight of 90 tons, and under operating conditions, with an estimated weight of 150 tons able to withstand multidirectional accelerations.

The Engineering Department of Cannon ARTES has developed specific construction solutions to be able to respect the process guarantees required by the customer even in the presence of significant wave motion that could alterate the regular flows distribution inside the vessels irreparably compromizing the packages performances.

The condensate polishing unit produces 71 m³/h of deoiled water through three granular activated carbon filters sized at 100% of capacity; two of them work in series while the other one is on stand-by, according to the "nearly-go-round" scheme. An concentration of less than 0.2 mg/l of oils and residual hydrocarbons is guaranteed.

The demineralization system that treats the mixture of recovered condensate and desalinated water ensures a continuous production of 235 m³/h of demineralized water, thanks to the presence of three mixed-bed ion exchangers, containing strong cationic and anionic resin, each designed to treat 50% of the total flow rate. Two exchangers work in parallel, while the third one is on stand-by, ready to replace the first one that goes into regeneration. This process guarantees a specific conductivity of the demineralized water of less than 0.2 mS/cm.

The first unit of Shell FLNG will be followed in the upcoming years by other similar projects for extraction and liquefaction of natural gas in place, especially in Asia-Pacific always off the coast of northern Western Australia, south of Papua New Guinea and Malaysia. Other projects are related to Gaspe Gulf (Africa), Venezuela and Brazil where Petrobras has just begun the construction of a FLNG facility to be dedicated to the exploitation of the deposit of Santos starting from 2017.

The first FLNG facility in the World: Cannon ARTES is on board!

**Conventional LNG Supply Chain**

FLNG Supply Chain

The plants will cater both the permanent and the construction facilities of the complex and the personnel on the site. The Engineering Department of Cannon ARTES has designed and supplied the demineralization systems for three of the four camps in the Santos project.

**Location**
Browse Basin, 200 kilometres off Australia’s north west coast.

**Depth**
~250 mtrs.

**FLNG facility production facility**
3.6 mtpa of LNG, 1.3 mtpa of condensate and 0.4 mtpa of LPG

**Storage**
Below the deck and with a capacity up to 220,000 m³ of LNG, 90,000 m³ of LPG, and 126,000 m³ of condensate. The total storage capacity is equivalent to around 175 Olympic swimming pools.

**Workers**
>600 engineers have spent over 1.6 million hours working on the facility’s design options

**Weight**
600,000 ton - roughly six times as much as the largest aircraft carrier. Some 260,000 ton of that weight will consist of steel - around 26 times more than the quantity used to build the Eiffel Tower.
Recent achievements around the World

Water for Temporary Camps and Isolated Communities in Australia and Guinea

The Wheatstone LNG project represents one of the biggest projects ever achieved by ARTES: that will provide engineering, fabrication, supply and site supervision of a vast number of waste water treatment packages.

The plants will carry both the permanent and the construction facilities of the complex handling sanitary water from nearly 7,000 people, oily water and the sludge to be dehydrated. Treated waste water will be mostly reused within the complex.

ARTES is participating in SIMANDOU IRON ORE Project in Guinea held by RIO TINTO mining company. ARTES was selected by FLUOR as the contractor for the sanitary water treatment packages and the waste water treatment plants (17 units) which will cover all the working camps scattered alongside the construction facilities. More than 10,000 people will be served by ARTES’ plants at the peak of mobilization.

Since the number of people to be accommodated in the camps follows the progress of the project, a modular philosophy has been implemented: the units operate in parallel and they are "switched-on/off" upon request. Furthermore they are transportable: they can be moved from one camp to another, thanks to the easy procedures for quick installation and dismantling.

The 82 tonn thermo-physical deaerator supplied for the Suriname Refinery Expansion Project

BONO and ARTES in Suriname’s Refinery Expansion Project

In 2012 Staatsolie, Suriname’s state-owned oil company, awarded Saipem S.p.A for the engineering, procurement and construction of its Refinery Expansion Project at Tout Lui Four. BONO provided two fire tube heavy fuel package boilers which will produce 12 ton/h steam at 260ºC. Furthermore, ARTES provided the refinery waste water treatment plant with a flow rate of 102 m³/h and a thermo-physical deaerator of 82 ton/h.

The aim of the Refinery Expansion Project is to increase from 7,000 bpd to 15,000 bpd the company’s refining capacity producing high quality end products.

Complete Water Treatment Solutions for Upstream in Indonesia

ARTES is taking part in the Banyu Urip Full Field Development Project (East Java, Indonesia) operated by Mobil Cepu Ltd and PT Pertamina EP Cepu. ARTES is providing to the Consortium between the Korean Samsung Engineering and Construction Ltd and the Indonesian PT Tripatra Engineers and Construction Company many water treatment packages for different services:

- boiler feed water treatment package: pretreatment ultrafiltration and reverse osmosis dissilation unit, and mixed bed polishing system;
- injection water package: ZEROGAS™ vacuum deaerator;
- waste water recovery unit for injection: filtration and degassing

This is an example of how the wide range of ARTES’s solutions can fit all the water treatment needs for a plant.

Water Tube Boilers for the Moscow Refinery

BONO in partnership with the Italian company FBM-Hudson, has been selected for the supply of three big capacity water tube steam boilers for the Gazprom Neft Refinery in Moscow. The installation of the three new D-shaped boilers rated 65 ton/h of superheated steam (32 bar, 300 °C) is dedicated to the upgraded isomerization plant of Moscow Refinery.

Even if boilers have a big capacity steam production, their compact size permits them to occupy the available space in the most optimized way, being suitable for different types of layout.

Moreover, the boilers high efficiency grants low fuel consumption, water natural circulation, high quality components and optimized process grant low electrical absorbed power during boiler operation. In order to optimize benefits between costs reduction, transportation needs and delivery terms, the boilers have been prefabricated in loose parts at BONO’s Italian workshop and then assembled on site under its supervision. BONO is very acquainted with such jobs, since it has already supplied field erected boilers with a capacity up to 170 ton/h.

BONO equipment has been designed in compliance with SNIP construction codes and have GOST-R as well as RosTechNadzor certification. The boilers were delivered on April 2012 and now they have been completely erected. Their commissioning and start-up are scheduled for November 2012 and the performance test is expected for the end of the year.

One of the three D-shaped boilers for superheated steam generation supplied to Gazprom Neft Refinery, field erected

The 82 tonn thermo-physical deaerator supplied for the Suriname Refinery Expansion Project

BONO and ARTES around the World

They trust us!
As BONO intends to develop closer relationships with local oil & gas industries, such as PETROBRAS, it is obtaining the CRCC Certificate (“Certificado de Registro no Cadastro Corporativo”). This is the registry required for those companies willing to be included in PETROBRAS’ vendor list, that requires a long and complex judgment procedure. Taking also advantage of the local presence, BONO visited the Rio Oil&Gas Exhibition held in Rio de Janeiro from the 17th to the 20th of September and the ABTCP Pulp & Paper Exhibition in Sao Paulo from the 9th to the 11th of October. These events represented a great chance for BONO to develop its network contacts and to better spread its brand, based on suited solutions, high efficiency systems and care for the environment.

Abundance of natural resources, growing economy, awareness of environmental issues and energy-efficiency concerns: these are some of the key factors that attracted BONO's Industrial Division to participate of the growing demand and satisfactory results offered by Brazilian industries. In particular oil & gas, pulp & paper, food & beverage, textile, chemical & pharmaceutical are fast growing sectors that can be provided with BONO’s steam generators and thermal heaters. To guarantee rapid sales and after sales response to the Brazilian market, the Cannon Group is increasing the structure of its office located in Sao Paulo, which is already operating in the Polyurethane technology since 2007. Now, with a team fully dedicated to energy and environmental issues, the office aims also to support Cannon BONO Engineering Division and Cannon ARTES.

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![ASME stamp renewal](image)

BONO holds ASME S, U and R Stamp since 1998 and has just passed its 5th renewal audit.

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