



WATER TREATMENT

Water used in technological and/or industrial processes must undergo special treatments to achieve the results needed for the purpose. Modern industrial production lines require process water with precise characteristics that remain constant through time, in the same way that water used in food production needs to respect strict health and hygiene regulations.

ABEL offers its clients tailor-made solutions and/or EP&PM (Engineering Procurement & Project Management) services in a variety of industrial sectors.

ABEL has an open-minded approach to ensure efficiency is improved, and management costs reduced. In particular, its innovative systems solve the performance and energy consumption-related issues of traditional solutions.

MAIN TECHNOLOGIES USED

Filtration with MF, NF, UF and RO membranes	Carbon filtration to remove organic and perfluoroalkyl substances (PFAS)	Ferric hydroxide (GFH) filtration for removing arsenic and other metals
Chemical and physical treatment to remove metals	Membrane treatments for oil emulsions	Membrane treatment for mining waste water
Combined membrane and evaporation filtration treatments	MBR biological treatment with high efficiency membranes for complex waste	MBBR biological treatments
Advanced oxidation processes	Ionic or reverse osmosis demineralization with or without EDI to obtain EPW	Evaporation - Crystallization

PLANT RENTAL

ABEL offers solutions tailored to the needs of its industrial clients.

ABEL offers two types of plant rental options for treating complex waste waters:

- "light" rental contract
- "full" rental contract

CHEMICAL AND PHYSICAL PLANT

Engineering, construction and assembly of a chemical physical plant with dissolved air flotation system (DAF).

Client: **Misitano & Stracuzzi SpA** | Year: **2019**



ODOUR TREATMENT

Sizing, supply and assembly of biofilter odour treatment plant.

Client: **Misitano & Stracuzzi SpA**

Year: **2018**





WATER TREATMENT

Revamping and upgrading of biological treatment and ultrafiltration sections using MBR membrane.

Client: **Silcompa SpA**

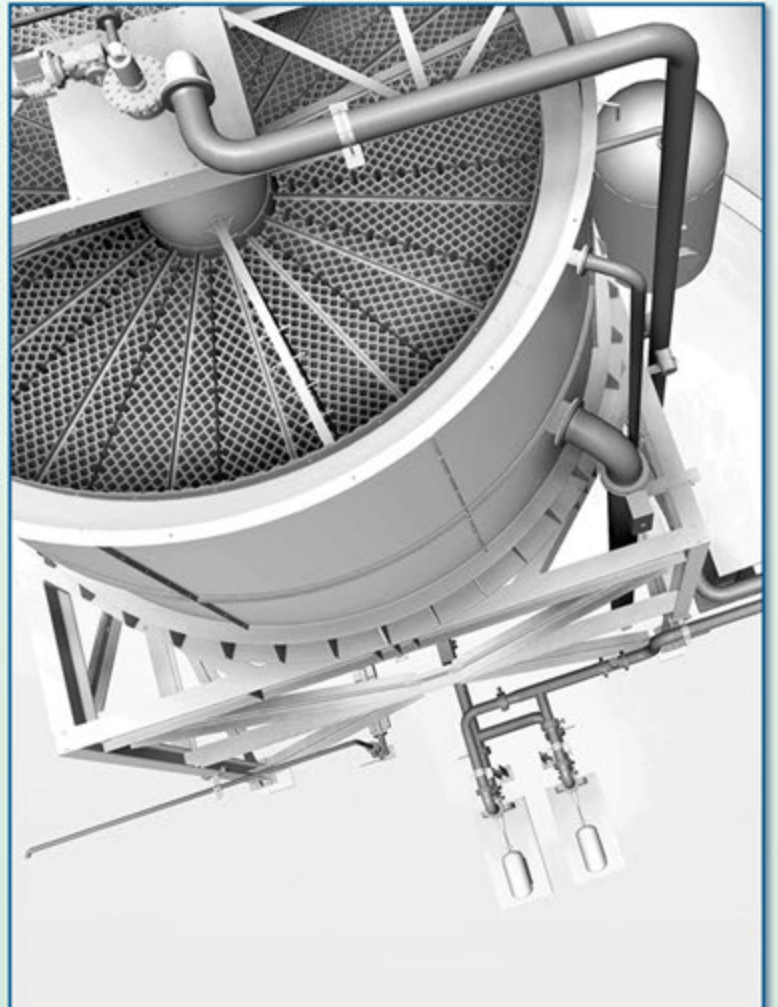
Year: **2019**

SLUDGE TREATMENT

Sludge treatment plant built with a lamellar pack sedimentation machine, also supplied with the appropriate electrical panel.

Client: **Cartiera Ciacci SpA**

Year: **2019**



OUR COMMITMENT FOR THE ENVIRONMENT

ABEL pays special attention to reusing water as a key to preserving our natural resources.

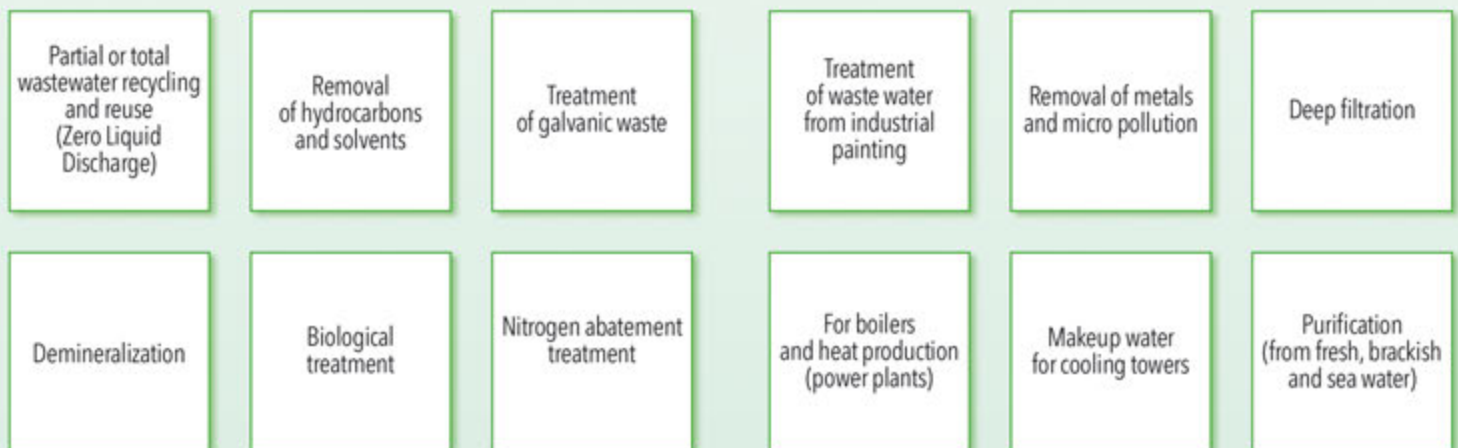
Waste water treatment is an important part of this approach.

Treatment of industrial waste water contaminated with organic and inorganic pollutants is of two kinds: ordinary, adopting activated sludge sedimentation and filtration; or complex, adopting AOP advanced oxidation processes, membrane filtration, highly concentrated activated sludge and ion-exchange chelating resins.

Plants currently used for waste water treatment are rarely high-performance. Maintenance costs are often considerable. **ABEL's** products and approach are geared towards improving the quality of the waste water and, most importantly, towards reusing it, thereby management costs and environmental impact.

ABEL's consolidated research and development team, and its work with major Italian and international organizations, enable us to offer optimal solutions for effective water treatment systems that resolve and optimize our clients' primary and waste water issues.

APPLICATIONS



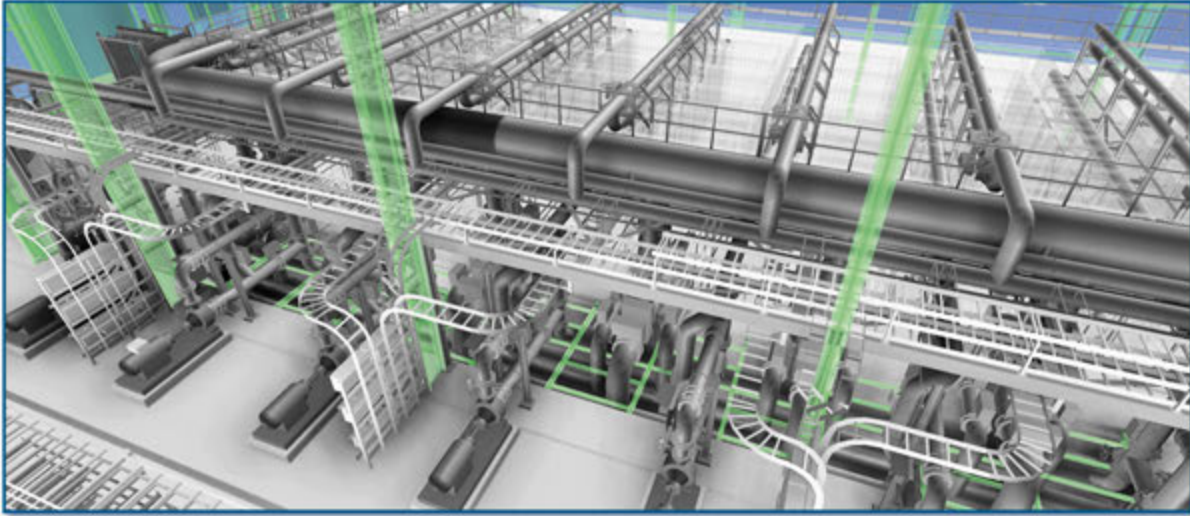
SKILL AND FLEXIBILITY AT THE DISPOSAL OF OUR CLIENTS

The **ABEL GROUP** offers services and plants in the fields of industrial engineering, process and waste water treatment, and renewable energy. Our expert technical and engineering team tackles complex problems and offers innovative technological solutions that ensure excellent performance and cost control.

RIVER WATER TREATMENT AND PURIFICATION PLANT

Detail engineering for river water treatment.

Client: **GE WATER** | Year: **2017**



PLANT FOR TREATMENT OF PETROCHEMICAL PROCESS WASTE WATER

Detailed multidisciplinary engineering for plant preassembled on skid.

Client: **3V Tech** | Year: **2018**



ON-SHORE PLANT FOR SEA WATER TREATMENT

Complete engineering for on-shore plant and assembly assistance.

Client: **SWS** | Year: **2015**

SERVICE



Engineering

The engineering department chiefly focuses on developing each phase involved in industrial plants, such as piping, structural steelwork, electro-structural parts and mechanical engineering.



Construction

The Construction Department designs industrial plants according to technical specifications defined by the client and developed by the engineering department.



O&M

ABEL avails of a management and control department that oversees the quality of the projects and their maintenance. Its aim is to ensure optimal efficiency of the plants it designs and installs.

PLANTS



Water treatment

Water used for technological and/or industrial purposes must undergo special treatments to achieve the necessary results. Modern industrial production lines require process water with precise characteristics that remain constant through time, in the same way that water used in food production needs to respect strict health and hygiene regulations.



Renewable energy

ABEL develops renewable energy solutions, particularly designing and building plants to produce biogas from agricultural biomass and waste-to-energy optimization plants.



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