MAPNA GROUP
MD1 Co.

MAPNA Power Plants Construction & Development Co. (MAPNA-MD1)

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Who We Are

MAPNA Power Plants Construction and Development Company (MAPNA-MD1) was founded in 1999 as a subsidiary of MAPNA Group to implement a plan titled "30 Gas Turbines". Following changes in the structure of MAPNA Group, the successful plan for 30 Gas Turbines was later registered as the first independent company of the MAPNA Group by the title MAPNA Power Plants Construction & Development Company MAPNA Power Plants Construction & Development Co. (MAPNA-MD1). A decision was made to continue the 30 Gas Turbines plan by launching 16 power plants generating a total power of 2544 MW, as well as four power plant projects defined for MAPNA-MD1.

Since the beginning of its operation in constructing and commissioning power plant and other industrial projects, MAPNA-MD1 has always driven the industrial growth of Iran forward, leading to prominent achievements.

In the course of its operation, MAPNA-MD1 relies on remarkable capabilities of experienced experts in design, engineering, supply, construction, installation, and commissioning industrial and power plant projects. We are now an outstanding brand distinguished from our competitors for the creativity and leadership abilities of our managers.

Mission

We employ a wide & unique network and a team of experienced experts to provide engineering, supply, and construction services in the following areas:

- Thermal power plants
- Mechanical and electrical BOP of thermal power plants
- Cooling systems
- Water processing and treatment systems
- Dispatching, power substations, transmission and sub-transmission lines
- Small scale Power plants (DG, CHP and CCHP)
- Renewable energies
- Waste-to-energy

Thermal power plants

MD1's key activity is construction of thermal power plants including gas turbine, combined cycle, and steam units.Md1's most important major activity involves constructing thermal power plants.
Relying on its brilliant past, MAPNA-MD1 has added over 23,000 MW to the overall capacity of the national grid.

See more here

Ferdowsi Power Plant

Ferdowsi Power Plant

Behbahan Power Plant

Isfahan II Power Plant

Supervising over thermal power plant construction projections

Mechanical and electrical BOP
of thermal power plants

Any industrial or power generation unit needs utility systems to achieve its main goals. MAPNA-MD1 is particularly specialized and experienced in design, supplying equipment, and implementation of utility systems commonly used for industrial and power plant projects.The utility systems consist of a mechanical and an electrical part.

Electrical part:

- MV/LV motors
- MV/LV switchboards
- Cabling system
- UPS, DC power supply and diesel generator
- Drive systems
- Illumination system
- Telephony and paging system

Mechanical part :

- Pumping stations
- Fueling systems and tanks
- HVAC systems
- Cranes and monorails
- Fire extinguishing systems
- Steam generation systems

See more here

Isfahan2 Power Plant

Kashan Power Plant

Isfahan II Power Plant

Supervising over mechanical and electrical BOP projects for thermal power plants

Cooling systems

As a principal component of power plants, cooling system plays an important role in combined cycle and steam power plants as well as process and industrial units.

MAPNA-MD1 has acquired the knowledge and expertise in designing, supplying equipment, and implementing Heller Hybrid, ACC, and Once Through cooling systems (depenting on climte conditions) through transfer of technology from major European manufacturers.

We also provide technical and economic analyses for selection of cooling systems, changing different types of old wet cooling towers to dry ones, given the particular climate of Iran and the need to consume water efficiently. We also design, supply, and install cooling towers, condensers, pumps, fittings, piping, and control and protection equipment.

See more here

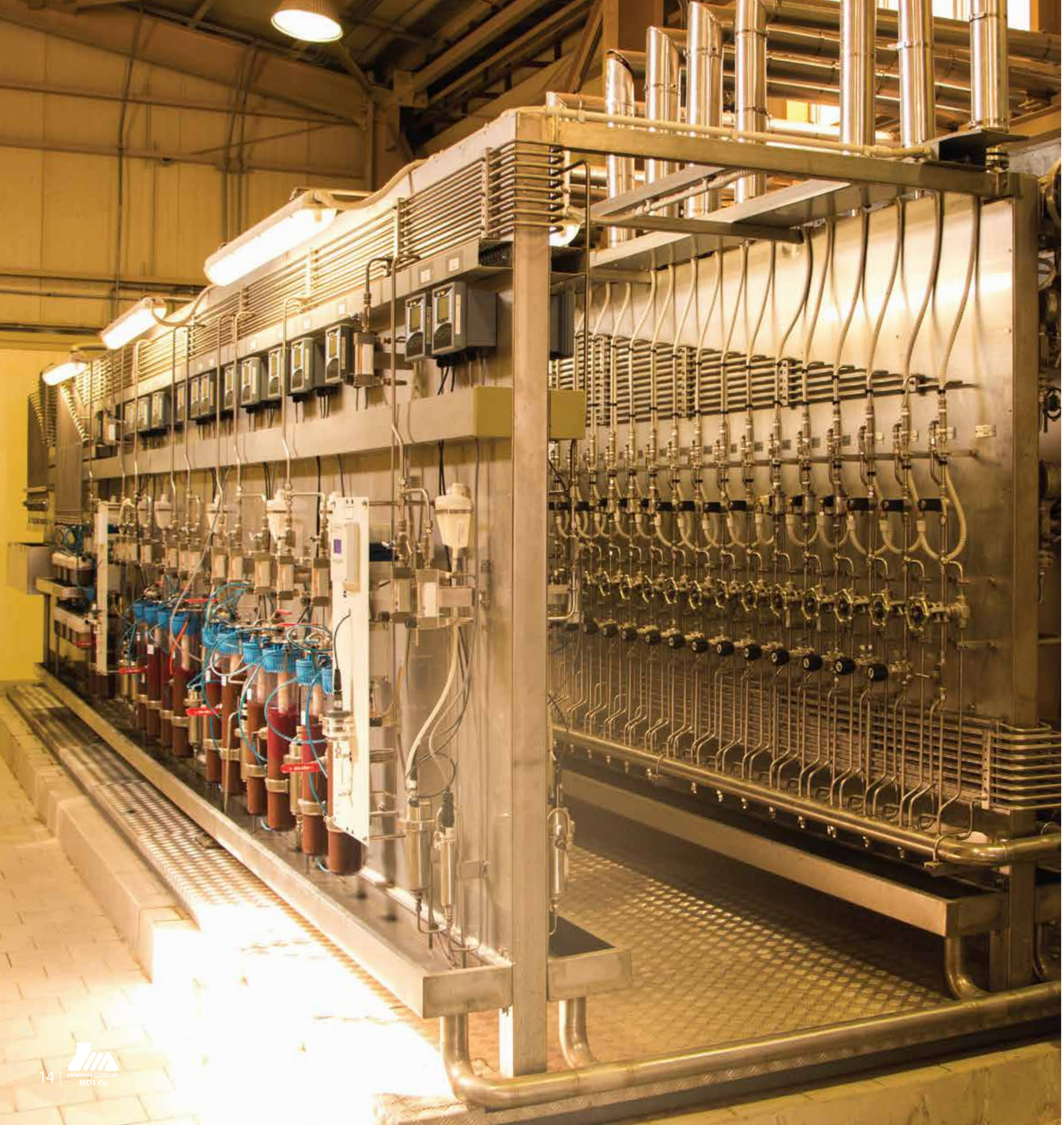
Behbahan Power Plant

Isfahan II Power Plant

Sabalan Power Plant

Kahnuj Power Plant

Supervising over Cooling systems projects



Water processing & treatment systems

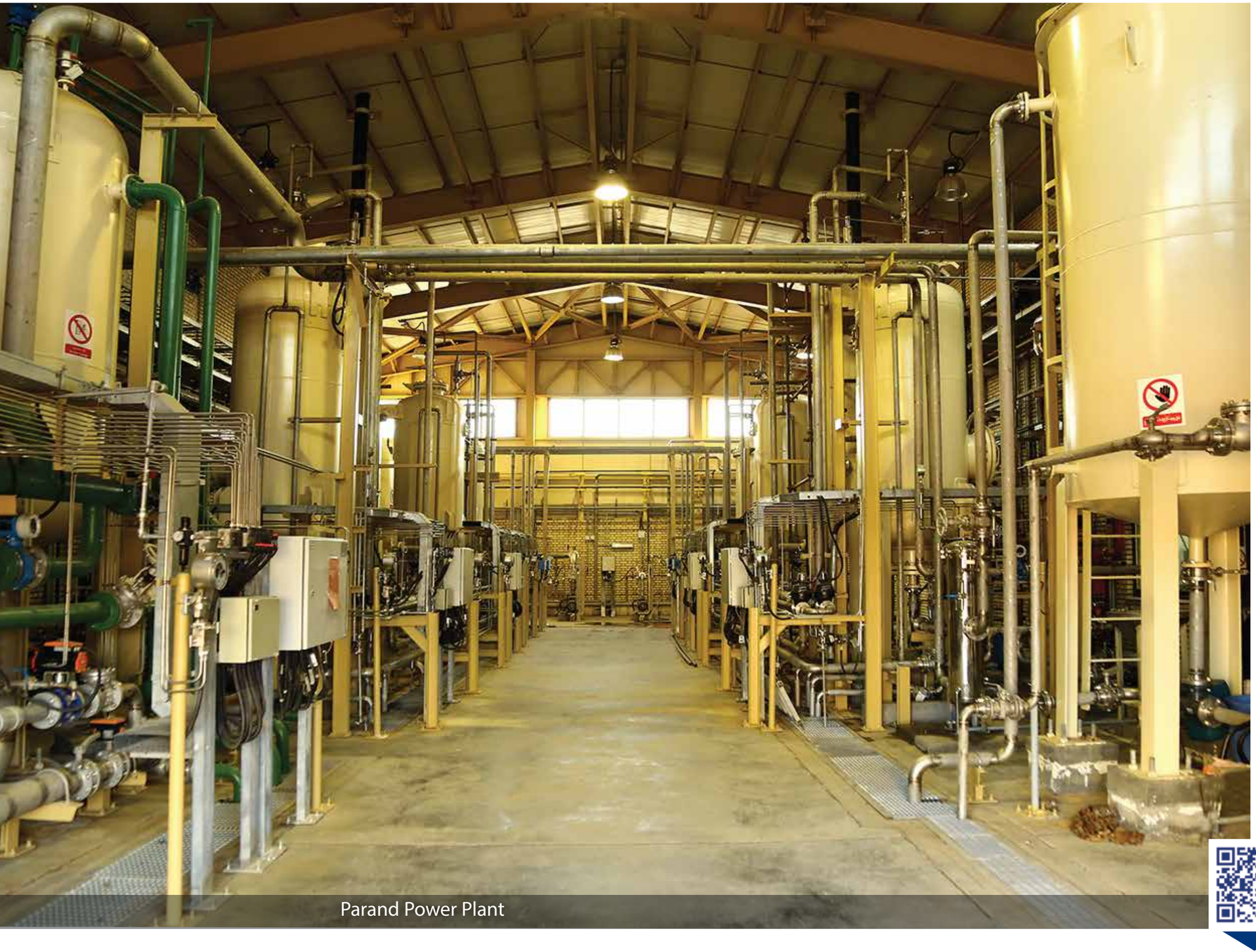
As natural sources of water differ in terms of quality of the water they produce and each industrial and non-industrial unit needs different levels of water quality, water processing and treatment units must be tailored to such needs. Industrial treatment facilities often have components for physical and chemical treatments which, depending on location and application, may contain one or more of the components below:

Physical treatment :
Untreated water tanks, sedimentation and coagulation systems, filtration units

Chemical treatment :
Disinfection, softening by adding chemicals (e.g. lime, NaOH) for removing ions, membrane desalination (reverse osmosis), ion exchange (resin exchangers, resin softeners, electrodialysis), and thermal desalination (MSF, MED, etc.)

We rely on our experience in constructing combined cycle and thermal power plants to design, build, supply, install, and commission water processing and treatment units as well as desalination systems. We have completed over 30 water supply and treatment units for operation so far.

See more here



Parand Power Plant

Isfahan II Power Plant

Isfahan II Power Plant

Supervising over Water processing
and treatment systems projects

Dispatching, power substations,
transmission and sub-transmission lines

HV substations connects power plants to the national power grid.They also establish connections between different voltage levels to supply electricity at voltages that can be used for industrial and household applications.
We have available a powerful team of experts to design, supply equipment, install, and start up GIS and AIS transmission and sub-transmission stations at 63, 132, 230, and 400 kV or higher voltages.
We also implement transmission lines for different lengths and voltages as required by clients as well as control and monitoring (dispatching) centers for power grids and gas networks.

See more here

Substation of Behbahan Power Plant

Substation of West Karoun Power Plant

Substation of Behbahan Power Plant

Substation of Ferdowsi Power Plant

Supervising Over Dispatching Power substations
transmission and sub-transmission lines Projects

Small-Scale Power Plants
CHP/CCHP/DG

The policies laid out by Iran's Ministry of Power favor promotion of distributed generation (DG) at consumption sites using small-scale generators. We use our capabilities in constructing large-scale thermal power plants to build small-scale plants equipped with systems that can be utilized for combined power generation and heating/cooling.

Advantages of small-scale power generators:
Significantly reduced loss, saving transmission and distribution costs, improved efficiency, providing opportunities for private sector contribution, enhanced grid security and stability, and the possibility for higher energy conversion efficiency using CHP & CCHP systems

A comparison of efficiencies of power plants

Large-scale (natural) gas turbine power plants	about 35%
Combined cycle power plants	about 55%
CHP	over 80%

See more here

Renewable Energies

We started by building a 55 MW wind farm with twenty two 2.5 MW turbines in Kahak (Takestan).
Following this successful project and given the growing development of wind energy applications around the world due to its cost-effectiveness in generating electricity, we started to expand our operation in this area to cover a part of electricity demand on the national power grid.
Since the technology required for manufacturing this type of wind turbines has been transferred from renowned international companies, all equipment and tools needed are completely manufactured by the companies of our group (MAPNA Generator Engineering and Manufacturing, MAPNA Electric & Control Engineering and Manufacturing Company, MAPNA STS, and MAPNA Turbine Engineering and Manufacturing Company).

See more here

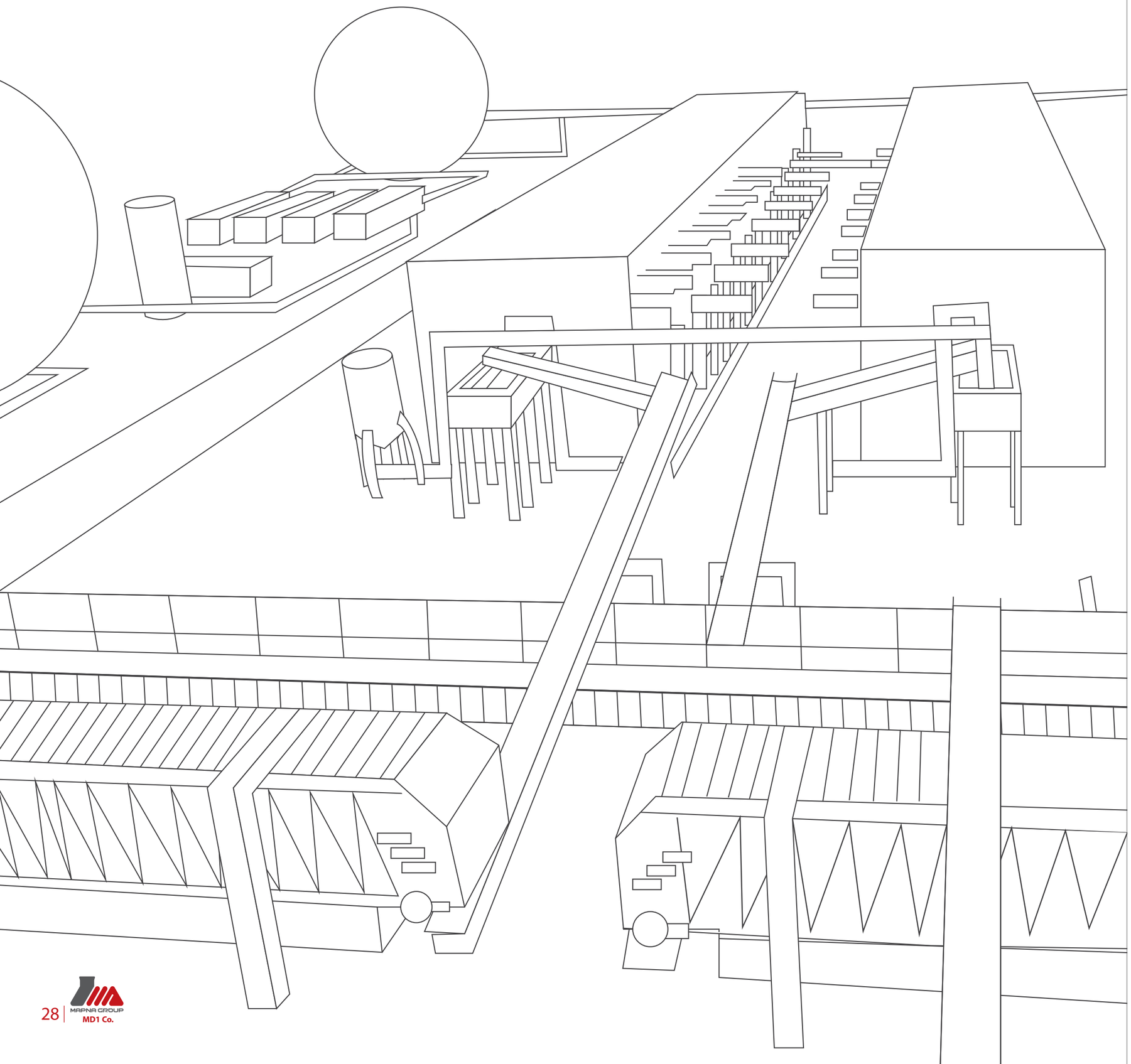
Kahak Wind Farm, Takestan

Kahak Wind Farm

Kahak Wind Farm

Kahak Wind Farm

Supervision over
Renewable energies Projects



Waste-To-Energy

Waste-to-energy involves generating electricity from waste using a digester system after separating recyclables and organic substances in the processing lines. These organic substances are fed into a dry anaerobic digester while unrecyclable materials are shipped to cement plants and incinerators in the form of refuse-derived fuel (RDF). The advantages of this strategy include a 90-percent reduction in waste and greater amount of energy generated by this combined system which offers an attractive solution for waste management authorities and the private sector.

See more here

Domestic Achievements & Awards

Grade1
Engineering, Procurement & Construction(EPC)
Contractor Qualification Certificate
for implementing industrial design-build projects

Industrial Management Organization's
A-rated certificate
for power plant operations

Patent for backup CBF
protection for HV switches
connected to steam units

Grade1 Contractor Qualification Certificate
for power generation,
installations and equipment,
and construction & building

Grade1 Qualification Certification
For Consultation Services
in electricity transmission, distribution, and generation,
renewable energy, energy optimization, dispatching,
and telecommunication

Patent
for ACC supporting structure

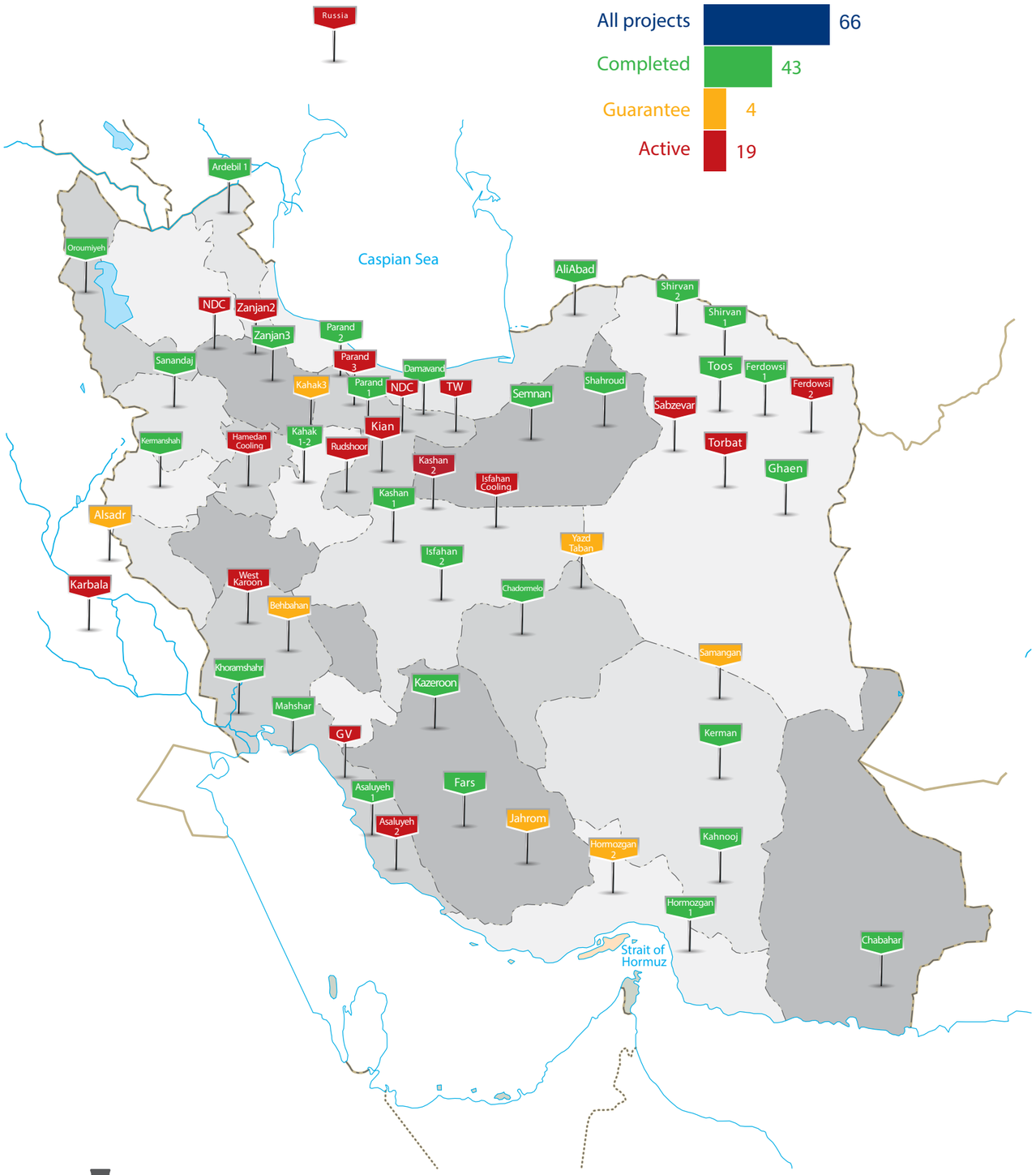
Awarded title for
Knowledge-Based Company
in cooling

Patent
for hybrid thermal-reverse osmosis water desalination plant
using gas-fueled internal combustion engines

HSE
Qualification Certificate

Patent
for steam duct ACC

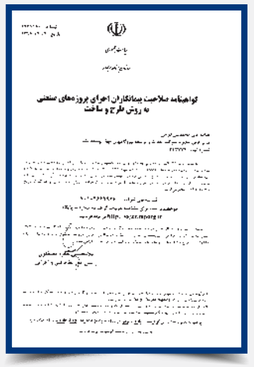
Projects by location



All projects 66
Completed 43
Guarantee 4
Active 19

Certificates

Contractor qualification certificate
(Domestic Certificate)



Engineering, Procurement and Construction (EPC) contractor qualification certificate for implementing industrial design-build projects
(Domestic Certificate)

International certificate for IT service management system

Qualification certificate for consultation services
(Domestic Certificate)

Industrial Management Organization's A-rated certificate for power plant operations
(Domestic Certificate)

HSE qualification certificate
(Domestic Certificate)