



# GMECH ENERGY

[energy@gmechgroup.com](mailto:energy@gmechgroup.com)

## Energy and sustainability solutions





## GMECH ENERGY

Energy and sustainability solutions

**Gmech Energy** is a member of **GMECH Group** which is one of the fast-developing private business groups in Egypt. It has 5 Sectors in diverse business such as Consultancy, Contracting, Manufacturing, agency and Energy & sustainability solutions .

**Gmech Energy** is specialized to provide Energy and sustainability solutions for our clients using one of the following solutions:

- Decrease consumption of resources.
- Using Energy resources friendly environment.
- Using heat recovery system to get benefit from waste energy.

We depend on our Energy auditors and on global corporate to achieve this target.

**2022** we established our energy audit team.

**2023** Signing a contract as a sole distributor in Egypt for the global brand **BROAD Group** subsidiaries are listed below:

- BROAD Air Conditioning Co., Ltd.
- BROAD Clean Air Technology Co., Ltd.
- BROAD Nearly Zero Energy Building Co., Ltd.
- BROAD Energy Service Co., Ltd.
- BROAD Renewable Resources Co., Ltd.
- BROAD Sustainable Building Co., Ltd.



## Energy Audit :

➤ **Gmech Energy** is a special provider of energy audit services, specializing in helping businesses and organizations optimize their energy efficiency and reduce their carbon footprint.

➤ With years of expertise and a team of highly skilled professionals, **Gmech Energy** conducts thorough and detailed energy audits to identify areas of energy waste and inefficiency.

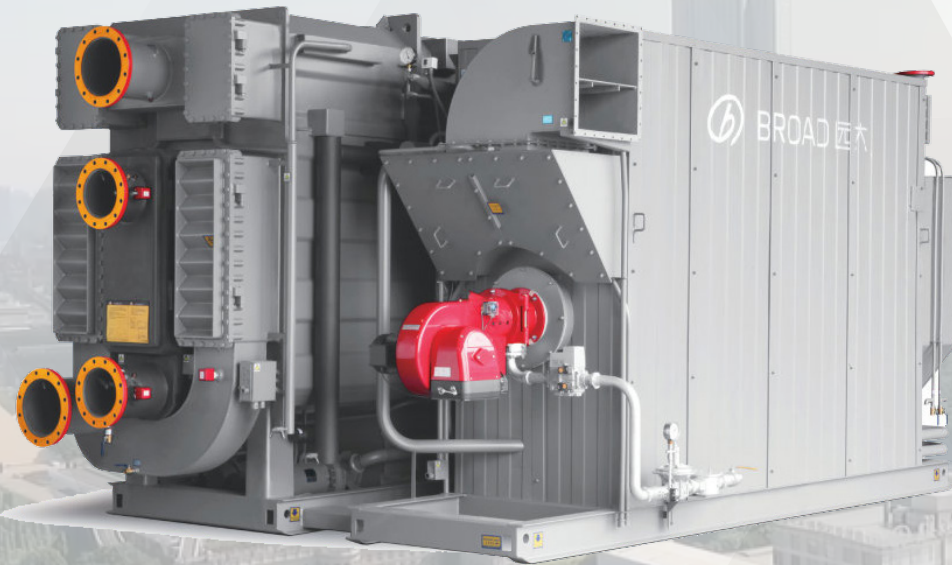
➤ By utilizing cutting-edge tools and methodologies, they collect and analyze data on energy consumption patterns, equipment performance, and building systems to provide accurate insights and recommendations.

➤ **Gmech Energy`S** energy audits not only help businesses save on energy costs but also contribute to a more sustainable future by promoting the adoption of renewable energy sources and energy-saving practices.

➤ With their comprehensive energy audit services, we do all of this whit our partner **BROAD GROUP**.



# BROAD GROUP



**BROAD Group** : established in 1988 and its headquarters is in Changsha, China. BROAD supplies non-electric central air conditioning (Absorption Chillers) powered by natural gas, fuel or waste heat, with packaged water distribution system.

Compared with electric chiller, absorption chiller energy efficiency is 2 times higher and can reduce CO2 emission by 4 times less than electric chiller.

In 1992, we developed the first unit absorption chiller in China and the first exhaust fired chiller in the world. Since 1995, BROAD Air Conditioning units have been taking the lead of the absorption chiller technology and have known world-widely as the expert of absorption chiller and energy saving leaders, more than 30,000 units BROAD chillers installed in 85 countries and regions.



## Central air conditioning absorption chillers:

### > Energy sources :

- natural gas, town gas, biogas, diesel fuel, hot water, exhaust or industrial waste steam etc.

### > Chiller types :

- Direct-fired chiller (double stage).
- Single stage hot water chiller.
- Double stage hot water chiller
- Steam chiller.
- Multi-energy chiller.
- Absorption heat pump.
- Packaged chiller with pump set.
- Condensing heat recovery chiller
- Triple stage hot water chiller.
- Magnetic Oil free chiller.

### > Functions :

- cooling.
- Heating.
- Hot water.

### > capacity :

- Cooling/heating capacity :  
(233 : 11,630kW) (66 : 3,307 RT).

# Why **BROAD?**



1-World's largest production line and largest testing platform FAT for BROAD chillers.



## 2- Advanced Lab

- 1 **Atomic Absorption Spectrometer.**  
analyze liquid & test contents in LiBr solution
- 2 **Auto Material Testing Machine.**  
To test tensile strength, deformation, elongation, curvature of various materials.
- 3 **Electrochemical Workstation.**  
affirm the occurrence mechanism and do microanalysis of corrosion.
- 4 **Optical Emission Spectrometer.**  
analyze metals in concentrations & elements of metals.



## 3- Life Time Service

- 1 **SMS /e-mail /Call notice service**
- 2 **One to one professional diagnosis**
- 2 **4 years Free - worn out spare parts & tools of chiller provided in supply list**



Global Monitoring System  
BROAD HQ, 24/7/365 monitoring



BROAD Engineer



BROAD Customer



Gmech Group Engineer



## 4- Chiller insulation

Site insulation



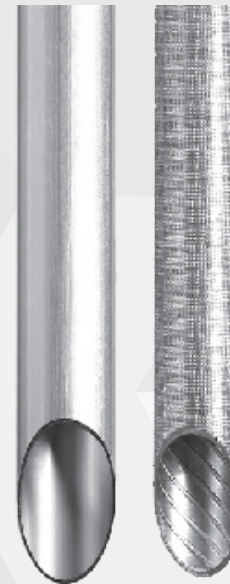
BROAD Factory insulation



V S

## 5- Evolutions of Tubes in BROAD Chiller

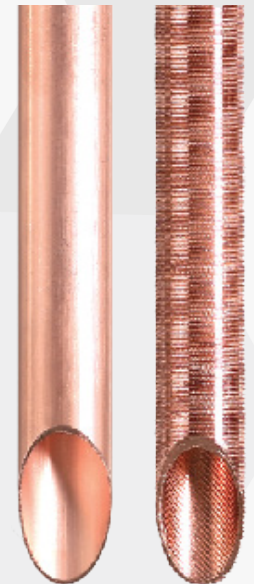
Since 2017  
Titanium tube



2012 : 2016  
Stainless steel tube



1992 : 2012  
Copper tube



## 6- Other benefits for BROAD Chiller



- **Separate heating technology to ensure lifespan.**
- **Titanium tubes to avoid any corrosion or leakage and insure 60 years lifespan.**
- **Auto anti-crystallization**
- **Chilled, heating, hot water can produced at the same time.**
- **Whole unit heat/cold insulation (factory mounted).**
- **Whole chiller filtration by install built-in auto back wash filter on inlet canned pumps to keep solution clean and protect canned pumps.**
- **Auto purge system to maintain vacuum**
- **3 level flow switches in evaporator to eliminate freezing**
- **Parallel flow for solution circulation to reduce crystallization possibility and energy consumption.**
- **8 level protection for HTG.**
- **Superamolecular polymer anticorrosive coating on water box**
- **Inverter control for solution and refrigerant pumps.**
- **Upward spraying nozzles can never be clogged by impurities, very well distribution for solution and no cooling capacity decrease**
- **On-line COP data display**

## 7- BROAD Group participation in international events



- BROAD was awarded “2011 Champions Of The Earth” from UN
- BROAD as the one of the case study in Mr. Ban Ki Moon’s speech “MUST CREATE A NEW MODEL FOR A 21ST CENTURY ECONOMY” in 2012 United Nations Conference on Sustainable Development in Rio de Janeiro.
- We`re thrilled to announce BROAD Group continued participation in the Asia-Pacific Forum on Green and Low-carbon Development, a journey that began back in 2016.



- This year the event was held on October 202023 ,21-, at the Changsha International Conference Center in Hunan, PRC. This year’s theme, «Transition and innovation: sharing new opportunities,promoting new development» brought together experts and visionaries to drive positive change in sustainability.



- Mr. Zhang Yue, President of BROAD Group and an Outstanding Entrepreneur Representative, delivered a keynote speech at the plenary session titled «The ROAD to COP 28: Asia-Pacific`s Fight Against Climate Change.»
- Together, we can shape the future and create a more sustainable and environmentally conscious world.

## 8-BROAD trusted clients :



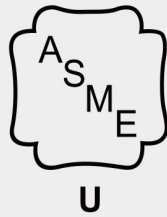
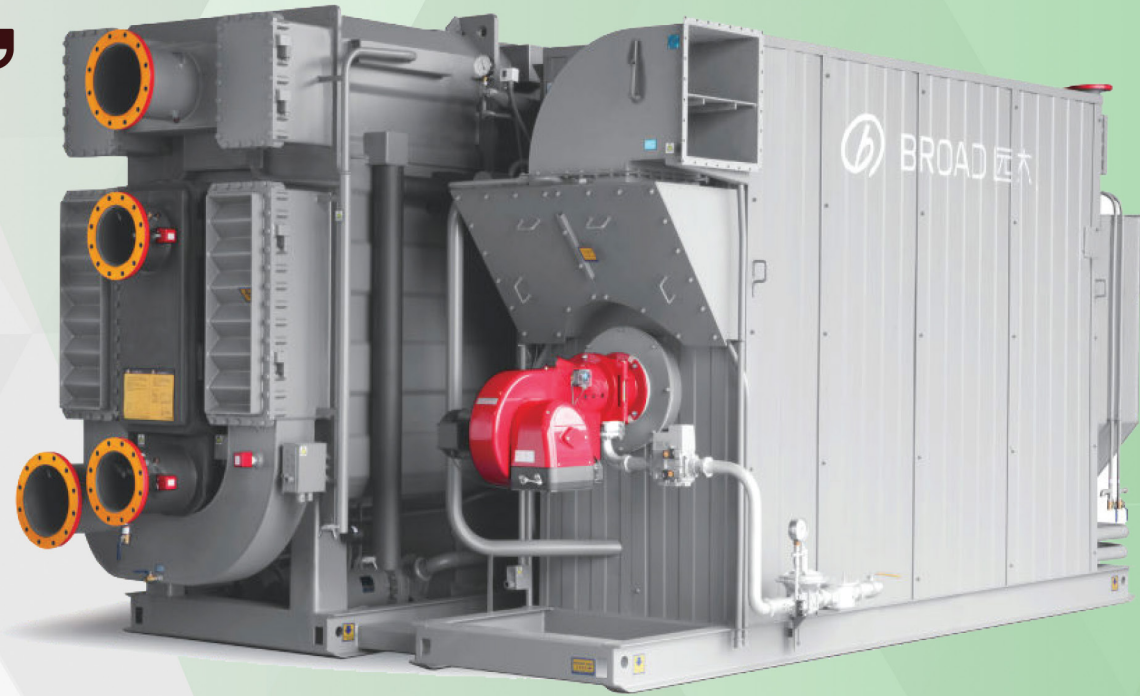
UNIVERSITÀ  
DEGLI STUDI  
DI MILANO



Procter & Gamble



“Sustainability is a mindset that ensures a better quality of life for future generations”



**Office**

Villa 202 , Near Vodafone square , 5th District , 6th October City , Giza , Egypt .

**Factory**

Km 26 Cairo Alex road Abou-rawash industrial zone , Giza , Egypt .

**Tel**

+20 2 383 41 51 4  
+20 10 21 75 75 11

**E.mail**

energy@gmechgroup.com