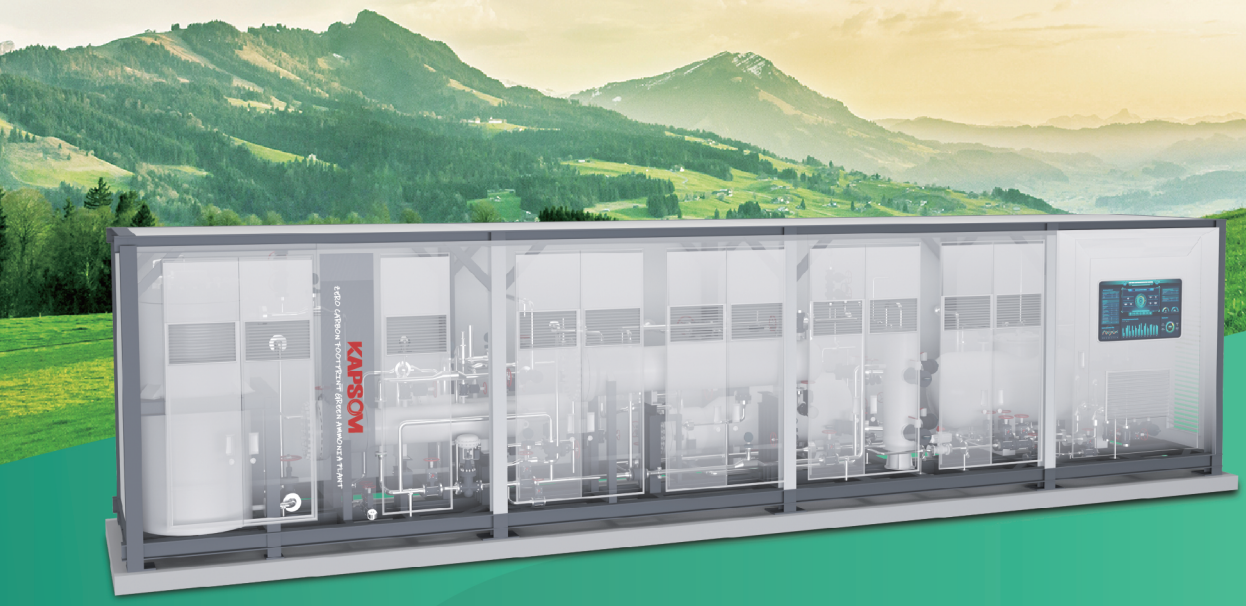
GREEN AMMONIA PLANT

LEARN MORE

ZERO CARBON SOLUTIONS



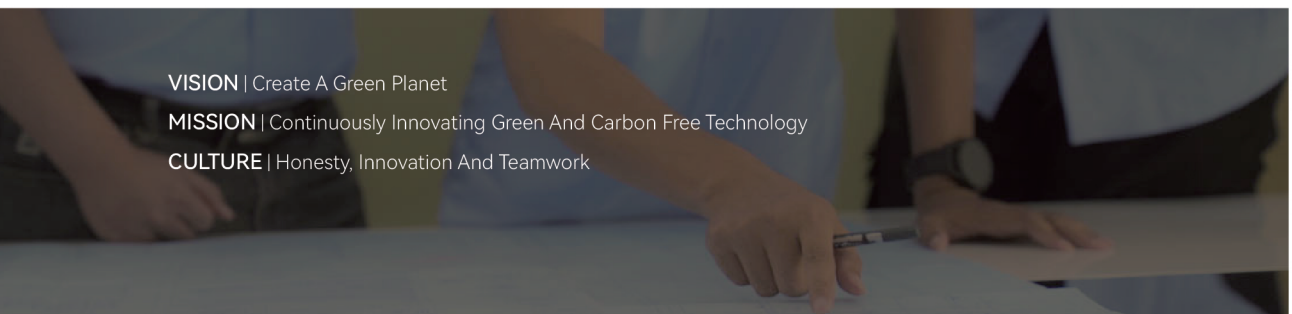
NANJING KAPSOM ENGINEERING LIMITED

GREEN AMMONIA TECHNOLOGY

KAPSOM has entered the green ammonia market with “one-stop solution” for small and integrated green ammonia plants. Powered by renewable energy, solar, wind, hydro, geothermal and more, green hydrogen comes from water and nitrogen from the air. Our green ammonia technology can also be applied as a hybrid solution to traditional ammonia plants, helping them gradually become green and sustainable.

ABOUT KAPSOM

As the pioneer in green ammonia industry, we are committed to providing reliable, safe and sustainable green ammonia solutions for our customers. From project feasibility study, engineering design, euipment procurement& manufacture, installation, commissioning till operation and transfer, our services cover the whole process.

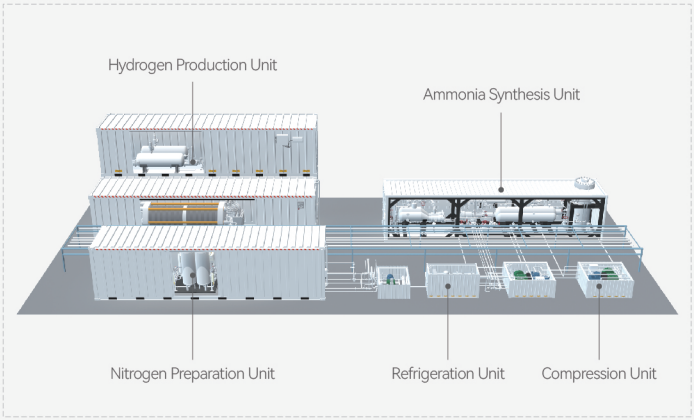


VISION | Create A Green Planet

MISSION | Continuously Innovating Green And Carbon Free Technology

CULTURE | Honesty, Innovation And Teamwork

MAIN PARAMETERS



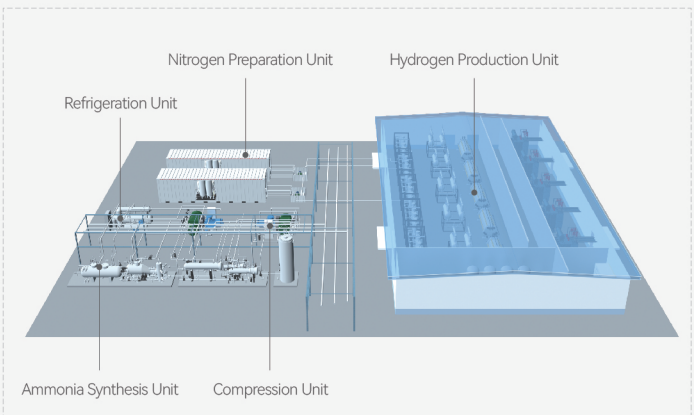
◀ LAYOUT DIMENSIONS OF GA-2000

Unit	Length (m)	Width (m)	Height (m)
Hydrogen Preparation Unit	13	6	5.5
Nitrogen Preparation Unit	10	6	2.9
Compression Unit	10	5	1.7
Ammonia Synthesis Unit	12	2.5	2.8
Refrigeration Unit	6	2.5	2.5

MAIN PARAMETERS OF GA-2000 (2,000TPA)

Unit	Hydrogen Preparation Unit	Nitrogen Preparation Unit	Compression Unit	Ammonia Synthesis Unit	Refrigeration Unit
Cooling Water (T/h)	80	10	5	6	20
Electricity Consumption (kWh/h)	2,500	60	55	37.5	85
Floor Area (m^2)	78	60	50	30	15

*Volume ratio of the layout: 0.75 | Demineralized water consumption of hydrogen production unit: 0.5T/h
*All data are only for theoretical reference, and the specific data shall be calculated according to the actual project background.



◀ LAYOUT DIMENSIONS OF GA-20000

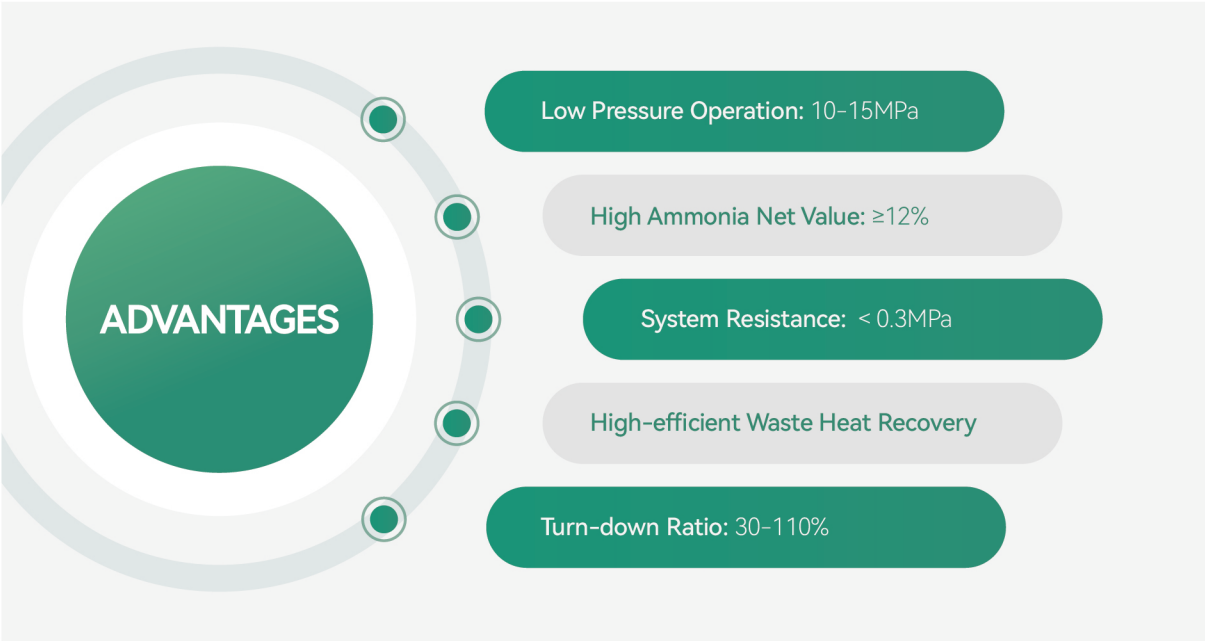
Unit	Length (m)	Width (m)	Height (m)
Hydrogen Preparation Unit	60	28	10
Nitrogen Preparation Unit	15	7	4
Compression Unit	14	10	2.5
Ammonia Synthesis Unit	12	7	4.5
Refrigeration Unit	10	3.5	3

MAIN PARAMETERS OF GA-20000 (20,000TPA)

Unit	Hydrogen Preparation Unit	Nitrogen Preparation Unit	Compression Unit	Ammonia Synthesis Unit	Refrigeration Unit
Cooling Water (T/h)	800	100	50	60	200
Electricity Consumption (kWh/h)	25,000	600	550	132	650
Floor Area (m^2)	1,680	105	140	84	35

*Volume ratio of the layout: 0.75 | Demineralized water consumption of hydrogen production unit: 5T/h
*All data are only for theoretical reference, and the specific data shall be calculated according to the actual project background.

ADVANTAGES



FEATURED STANDARD AMMONIA PLANTS

01 **INTEGRATED DESIGN**

The plant adopts a modular design with a high degree of integration, which is convenient fort transportation and installation. After arriving at the site, it can be quickly connected to the local utilities for commissioning and operation.

02 **REDUCED ON-SITE CONSTRUCTION COST**

The plant supplied by KAPSOM is highly prefabricated and pre-installed, which means it could reduce the investment cost of civil work.

03 **FLEXIBLE OPERATION**

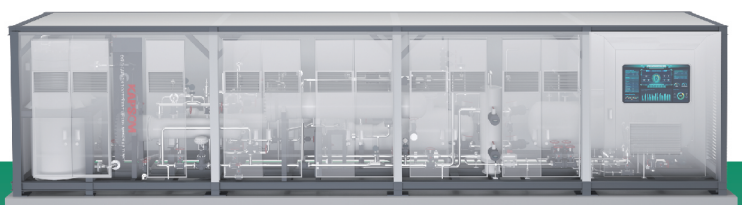
The plant combines the front-end power storage and the back-end hydrogen storage, supplemented by automatic control, to eliminate the effects of high frequency and wide fluctuations.

04 **SMART SYSTEM**

The plant is equipped with intelligent systems such as electronic kanban, remote APP, and video surveillance, which are conducive to monitoring the operation, reducing the workload of on-site operation and maintenance, and improving the safety, convenience, and efficiency at the same time.

05 **SHORT DELIVERY TIME**

We have developed 2,000 TPA and 20,000 TPA standardized green ammonia production plants, ensureing that we can deliver within 8 months at the earliest.



REFERENCED PROJECTS

"Customer-centric" is more than a slogan, and creating low-carbon life is by no means empty talk. We are keeping our promise by reducing carbon emissions with respectable and far-sighted owners. The following three projects are typical to our green ammonia production, which have witnessed the technological breakthroughs and equipment upgrades.

G-I Green Ammonia Plant

Capacity: 1,500 TPA | Power Supply: PV + Grid

Project Location: India | Design Base: Skid-mounted

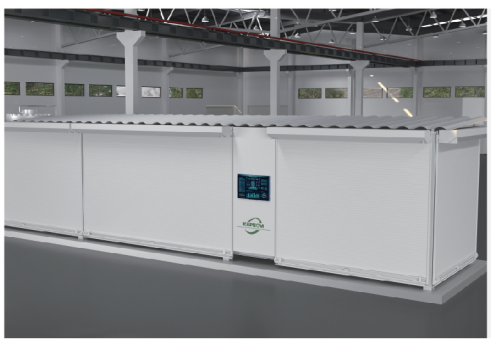
In 2021, KAPSOM helped a solar company in India build the world's first green ammonia plant, which can make them reduce CO_2 emission by 6,240 TPA. Through the success operation of the project, it is not only a typical demonstration plant of Power-to-X, but also lays the foundation for the customer's second phase of large scale green ammonia project.

G-II Green Ammonia Plant

Capacity: 2,000 TPA | Power Supply: PV + Wind + Grid

Project Location: Saudi Arabia | Design Base: Container

In 2022, KAPSOM assisted a Saudi Arabian renewable energy company with the implementation of a green ammonia plant. In order to facilitate equipment transportation, simplify on-site construction, and shorten commissioning and start-up, the project used the dimension of 40 GP container as the design basis for the ammonia synthesis unit for the first time, which is highly integrated.

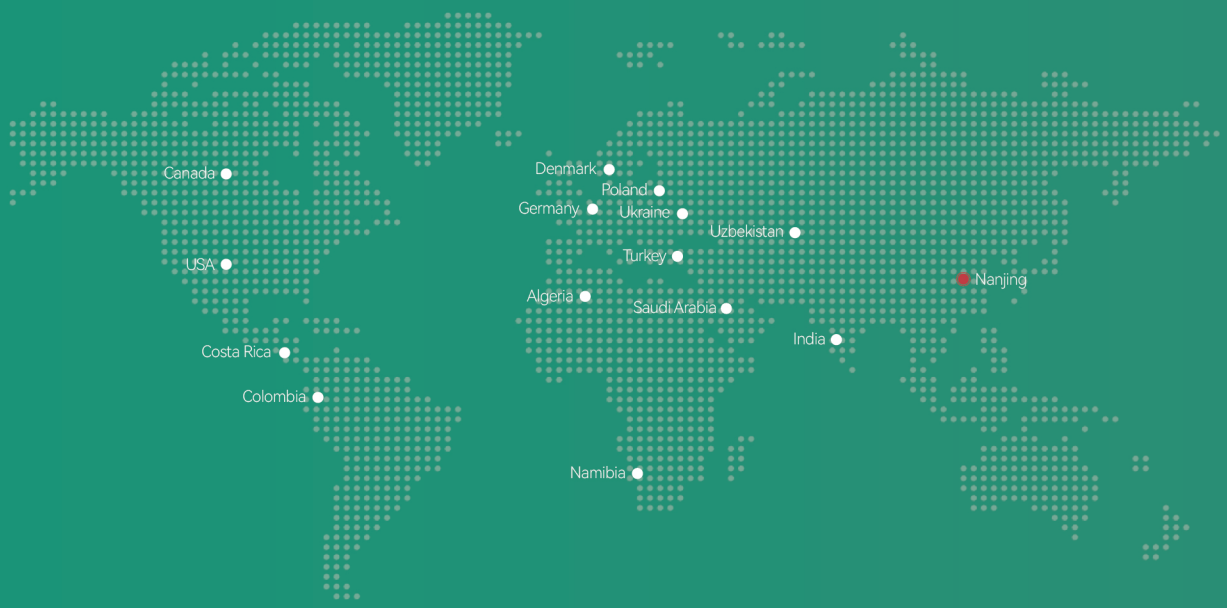


G-III Green Ammonia Plant

Capacity: 2,000 TPA | Power Supply: Hydro-power

Project Location: Colombia | Design Base: Container

In 2022, KAPSOM cooperated with a Colombian venture capital company to explore the field of green ammonia locally. The overall design of the project used containers as the basis to further improve the equipment integration of each main unit. At the same time a smart control system to realize automatic control was introduced into this project. It will save client 8,320 tons of carbon emissions per year.



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