



advancing synergy



GNE confidently aspires
to be the engineering and
preferred fabrication firm
throughout Southeast Asia



Who We Are

GAE masterfully bridges the gap between fabrication technology and engineering evidenced by the myriad of proficiency services we offer including electrical transmission & distribution, renewable energy, plant equipment and component manufacturing and industrial services. Our diverse expertise enables us to provide our customers with not only an impressive scope of services but also a distinguishable quality standard inherent in those products and services. Quality is a factor that inevitably sets us apart from our competitors and together with more than 1500 employees, we are committed to driving localization and engineering achievement.

Our talents extend, but are not limited to the following business lines:

- **Electrical Transmission & Distribution**
- **Renewable Energies**
- **Data Communication Network**
- **Plant Equipment & Component Manufacturing**
- **Pump Engineering & Rotating Equipment Service**

Vision

With upwards of 50 years combined experience, GAE has not only met but also has exceeded the unique demands and expectations of the engineering industry. Since its inception, GAE has focused on value based business by balancing management strategic needs in tandem with the needs of the current engineering business environment. Positioned as a global leader, GAE confidently aspires to be the preferred fabrication and engineering firm throughout Southeast Asia.

Mission

We facilitate an honest and cooperative working environment wherein every employee, both individually and collectively, dedicates himself or herself to professional integrity in providing our customers with affordable industrial systems and equipment. Likewise, our employees concentration is to present innovative solutions, despite outward challenges, through both time tested strategies and creative problem solving techniques.

brightening the future with

**electrical
transmission
& distribution**

Electrical Transmission & Distribution

GAE has been a steadfast proponent of the belief upgrades to electrical infrastructure will unavoidably power economic growth. As a matter of fact, "electric" is an element of GAE's very name. Today, our equipment and solutions are a vital part of many assorted industrial utility operations, as well as electrical transmission and distribution.

Monitoring & diagnostic for high voltage apparatus



Medium Voltage Distribution & Energy Management

GAE provides full medium voltage solutions combined with protection and control systems to not only meet but also surpass the Smart Grid requirements. Our medium voltage switchgears for both primary and secondary distribution are designed and built to comply with the requirements of both the energy and oil & gas industries. In energy management, GAE strives to provide the best solution that fits to customer needs for distribution feeder protection products, protection and control, substation automation and monitoring diagnostic. It is GAE's primary goal to not only comprehensively understand but also to successfully anticipate our client's changing needs for innovative technology in effort to develop and maintain sustainable client relationships. With that said, one of our main partners is GE Multilin who keeps

us on the forefront of breaking technology as well as energy saving solution from Theben. Our customer's varied requests for design, retrofit or installation of new systems remains our utmost daily concern evidenced by our flexible engineers who are able to provide open system solutions to increase reliability of electrical transmission and distribution systems.

Medium Voltage Switchgear Services

GAE offers Switchgear Services including repairs, conversions, modifications and uprates to extend the life of switchgear equipment. These services increase the reliability, predictability and accuracy of switchgears. We also provide expert service for equipment from other OEM's.

(Left) Final delivery inspection of medium voltage switchgear

(Right) High voltage substation automation



Power Distribution Products

With a comprehensive program, GAE provides products for commercial, industrial and utility applications in low voltage technology. We specialize in catering to critical process industries including, but not limited to the cement, LNG plant, oil & gas industries as well as commercial buildings. Such industries have trusted our proven ability to tailor solutions to through our motor control center, power distribution switchboard and power correction factor systems.

As a pioneer in industrial electrical goods distribution, GAE provides panel builder and system integrators with low voltage

components such as circuit breakers, meters, timers, capacitors, relays as well as industrial batteries. GAE's meters, relays, instrument transformers and insulators are designed and built in Indonesia according to SNI and IEC to accommodate fast growing demand and quick supply challenges. This agility and responsiveness is accomplished through, PT Guna Era Distribusi, our business unit for the sales distribution of GAE's low voltage electrical components and other reputable brands including Theben, Electronicon, Beluk and Panasonic. Consequently, our dealer sales network has the capacity to serve customers throughout Indonesia.

(Left) Solar home system controller

(Right) Low voltage components

(Next Page) Quality inspection of energy meters





a green environment for now and future

**renewable
energy**

Renewable Energy

Meeting the Challenge

Drawing from our of experience, GAE as a system integrator boldly accepts the challenge to deliver renewable energy solutions to governments, corporations and nonprofits. These clients require our know-how for rural electrification, integrated

microhydro development and inter connection of renewable energy power generation. Thus, our proficiency experience in solar energy, wind energy and hydro energy naturally conditions us to be exceptionally competent key players in engineering hybrid power systems.



Micro hydro (5m³/sec) of public work in Buleleng, Bali

Project Development and System Integrator

Simply put—decisions for renewable projects require in depth assessment. GAE's expert employees embrace a typical situations and environments in which only the end goal is clearly defined. Through understanding of our client's project and budget frame by listening, quantifying, analyzing and communicating the acceptable range of return, especially in a new project development, GAE is able to establish the platform for decisions to ultimately deliver

value in accordance with our client's objectives. Our willingness to carefully define each phase and our discipline in implementation reward us with trust and professional credibility which we believe, will serve as the basis for achieving our company goals.

GAE can skillfully assist with a "cradle to grave" plan of action on the following:

- Energy potential survey and feasibility analysis
- Design engineering and manufacturing
- Project development
- Contracting and installation



(Left) Micro-hydro (60 kW) in Makki district, Papua

(Right) Wind turbine (90 kW) in Nusa Penida island, Bali

Appropriate Technologies

We specialize in appropriate wind turbines for low wind speed, as well as develop advanced tower construction to overcome transport handling limitations between remote islands. In addition to the most innovative wind technology, GAE manages hydropower systems at both the micro hydro scale up to 300 kW and mini hydro scale up to 10 MW. Likewise, our micro hydro turbine pumps and our cross flow water turbines are designed and manufactured with robust controls to accommodate easy maintenance and operation in rural areas. Should the project require mini hydro capacity, GAE supplies the predominant turbine brands such as Francis, Kaplan, and Pelton. In brief, our proprietary control designs for both wind turbine and

micro hydro assure reliability at maximum operation. Fulfilling GAE's company mission, we pride ourselves on our local presence and domestic knowledge which allows us to adopt and assimilate innovative approaches to address challenges at a grassroots level and in turn fosters confidence and trust from our clients.

GAE also supports photovoltaic energy systems with both stand alone systems and grid connection systems. Our photovoltaic array ranges from as small as a single pair of modules powering LED street lighting to large scale energy systems powering telecommunication and repeater, village electrification, water pumping systems and vaccine refrigerators.

GAE's integrated solar-wind-diesel hybrid system manages the network site power from end-to-end, offering substantial operating cost reduction, security and reliability. Power as low as 500 kWp and above are able to be used for small grid systems as utility power in small villages.

Supporting the rural electrification program, GAE manufactures electronic fluorescent lamps for solar home systems and solar charge controllers according to the Indonesian National Standard (SNI). With their durable design and quality, these products are exported to other developing countries who recognize their functional, yet superior performance.

(Left) Micro hydro, 3 x 70 kW in east Luwu, South Sulawesi

(Right) Grid connected photovoltaic energy system (200 kWp) in Moro, Riau islands

(Left) Solar street lighting, LED 2 x 20 W, Katingan, Central Kalimantan

(Right) Wind turbine (80 kW) in Nusa Penida island, Bali



offering solution in

data network communication

Data Network Communication

In the business of data communication networks and access solutions for telecommunications, GAE serves both the energy and process industry as well as the telecommunication operators. Skillfully serving telecommunication operators, PT Krida Hasta Tama, another GAE business unit proudly represents

RAD Data Communication, Transition Networks, Patton and DowsLake Microsystems. Addressing the unique needs of industrial systems, GE Multilink and Garretcom are to provide solutions in industrial network communications specifically geared for harsh environments.

Mobile operators worldwide are optimizing their networks fueled by massive growth in new data applications, with the most cost efficient backhaul technologies

Quality Product for Every Specific Need

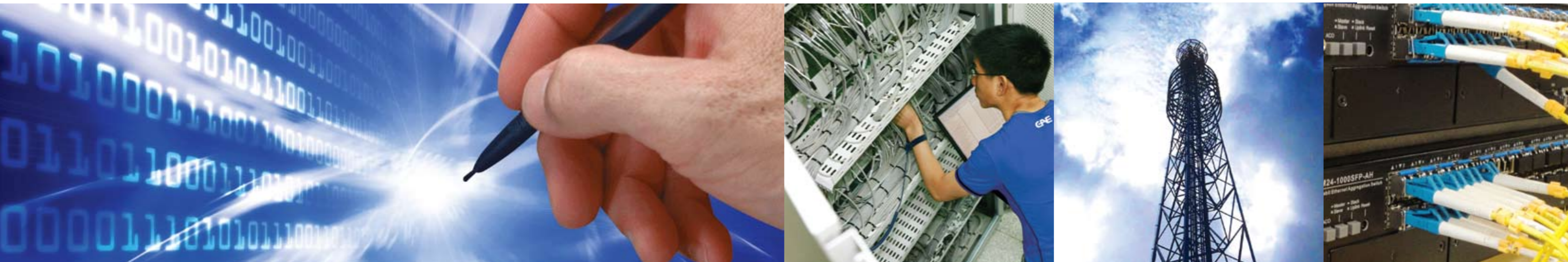
Our standout strength is in our exclusive ability to understand and respond to our customer's distinctive needs for custom project specifications. GAE's role is to simply submerge itself into the client's project to facilitate strategic formulations and to ensure proper execution of such stratagems. Coupled with both the most cutting edge technology and relevant industry studies, GAE has the foresight to balance the client's end goal with anticipated future capabilities. Our out of the box approach includes constant communication updates on work progress as valuable feed back for our clients internal monitoring and project management purposes. Supported by our reliable partners, our field engineers install and commission the equipment and

systems according to each and every client's required procedures. Furthermore, by cooperating with those reputable partners, GAE is able to satisfy the widest range of requests for products and systems as listed below:

- Network Components & Accessories
- Mobile Backhaul products
- Scalable Optical Transport
- Voice Over IP Solutions
- Carrier Ethernet Access
- Switching & Network Interface Devices
- Ethernet Switches & Converters
- Industrial Wireless Data Acquisition
- Industrial Fibre Optic Multiplexers

(Left to right)

- Commissioning and maintenance of network equipment
- SOH/SONET and ATM transmission system
- Metro ethernet switch in operation





supporting industrial
development through

**plant equipment
& component
manufacturing**

Plant Equipment & Component Manufacturing

Shaping the Future

Looking back, our plant equipment manufacturing launched with the fabrication of mechanical components used for the first Indonesian modular contained water treatment plant. Today, combined with our with 30 years experience in fabrication and our reputation of proven excellence in steel fabrication and sheet metal component manufacturing, GAE envisions ourselves as becoming one of the senior specialists in this industry throughout Southeast Asia with an extensive network among major players.

Water Treatment Plant Fabrication

Indicative of GAE's customary prominent performance, GAE also leads in water technology solutions for distributed water

treatment and wastewater reuse systems for both municipal and commercial buildings, as well as industrial applications. Our considerable experience in treating peat water from several swamp areas throughout Indonesia has afforded GAE the opportunity to formulate and perfect a pre-treatment method involving the combination of dissolved air flotation with ultra filtration membranes. This method has been designed with the goal of achieving zero waste in any applicable industry. For example, GAE has successfully designed and built membrane bioreactor plants in an automotive painting facility to maximize overall capability.

In addition, GAE answers the growing international problem of water scarcity with our constant research and development initiatives to ensure our position as a forerunner in water recycling of both domestic and industrial waste water.

(Left to right)

- Waste water treatment (dissolved air flotation) for candy factory
- 2 x 450 kW skid mounted mining dewatering pump with transformer, Newmont mining
- Potable water treatment plant, 4 x 40 l/sec, Pantai Indah Kapuk
- MicroPulsaire dust collector for Thies, gas flow rate 128.000 Am3/hr at 30 kPA

Plant Equipment Fabrication

Our fabrication plant, PT Guna Era Manufaktur has expertly collaborated on a myriad of successful projects ranging from dewatering pump systems for the mining industry and air compressor systems for the oil & gas industry to pressure vessels, dust collectors and silos for bulk materials. We dedicate ourselves to understanding the unique demands and requirements of any industry and delivering functional and custom, that ultimately make our clients more profitable. For instance, specifically for the mining industry, GAE provides dredging pump systems from Dragflow and powder processing solutions from Hosokawa Micron. GAE applies ASME-U stamp certification procedures while simultaneously adhering to our strict internal HES performance standards in not only our internal facilities but also on all external job sites.

Sheet Metal Jobshop

Located in Cikarang, Surabaya and Solo, Duta Laserindo Metal, another business unit of GAE, manufactures sheetmetal components with a state of the art CAD/CAM facility equipped with CNC machines for laser cutting, punching, bending and robotic welding. We predominantly focus on batch production of general and fine sheet metal components which allows us to pinpoint and align our lofty service goals on each project with our client's expectations. This synchronization is only accomplished through our high levels of technical and logistic communication and consistent on time delivery.

We are proud to serve world class manufacturers such as Caterpillar, Hitachi, Sakai and Trumpf Werkzeugmaschinen with quality products.

(Left to right)

- Precision bending of switchboard part
- CNC laser cutting for sheet metal
- Various precision bending parts
- Touch screen kiosk of Trukiosk





providing professional
**pump
engineering
& equipment
service**

Pump Engineering & Rotating Equipment Service

Pump Engineering

PT Torishima Guna Engineering (TGE), GAE's well established pump engineering company, is a complete rotating equipment service center. TGE's success is attributed to the fact that both its ferrous casting foundry and pump manufacturing facility for hightech pumps are located within the same premises. This suitably planned strategy has innately afforded an overall logistical advantage for both internal

efficiency and client convenience. We have the capability to engineer and manufacture turnkey pump system packages for oil & gas, hydrocarbon processing, power generation, water and wastewater and pulp & paper industries. To further support our turnkey projects, TGE manages and executes all engineering, procurement and contracting. Our company is certified for ISO 9001, ISO 14001, OHSAS 18001, API ISO/TS 29001, API Q1 and API Spec 5 CT.

(Left to right)

- Injection pump installation at geothermal plant, Drajat, West Java
- TGE team for maintenance management services for VICO gas plants, East Kalimantan
- Injection pumps API 610, 8 units at Chevron Pacific Indonesia in Riau

Professional Rotating Equipment Service

As both a member of GAE and Torishima Pump Mfg.Co. Ltd, TGE has direct access to world class engineering support and is recognized as one of the leading independent rotating equipment service centers in Southeast Asia.

The range of products and services offered by TGE extends to contract maintenance, shop and field engineering services for re-manufacturing, repairs, upgrading and reconditioning gas and steam turbines, centrifugal, axial and screw compressors, expanders, engineered pumps and other related equipment. We are here to meet the requirements for high quality, competitive equipment services demanded by rotating equipment operators in diverse markets

such as power generation, oil & gas production, refining, chemical, fertilizer, mining, steel, pulp & paper and many others. In order to meet market demands on turbo machinery service, we will continue to expand our facility and equipment, as well as our unyielding commitment to invest in the development of our human resources, our most valuable asset. Through these efforts, we boldly aim to provide the best turbomachinery repair services in the industry.

Test Facilities

Pump performance testing, be it for hydraulic assesment or full testing to prove package integrity, is our core strength as manufacturers of engineered pump systems.

(Left to right)

- Quality control inspection of repaired water injection pump API 610
- Low pressure testing facility, Max Q=7200 m³/hr – double suction pump
- High pressure testing facility, max 200 Bar – boiler feed pump for power plant
- Vibration & Condition monitoring of pump at gathering station of Chevron Pacific Indonesia



Our Business Partners

We have worked closely with treasured business partners for decades. We recognize the inherent value we deliver to our mutual clients when we work together. Our continued success depends on our ability to collaborate today, tomorrow and for years to come.

By engaging with both our clients and our partners, we will continue to build critical skills and to fuel responsible development in the areas of electrical distribution, renewable energy, pump engineering, and data network communication.



Group of Companies & Branches

Head Offices

PT Guna Elektro

Jl Arjuna Utara 50
 Jakarta Barat 11510
 T +62-21-565 5010
 F +62-21-565 5030
 E info@gae.co.id
 www.gae.co.id

PT Guna Era Manufaktur

Jl Jati Raya Blok J2 No 1,
 Newton Techno Park
 Lippo Cikarang Bekasi 17550
 T +62-21-8990 7620
 F +62-21-8990 7959
 E info@gae.co.id

PT Guna Era Distribusi

Jl Rawa Gelam 2 No 8
 Pulogadung Industrial Estate
 Jakarta Timur 13930
 T +62-21-4682 5050
 F +62-21-4682 4758
 E info@gae.co.id

PT Krida Hasta Tama

Jl Arjuna Utara 50
 Jakarta Barat 11510
 T +62-21-568 9011
 F +62-21-568 9012
 E info@gae.co.id

PT Torishima Guna Engineering

PT Torishima Guna Indonesia

PT Geteka Founindo

Jl Rawa Sumur Timur No 1
 Pulogadung Industrial Estate
 Jakarta Timur 13930
 T +62 (21) 460 3963
 F +62 (21) 460 3937
 E tge-info@torishima-guna.co.id
 www.torishimaguna.com

PT Duta Laserindo Metal

Jl Meranti 2 No 12
 Delta Silicon Industrial Park
 Lippo Cikarang, Bekasi 17550
 T +62 (21) 8990 7947
 F +62 (21) 8990 7949
 E sales.jkt@dml.co.id
 www.dml.co.id

PT Dempo Laser Metalindo

Jl Rungkut Industri I No 29
 Rungkut Industrial Estate
 Surabaya 60293
 T +62-31-843 7363
 F +62-31-843 7365
 E sales.sby@dml.co.id

Branch Offices

Surabaya

Jl Rungkut Industri I No 29
 Rungkut Industrial Estate
 Surabaya 60293
 T +62-31-849 9980
 F +62-31-849 9881
 E info@gae.co.id

Medan

Jl Haji Misbah
 Kompleks Taman Multatuli Indah
 Blok A No 41 Medan 20151
 T +62-61-451 7080
 F +62-61-451 2028
 E info@gae.co.id

Pekanbaru

Jl Meranti Blok A No 10
 Villa Garuda Mas, Pekanbaru 28291
 T +62-761-707 8353
 F +62-761-62 551
 E info@gae.co.id



Guna Elektro Group

Committed to make quality industrial system & equipment affordable

PT Guna Elektro

Jl Arjuna Utara 50
Kebon Jeruk 11510
INDONESIA

T +62 (21) 565 5010, 565 5020

F +62 (21) 565 5030, 567 4630

E info@gae.co.id

www.gae.co.id