



## EHOUSE AND PREFABRICATED SUBSTATION SPECIALISTS COMPANY PROFILE

**TGOOD**

Energy, Fast!

**Magnet**

- Global leader in eHouse and prefabricated substation solutions with the fastest manufacturing, delivery and installation times in the industry.





## THE TGOOD DIFFERENCE

- > Over 7000 prefabricated substations and eHouses produced annually.
- > Focus on prefabricated substation solutions, globally.
- > The fastest manufacturing, delivery and installation times in the industry.
- > Flexible solutions, designed according to client preferences.



> We measure delivery and installation times in weeks, not months

#### FASTER ASSEMBLY

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Many substation solutions ready to depart factory in as little as six weeks.

#### FASTER INSTALLATION

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Modular prefabricated substations vastly shorten on-site construction times.

#### FASTER CONSTRUCTION

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Minimized civil works immensely reduce building effort.

#### FASTER COMMISSIONING

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Rigorous factory testing reduces commissioning times by an average of 50%.









➤ Founded in 2004 by a forward-thinking team of German and Chinese engineers, TGOOD is the world leader in eHouse solutions today.

➤ Group with direct presence all over the world

Market Value of USD 1.8Bn

Revenue of USD 800M

6,000 Employees



# HISTORY

## 2004

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- › TGOOD founded as a Sino-German joint venture.

## 2009

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- › First company to be listed on the Shenzhen Stock Exchange, Growth Enterprise Board ("The Shenzhen NASDAQ"; 300001:CH).

## 2011

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- › Strategic partnership formed with Siemens AG to manufacture GIS RMU.

## 2014

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- › TGOOD Hong Kong established as hub for globalization.
- › Former Siemens manager Dr. S. Ruhland appointed president of TGOOD.
- › Market presence established in South America, Australia, and Africa.

## 2015

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- › TGOOD entered E-Vehicle charging field.
- › Market presence established in Middle East, South East Asia, Central Asia.

## 2016

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- › TGOOD became the biggest E-Vehicle charging solution provider world-wide.
- › Advanced energy management concepts developed based on new Micro-Grid technology.
- › Presence expanded to Mexico and Chile.
- › TGOOD Germany established as global R&D center.

## 2017

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- › Market presence expanded to Russia.
- › First 145/36 kV eHouse awarded in Australia and South Africa.

## 2018

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- › First Micro-Grid solution launched.
- › First 252kV modular substation project executed.



# TGOOD SOLUTIONS



## PREFABRICATED SUBSTATION

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Prefabricated substations are factory pre-assembled and tested to reduce installation, construction and commissioning times by an average of 50%. TGOOD's modular high and medium-voltage switchgear such as TGP145, THP145, TGS and TAP17 are installed in-house to drastically reduce manufacturing and assembly times. For many applications, overall foundation designs have been proposed by TGOOD, making construction easy and fast.



## SWITCHGEAR EHOUSE

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TGOOD's prefabricated eHouse solutions have been installed in the world's harshest outdoor operating environments. As the world leader in eHouse technology, we deliver thousands of units annually to meet the demands of customers and projects around the globe.



## TRAILER AND SKID SUBSTATION

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For temporary power solutions, emergency substation replacements and industry applications where a movable solution is required, TGOOD trailer and skid substations deliver an instant power solution. Our trailers are designed to meet international transportation standards.











国家电网  
STATE GRID

110kV 城市中心智能变电站  
110kV City Center Intelligent Modular Prefabricated Substation  
产品世界首创 技术水平国际领先

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## MODULAR SUBSTATION

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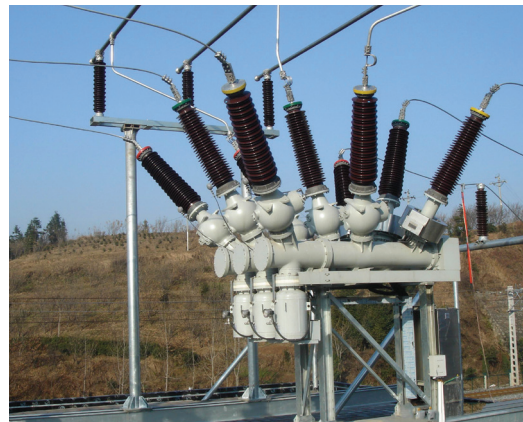
The TGOOD 145kV modular substation is a patented solution, ideal for crowded cities and congested industrial zones. Employing sealed GIS modules up to 145kV, modular substations are safe to touch and provide exceptional protection against vandalism. Attractive, compact designs along with low audible noise and electric field emissions make modular substations an optimal solution for densely populated areas.



## HYBRID GAS INSULATED SWITCHGEAR

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TGOOD HGIS (Hybrid Gas Insulated Switchgear) technology builds upon high voltage SF<sub>6</sub> gas insulated breakers but incorporates air insulated busbar modules for greater affordability. HGIS results in a standalone substation component that is easy to install, has a smaller footprint than the air-insulated equivalent, and costs less than a fully gas insulated system.



## GAS INSULATED SWITCHGEAR

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TGOOD HV GIS utilizes maintenance-free SF<sub>6</sub> gas insulated breakers for an extremely compact and versatile switchgear solution for challenging, space-constrained projects. Our integrated, modular GIS eliminates much of the expense, complexity and cost associated with traditional GIS systems.

## METAL-ENCLOSED SWITCHGEAR

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Medium voltage metal-enclosed switchgear offers innovative features to ensure safety and durability in a product ideal for space-constrained environments. Reliability and quality control are key, with each circuit breaker module type tested for up to more than 10,000 mechanical operations.

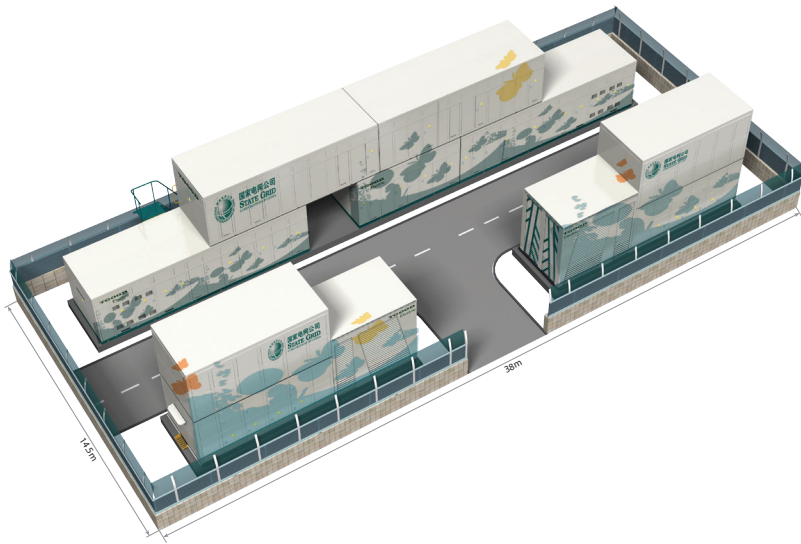
## TRANSFORMERS

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TGOOD offers a full suite of dry type, oil filled, and amorphous alloy core transformers as part of our prefabricated substation solutions. TGOOD transformers utilize cutting edge technology to reduce losses.

# > History of Successful Innovations

- 2004** First railway remote substation
- 2005** First 40.5 kV compact prefabricated substation
- 2006** First offshore platform substation
- 2007** First intelligent railway remote substation
- 2008** First skid substation
- 2009** First 110 kV urban substation
- 2010** First coal dual power supply substation
- 2011** First trailer substation
- 2012** First 145 kV modular substation
- 2013** First PV integrated substation
- 2014** First E-Vehicle group charging substation
- 2015** First 40.5kV and 12kV PV pad-mounted substation
- 2016** First 3x3 sections 110kV modular substation
- 2017** First 252kV modular substation
- 2018** First Micro-Grid solution









➤ TGOOD's high-capacity, ISO 9001 certified manufacturing process delivers consistent, high quality solutions with best-in-class lead times.





# MANUFACTURING EXCELLENCE



- 500,000 m<sup>2</sup> production facilities.
- Over 7000 prefabricated substations and eHouses produced annually.
- Proprietary offer includes eHouse, HV GIS, HGIS, transformers, metal-enclosed switchgear, prefabricated substations, RMU, and VCB.
- More than 1000 patents on eHouse, substation and switchgear solutions and production processes.



## GLOBAL PROJECT EXAMPLES



- > Industry: Forestry
- > Location: Chetwynd, BC, Canada
- > Customer: West Fraser Mills Ltd.
- > Project: Chetwynd Power Plant
- > Equipment: 25kV eHouse

We delight our  
customers with  
solutions that  
create more value  
than they expect



Over the past decade, we have provided prefabricated substations and eHouse solutions for projects in some of the world's most remote locations and inhospitable operating environments. TGOOD's project management experience and customer focus ensure that your project is completed on-time and on-budget.



- > Industry: Oil & Gas
- > Location: Kazakhstan
- > Customer: Maersk Oil Company
- > Project: Dunga Oil Field
- > Equipment: 35/10kV eHouse



- > Industry: Mining
- > Location: Kyrgyzstan
- > Customer: Kumtor (Centerra Gold/ Canada)
- > Project: Gold Mine Substation Replacement
- > Equipment: 110/6kV Prefabricated Modular Substation



- > Industry: Utility
- > Location: Mozambique
- > Customer: Mozambique Electric Company
- > Project: Power Compensation
- > Equipment: MV Prefabricated Substation



- > Industry: Mining
- > Location: Indonesia
- > Customer: Martabe Gold Mine
- > Project: Gold Mine Power System Compensator
- > Equipment: 10kV eHouse

# GLOBAL PROJECT EXAMPLES



- > Industry: Oil & Gas
- > Location: Colombia
- > Customer: Ecopetrol
- > Project: Emergency Power Supply
- > Equipment: 115kV 20MVA Trailer Substation



- > Industry: Oil & Gas
- > Location: Iraq
- > Customer: Misan Oil Company
- > Project: Intake Water Pump Station
- > Equipment: 132kV Mobile Substation





- > Industry: Oil & Gas
- > Location: Kazakhstan
- > Customer: CNPC and KazMunayGas
- > Project: Kazakhstan China Oil Pipeline
- > Equipment: 10kV eHouse



- > Industry: Utility
- > Location: China
- > Customer: State Grid China Corporate
- > Project: Linyi City Downtown Power Supply
- > Equipment: 110 kV Modular Substation



- > Industry: Renewable energy
- > Location: China
- > Customer: Xinyi Solar Co. Ltd
- > Project: 20MWp Solar Farm
- > Equipment: 35kV Modular Substation



- > Industry: Renewable Energy
- > Location: Malaysia
- > Customer: Cypark Resources Berhad
- > Project: 270kW On-Grid Solar Farm
- > Equipment: 11kV Prefabricated Substation



- > Industry: Renewable Energy
- > Location: Longreach, Queensland
- > Customer: RCR Infrastructure
- > Project: Solar Farm
- > Equipment: 22kV Modular Control and Switchroom Package

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