



# G.S. Energy Co., Ltd.

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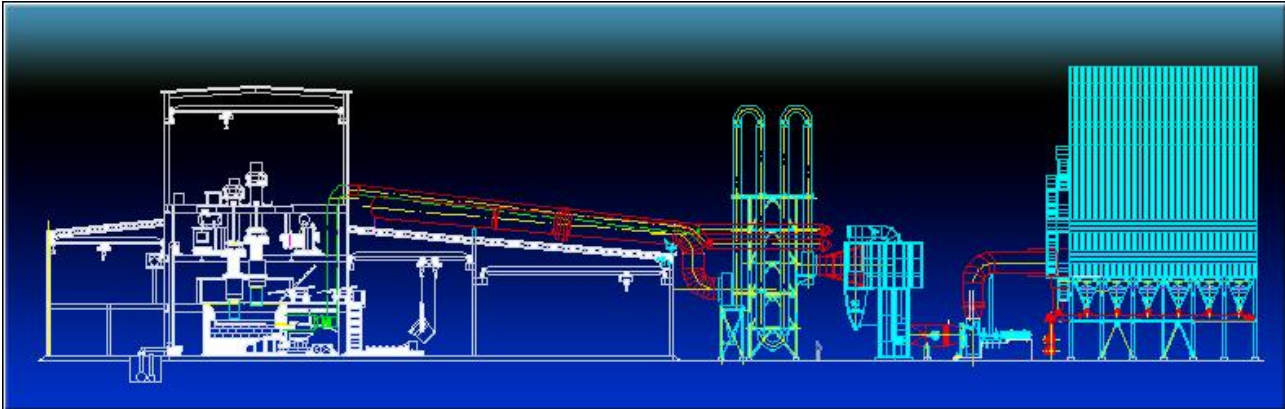


G.S. Energy Co., Ltd.

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# Company Profile

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G.S. Energy Co., Ltd. was established on 16<sup>th</sup> May 2008 with a capital of 880,000,000 Baht.

G.S. is the first Silicon Metal manufacturer in Thailand and has been approved by the Board of Investment of Thailand (BOI), certificate No. 1588(2)/2551. We produce silicon metal with 6 sets of 3-phase 12,600 KVA electric furnaces for the average production of 45,000 ton/year. We also supply Microsilica as our by-product.



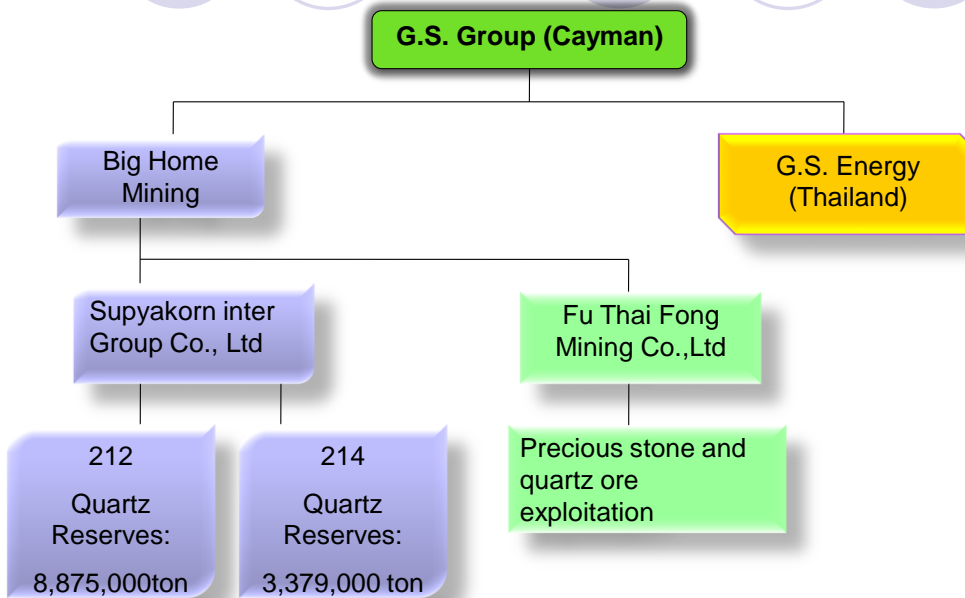
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# Group Structure

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## The subsidiary of G.S. Energy Group



G.S. Energy Co., Ltd. is a subsidiary of Great Silicon Group (Cayman). Under the group we have Supyakorn inter Group Co., Ltd which owns the Quartz mine where the GS sourcing from and Fu Thai Fong Mining Co., Ltd. which is the exploiter company.



G.S. Energy Co., Ltd.

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# Product Range

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G.S. offers a superior material for even the most challenging high performance applications. With its unique properties and characteristics, G.S. is aimed to be successful in a wide range of applications, from alloy to chemical applications or even the extremely high quality required raw materials for further process in solar cell and semiconductor industry.

## Silicon Metal Specification

	Si	Fe	Al	Ca
Si-2202	99.5	0.2	0.2	0.02
Si-3303	99.3	0.3	0.3	0.03
Si-411	99.3	0.4	0.1	0.1
Si-421	99.2	0.4	0.2	0.1
Si-441	99.0	0.4	0.4	0.1
Si-553	98.5	0.5	0.5	0.3

Specification: 10-100mm

For any other specific request beyond the chart, please contact us for customization.



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# Quartz Mine

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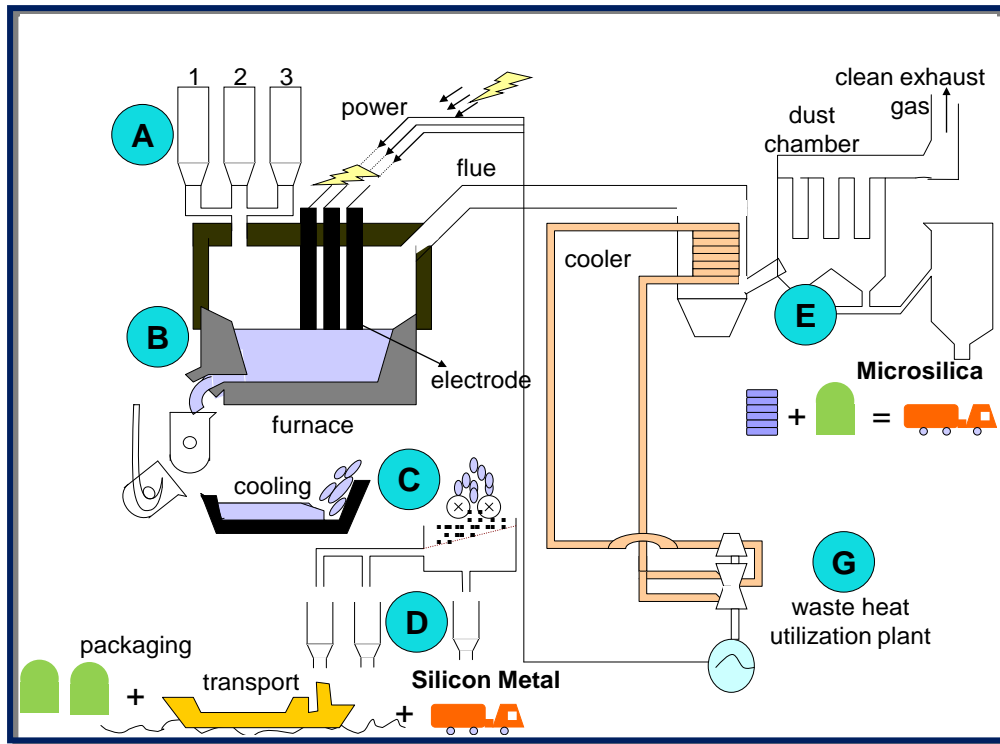
Having the mine reserves of 22,000,000 tons, we also supply high quality Quartz of SiO<sub>2</sub> purity around 99.3%.



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# Process Flow



- A. Three major raw material: 1. High quality local Charcoal, 2. High purity local Quartz, 3. Imported low sodium Petroleum Coke
- B. Carbon electrodes play a main role in the production processes in this submerged arc furnace. The electric current runs through the electrode between the contact plates and the tip of the electrode causing the ignition of the electric arc with its extremely high temperatures ( $> 2000^{\circ}\text{C}$ ) necessary for the reduction of quartz into silicon. Every day, around 22 tons of silicon per furnace are produced.
- C. The liquidized Si is then casted into a model for natural cooling to become solid Si, and then to be crushed into specified small size.
- D. Different grades of solid Si will be classified, packed and stored separately for further specified applications.
- E. The silicon fume from the furnace will be cooled and collected by the filter system. That is microsilica, which will be all supplied to the world microsilica leader, Elkem.
- G. The waste heat from the furnace can be collected to generate electricity for recycle utilization.

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# Mission and Vision

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## Mission

G.S. Energy will expand in the regional silicon metal market by using the highly qualified raw materials in Thailand and cooperate with the world famous applicators in the related industry in order to supply superior quality products to fulfill the needs of the global users.

## Vision

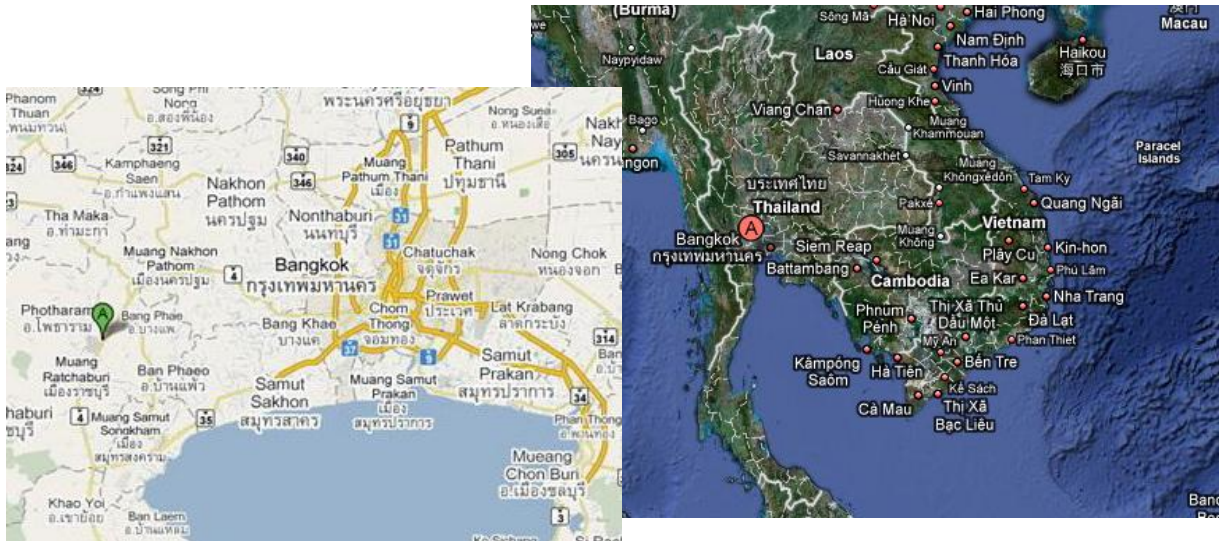
To be the accountable leader of silicon metal in vertical integration to provide customers with added value and sustainable development.



G.S. Energy Co., Ltd.

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# Company Location



แผนที่ตั้ง บริษัท จี.เอส. เอ็มแอร์จี จำกัด  
G.S. Energy Co.,Ltd.



**泰荃集團 Great Silicon Group (Cayman)**  
**G.S. Energy Co.Ltd.**

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**G.S. Energy Co., Ltd.**