



# Arcteq Relays Ltd.

Arcteq Company Profile  
01/2022

**ARCTEQ**<sup>®</sup>  
RELIABLE POWER

# Arcteq – Facts & Figures

- Focused manufacturer of protection relays and arc flash Protection with the development history of 25+ years
- Headquarters and manufacturing in Vaasa, Finland
- State-of-the-art new facility since 2020
- Global presence in about 50 countries, with references throughout the globe i.e. Americas, Europe, Africa, Middle East and Asia
- The fastest growing company in global PAC market
- Arcteq is part of Ensto Group
- Ensto is a Finnish technology company and family business with a total of 900 employees in about 20 countries. We are bound by our common purpose of *“Better life with electricity. Sustainably”*.



**ENSTO**

**ARCTEQ**<sup>®</sup>  
RELIABLE POWER

# Why Arcteq ?

- The only global, independent and focused protection relay manufacturer
- Value adding & differentiating technology
- Best-in-class customer service
- Partnerships with customers
- Flexibility

”The most accurate protection relays in the world”

”The pioneer in arc flash protection”



# State of art facilities

- Opened in June 2020
- New ERP system in October 2020
- Fully automated testing stations
- Test laboratories
- Training center



# Global Presence

- Arcteq
- Partner



“We offer our partners and customers the best-in-class technical support”

“We build our business on partnership with customers who value our unique offering”

# Full product portfolio of protection relays and IEDs



## **AQ 300 series:** Transmission protection & control

- Line protection (differential & distance)
- Transformer protection
- Busbar protection (centralized & distributed)
- Bay control
- Generator protection

## **AQ 200 series:** Transmission, sub-transmission, generation and distribution protection & control

- Overcurrent protection
- Feeder protection
- Motor protection
- Transformer protection
- Generator protection
- Generator and Motor Commander
- Bay control
- Alarm annunciation
- Line protection



The most accurate protection relay in the world

**”Patent US 10,809,287”**

0.2 % measurement accuracy  
Frequency independent 6 - 75 Hz

**ARCTEQ**<sup>®</sup>  
RELAYABLE POWER

# Arc flash protection by the pioneer



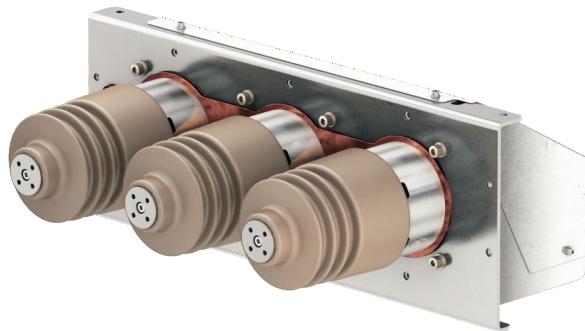
**AQ 100 series:** Arc protection relays for medium –and low voltage

**AQ 1000:** Arc quenching device for low voltage



The only reusable / resettable low voltage AQD

**”Patent US 9,318,294”**



**SIQuench (by Siemens):** Reusable / resettable arc quenching device for medium voltage. Arcteq is the global Siemens partner for SIQuench business.



# The sole partner of Siemens for MV and LV arc flash protection

## SIEMENS

Siemens AG, Mozartstr. 31 C, 91052 Erlangen, Germany

Juha Arvola  
Managing Director  
Arcteq Relays Ltd

Name	Oliver Peters
Department	SI DS S PLM-AIS
Mail	oliver.peters@siemens.com
Date	02.11.2020

### Partnership announcement for SIQuench - arc quenching device for MV

Dear Mr. Arvola,

With this letter, Siemens AG is proud to announce Arcteq Relays Ltd as a partner for its' MV arc quenching solution SIQuench.

Also, being a technology provider with your AQ 100 series arc flash protection relays for our SIQuench arc quenching application for medium-voltage, we believe that this cooperation will enable both parties to further expand their medium-voltage arc protection offerings to new customers through the worldwide certified partners of yours, both as a retrofit solution for existing installations or as a completely integrated solution for new systems.

Through this, customers will benefit from:

1. Increased operator safety, especially for non-IAC SWG
2. Increased productivity by minimizing the effects of an arcing fault where service outages are considerably reduced
3. Reduced CAPEX & OPEX by drastically reducing repair costs after an arcing fault and by minimizing the SWG room design measures

We have great trust in our future cooperation and are looking forward to a long and fruitful partnership.

Yours truly



Oliver Peters



**ARCTEQ**  
certified for **Siemens**

**ARCTEQ**<sup>®</sup>  
RELIABLE POWER

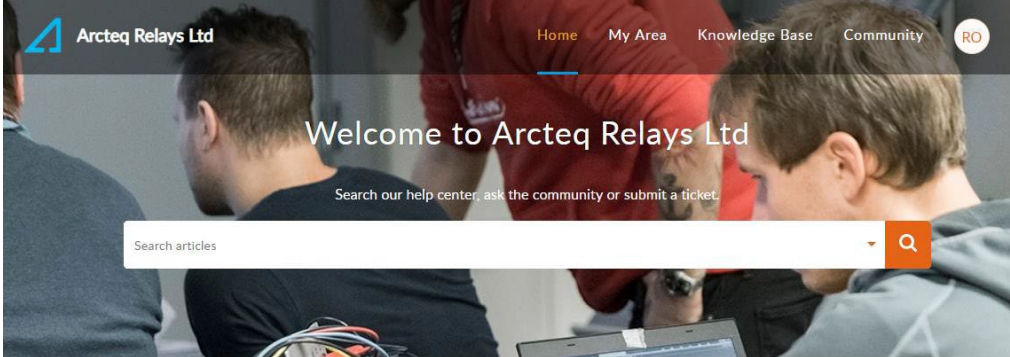


# Services

- Arcteq offers services through its own skilled personnel and worldwide network of partners
  - Simulations of electrical networks
  - Consultation
    - Short-circuit calculations, setting calculations, fault analysis
  - Protection relay and Arc system testing
  - Training – *Protection and Control AQademy*
  - Warranty services, spare parts, local stocking

Technical support:

<https://support.arcteq.fi/portal/home>



The screenshot shows the Arcteq Relays Ltd support portal homepage. The header includes the company logo and navigation links for Home, My Area, Knowledge Base, and Community, along with a language selector set to RO. The main content area features a search bar and three primary service tiles: Help Center (with a document icon), Community (with a speech bubble icon), and Tickets (with a ticket icon). Below these tiles is a 'Recent Topics' section listing 'Netcon 100 AQ-F255' and 'AQ250 serie with detachable front panel'.

Arcteq Relays Ltd

Home My Area Knowledge Base Community RO

Welcome to Arcteq Relays Ltd

Search our help center, ask the community or submit a ticket.

Search articles

Help Center

Community

Tickets

Browse through our collection of articles, user guides and FAQs.

Ask questions, share ideas or start a discussion with other customers.

View your previous tickets; know their statuses and solutions.

Recent Topics

Netcon 100 AQ-F255

AQ250 serie with detachable front panel

# Mission

We enable the safe and reliable supply of energy by enhancing the power system protection.

ARCTEQ – RELAYABLE POWER

#### MISSION

We enable the safe and reliable supply of energy by enhancing the power system protection.

#### OUR MARKET NICHES

- Distribution System Operator (DSO) primary substations
- Arc flash protection
- Railway protection in 16.7 Hz
- Marine & offshore
- Critical power
- Heavy industry
- Power generation

# ARCTEQ<sup>®</sup>

RELIABLE POWER

We are a team of experts in protection relays and arc flash protection systems.

#### VISION

We are the global leader in arc flash protection systems, and the preferred partner for protection relay technology in selected niches.



#### WE STAND OUT

by value adding technologies, and through committed and flexible service. As an independent specialist we are a beneficial partner to our client.

#### MARKET ENABLERS

Market consolidation, personnel safety, changes in powers grids, and power grid sustainability.

# Some of our customers

Arcteq has more than 35 000 protection devices installed in 50 countries around the globe





# Arcteq Asian landmarks: Hsueshan tunnel upgrade (Taiwan)



*Hsueshan tunnel – Taipei, also known as "snow mountain tunnel"*

World 6th largest tunnel and 2nd in Asia with length of 13km was retrofitted by Arcteq in 2012.

Arcteq scope of supply:

- 2 x AQ B398 at 161kV (bus diff. 87B)
- 2 x AQ T393 at 161kV (3-winding trafo)
- 65 x AQ F215 at 10kV
- Arc protection
- IEC 61850

# Arcteq Asian landmarks: TNB Malaysia



*TNB arc protection approval test in 2013.*

The largest utility in South-East Asia -  
TNB Malaysia approved Arcteq in 2013.

More than 2500 relays installed.

Approval of AQ-200 series in final stage.

# Arcteq Asian landmarks: KLCC tower (Malaysia)



*KLCC twin tower - Kuala Lumpur, also known as Petronas tower*

World's tallest twin tower with height of 378.6m

Arc-teq scope of supply:  
Arc protection system based on light / current /  
pressure.

# Arcteq Asian landmarks: PLN Indonesia



*PLN Cakalang substation*



*PLN Batam substation*

Since 2017, Arcteq has installed hundreds of the most accurate protection IEDs in PLN Indonesia.

AQ-F213 feeder protection IEDs have been installed nationwide.

In 2019, the AQ-T257 transformer differential protection was put in use.



# Arcteq Asian landmarks: POSCO Steel (Korea)



*Pohang 3 Cokes switchgear*

First installations in 2014.

Hundreds of motor, feeder, generator and transformer protection relays installed.

# Arcteq Asian landmarks: PEA Thailand



*PEA EKA substation - arc protection*

Arcteq has introduced the most reliable arc flash protection system to PEA Thailand since 2015.

Arcteq supplied more than 500 arc protection relays and 600 arc flash optic fiber sensors to PEA's nationwide electrical substations by 2020.

# Arcteq Asian landmarks: EVN Vietnam



*Hoa Binh 110kV/22kV wind farm*

Arcteq won the protection and bay control device contract to the off-shore 50,000kW wind power collector station in 2020.

Arcteq supplied:

- Line differential and distance protection
- Transformer protection
- Feeder protection
- Bay control & alarm annunciation devices
- Arc protection
- IEC 61850

# Arcteq European landmarks: CERN Switzerland



European nuclear research Centre and Arcteq signed 5-year frame agreement in 2016 for supply of more than 250 protection and control IEDs

Contract was renewed for next 5 years in 2021.





# Arcteq European landmarks: AIL Switzerland



Several primary 110/20 kV substations and secondary substations supplied since 2015

Protection and control philosophy based on protection and control units integrating all needed functionality.

# Arcteq African landmarks: EETC Egypt



Approval for 500/220/66/11 kV protection and control IEDs obtained 2018

Several substations commissioned and in use since 2019 in all voltage levels.

# Arcteq South-American landmarks: Emcartago (Colombia)



AQ-300 and AQ-250 series products have been supplied to Electrocaqueta electricity distribution system for protection and control of 115kV system with communication to SCADA using IEC 61850 and IEC 104 protocols.

# Arcdaq South-American landmarks: Luz del Sur (Peru)



Luz del Sur is a Peruvian utility company involved in electric power distribution to more than 800 thousand customers in 30 districts in the southeast of Lima. It is one of the largest electricity distributors in Peru, holding over 30% of the electricity distribution market.

Hundreds of AQ-F213 protection relays are installed in 13.8 kV feeders since 2017.



# Some references in GCC

- SEC PP13 & PP14 Substations – Saudi Electricity Company
- Al Shuqaiq Power Plant – Shuqaiq Water & Electricity Co.
- Feeder Protection Relays – Ministry of Defence (Saudi Arabia)
- Generator and Feeder Protections – Ma'aden (Saudi Arabian Mining Co.)
- Feeder Protections - Ras Al Khair Port – Saudi Ports Authority
- Motor, Generator, Feeder, Arc-flash Protections – EGA, UAE
- Arc-flash Protections – GCG Kuwait (private customers)



Arcteq supplied the Ma'aden Bauxite & Alumina Company with AQ-G357 and AQ-F215 type of generator and feeder protection

# Certificates

**BUREAU VERITAS**  
Certification

Certificate Awards  
**Arcteq Re**  
Wolffintie 36 F 11, FI-00

Bureau Veritas Certification certify that above organisation has been audited and requirements of the management system are fulfilled.

STANDA

**ISO 9001**  
SCOPE OF CERTIFICATION

Design, marketing and sale

Certification valid until date: 16 January 2012  
Subject to the successful completion of annual surveillance audits. Next audit: 17 January 2012  
Original Certificate No: 16 January 2011  
Certificate Number: F011026396-1

*Jacob Munk Plum*  
Jacob Munk Plum, Compliance Manager, EMEA

Lloyd's Register EMEA  
Strandvejen 104A, DK-2900 Hellerup

**IEC 61850 Certificate**  
Level A<sup>1</sup>

No. ZE 14 02 87551 001

Issued to:  
**Arcteq Oy**  
Comtec  
Sepinkyläntie 212, Mustasaari FI-65610 - Finland

For the server product  
**AQ-F215**  
Feeder controller  
1.03

Certification Mark:  
 This certification is for the product defined in the certificate.

**is not shown to be non-conforming in Parts 6, 7-1, 7-2, 7-3, 7-4 and 7-5 of IEC 61850-10 networks and systems in substations**

According to IEC 61850-10, the UCA International Ltd. (UCA) is the product's protocol, model and technical interface in AQ-F215. "MICS" for the IEC 61850-10 tests. Information for testing: "PROFIT" for the IEC 61850-10 tests. The product has been tested with a positive result (number of tests passed / number of tests performed):

12a	Direct Control (8/12)
13	Time Synchronization (4/5)

Date: ESPOO 21.01.2011 Page: 1 (8)  
Appendices: 1

Number: **164608B** Date of handing in: 11.01.2011  
No. 1 / 1 Tested by:

*Jari Liukkonen*  
Jari Liukkonen, Test Engineer

awed by:  
*Timo Leismala*  
Timo Leismala, Test Manager

**CERTIFICATE OF COMPLIANCE**

Certificate Number: 20160112-E476863  
Report Reference: E476863-20151030  
Issue Date: 2016-JANUARY-12

issued to: Arcteq Ltd  
Wolffintie 36 F 11 65200 Vaasa FINLAND

This is to certify that representative samples of COMPONENT - PROTECTIVE RELAYS Protection Relay, surface mount AQ 101, AQ 101S, AQ 102, AQ 110, Protection Relay, open type AQ 101D, Protective Relay Sensors AQ 01, AQ 02, AQ 06, AQ 07, AQ 08.

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 508 STANDARD FOR INDUSTRIAL CONTROL EQUIPMENT CAN/CSA C22.2 No. 14-13 INDUSTRIAL CONTROL EQUIPMENT

Additional Information: See the UL Online Certifications Directory at [www.ul.com/database](http://www.ul.com/database) for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Certification Mark on the product.

*Bob Hall*  
Bob Hall, Director, North American Certification Program  
UL LLC

Any information and documentation involving UL, their services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at [ULCustomerService@ul.com](mailto:ULCustomerService@ul.com)

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**Type Approval Certificate**

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the L.R. Type Approval System.

This certificate is issued to:

**PRODUCER:** Arcteq Oy  
**PLACE OF PRODUCTION:** Comtec, Sepinkyläntie 212, Mustasaari FI-65610 - Finland  
**DESCRIPTION:** Arc Protection System  
**TYPE:** AQ 100 series, comprising the units: AQ110F Combined current and arc point sensor unit, AQ110F Combined current and arc fiber sensor unit, AQ101 Arc point sensor unit, AQ102 Arc fiber sensor unit, AQ01 and AQ02 arc protection point sensors, AQ06, AQ07 and AQ08 arc protection fiber sensors.  
**APPLICATION:** Marine, Offshore and Industrial applications for installation in Electrical Switchboards located in ENVI and ENV2 as defined in L.R.TA Test Specification No1:2013 where the test specification is satisfactory for the intended operation.  
**ADDITIONAL TESTS:** None  
**STANDARD:** IEC 60225

"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been carried from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid certificate."

The Design Approval Document No TA 13/20001 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

Certificate No. 15/70001  
Issue Date 12.01.2016  
Expiry Date 11.01.2021  
Sheet 1 of 1

*Jacob Munk Plum*  
Jacob Munk Plum  
Copenhagen Technical Support Office

Lloyd's Register EMEA  
Strandvejen 104A, DK-2900 Hellerup



# Arcteq in social media

Youtube: videos and webinars

<https://www.youtube.com/channel/UCDkyBe7hVGu0060G7Zrs7-A/featured>

AQ 200 The most accurate protection relay series in the world

<https://youtu.be/8CNo0VbXBQ8>

Tame the beasts with Commander

<https://youtu.be/1wAhC5D25Rc>

AQ 1000 arc quenching device

<https://www.youtube.com/watch?v=1dWPvplYKHw>

Linkedin:

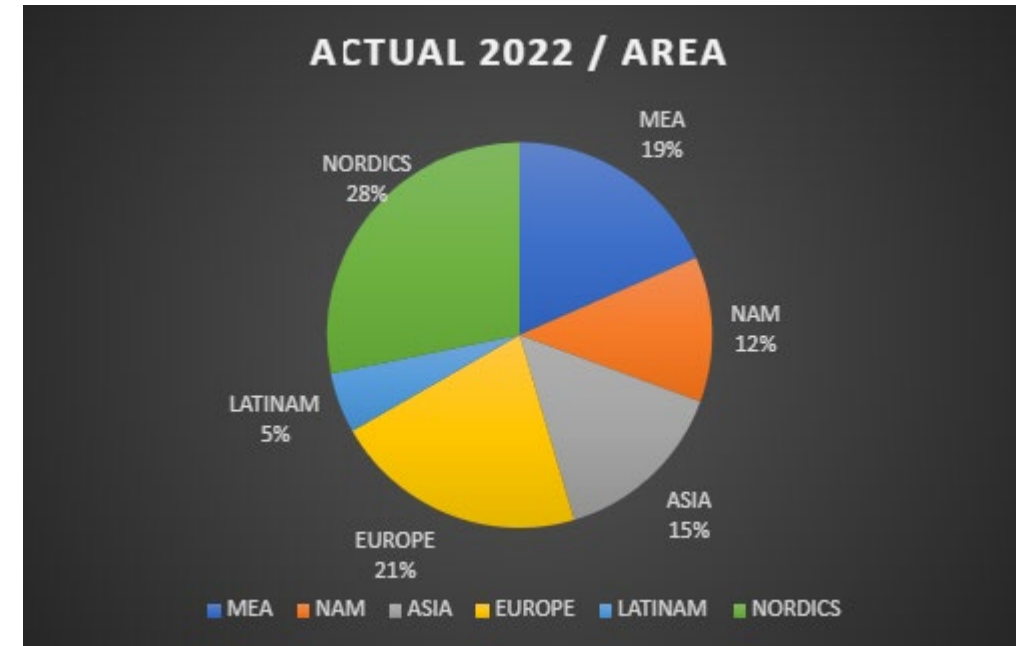
<https://www.linkedin.com/company/1431752/>





# Q&A

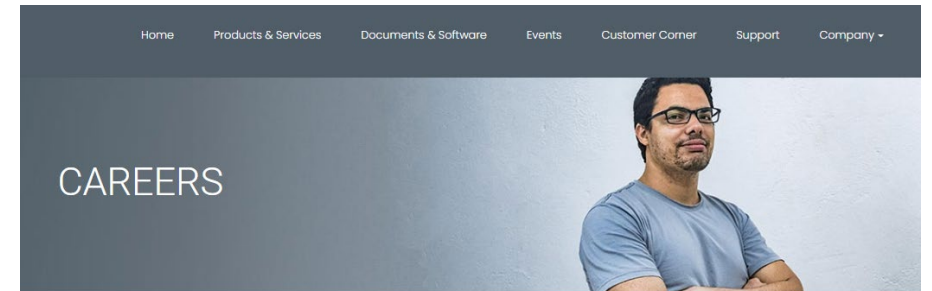
- the demand for **marketing specialists and the specificity of marketing** work in your companies?
  - Creation of dedicated marketing material
  - Digital appearance Google, social media!
- it would be great if you can share **details of your ongoing and upcoming research projects.**
  - Network application protection on any level.
- how important is it to operate on an international level and to expand while making profit?
  - Finland is about 3% of product deliveries
- what kind of skills are needed for a software developer in your companies? Is it about the basics of OOP or having knowledge of specific programming languages or technologies?
  - We need both hardware and software development in our R&D. As an example on the software development C++ and skills in embedded systems.





# Q&A

- to Arcteq Relays: Do you aim to integrate Artificial Intelligence and Machine Learning models in Flash arc protection simulations?
  - Currently no active plans for this, we haven't looked into this area so far.
- about job opportunities in general: what is the recruitment process, what are the demanded skills, how to land a part time or trainee job in technical sector, looking forward to getting a better grasp on how you function, what skills are you missing at the moment and how would that skill contribute to the company overall.
  - [www.arcteq.fi/careers](http://www.arcteq.fi/careers)
  - If there are no suitable vacancies you can always make an open application.



Career at Arcteq

Vacancies

Open application

## Arcteq as an employer

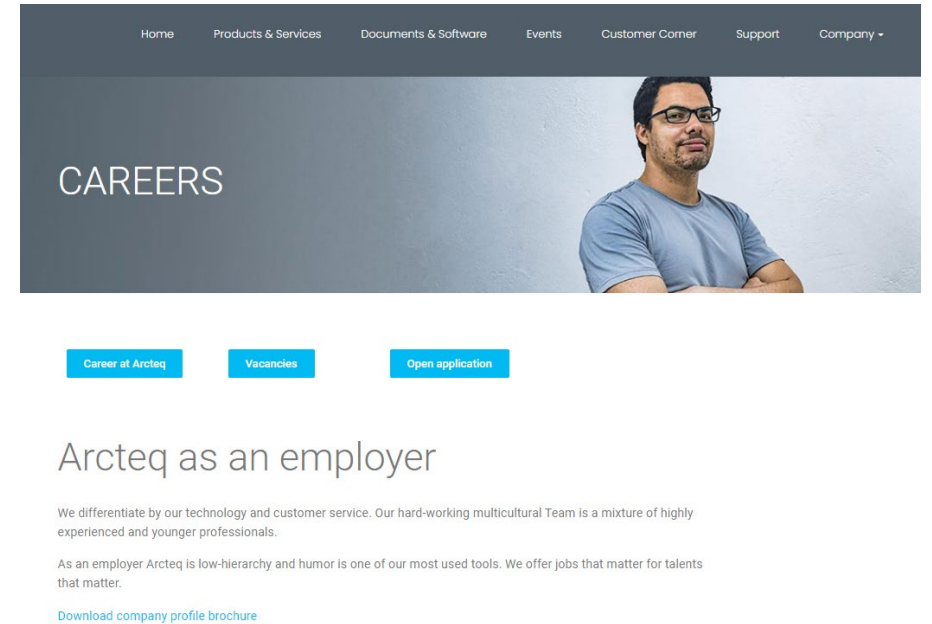
We differentiate by our technology and customer service. Our hard-working multicultural Team is a mixture of highly experienced and younger professionals.

As an employer Arcteq is low-hierarchy and humor is one of our most used tools. We offer jobs that matter for talents that matter.

[Download company profile brochure](#)

# Q&A

- about language: how visible is the employment possibility for non-Finnish students, is it possible to get a job as an immigrant without knowledge of Finnish/Swedish, how do I stand out from the crowd if I have the qualifications for a job but do not speak Finnish or Swedish fluently?
  - In Arcteq Relays English is the first language. We work globally, Finnish is a small language from that perspective 😊



Home Products & Services Documents & Software Events Customer Corner Support Company -

## CAREERS

[Career at Arcteq](#) [Vacancies](#) [Open application](#)

### Arcteq as an employer

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POWER