

# SOLAR PUMPING SOLUTIONS

Grundfos offers a range of submersible, surface mount and floating renewable pumping solutions for a range of applications in rural or remote areas including stock watering, irrigation and agricultural water supply and transfer.



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innovate

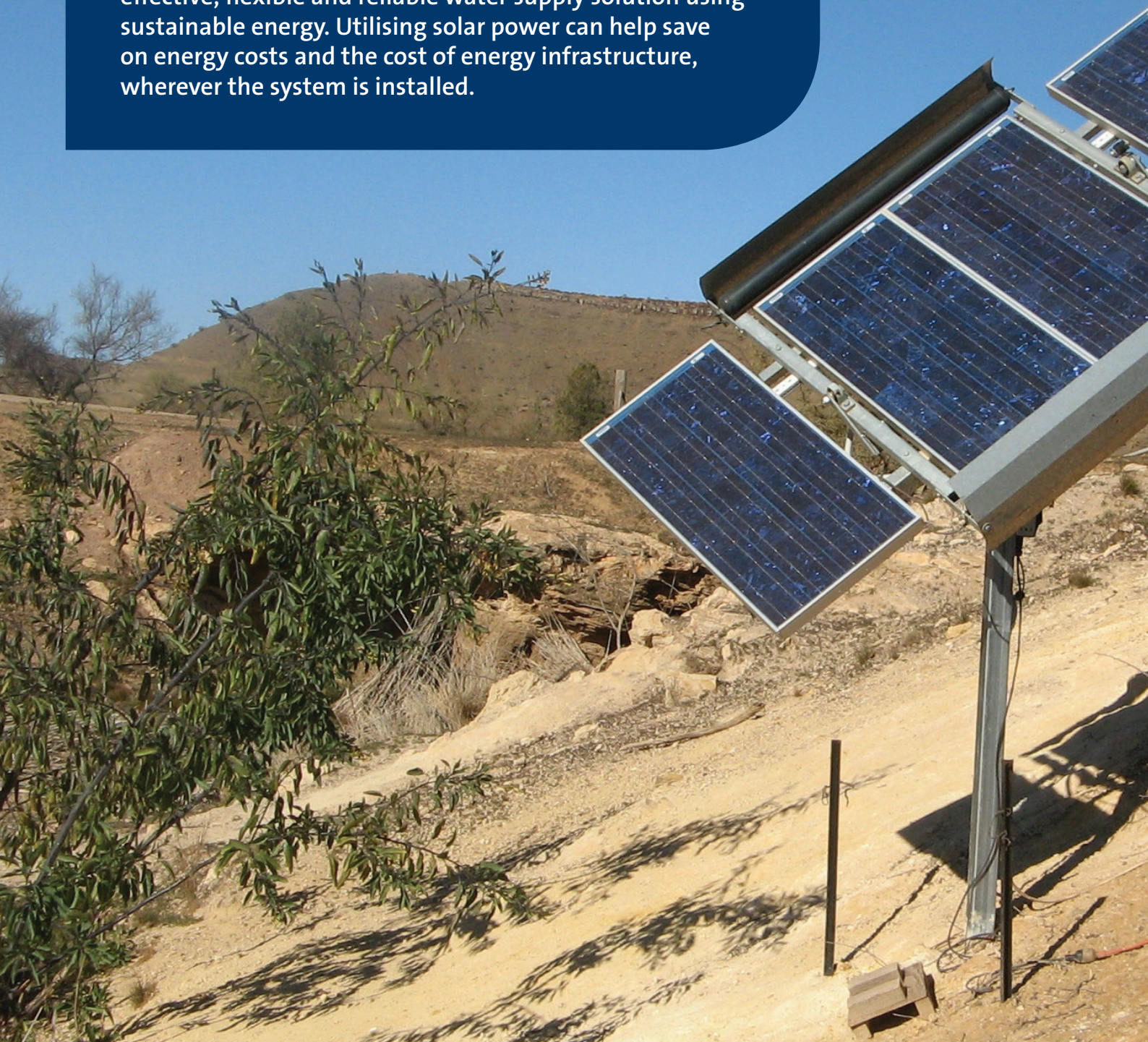
**GRUNDFOS** 



# SOLAR PUMPING SOLUTIONS MADE EASY

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Solar pumping systems from Grundfos present a cost effective, flexible and reliable water supply solution using sustainable energy. Utilising solar power can help save on energy costs and the cost of energy infrastructure, wherever the system is installed.





*Grundfos solar pumping solutions offer a wide range of benefits over traditional grid-based pumping systems, featuring easy installation, low maintenance and low operating costs.*

## Easy installation

Grundfos offers a range of solar pumping solutions that can be tailored to suit almost any application and local conditions. Grundfos offers a range of plug-and-go solutions to ensure simple installation and easy use even under the most challenging conditions.

## Virtually no maintenance

Grundfos solar solutions have built-in protective features to help protect the pump, lowering pump down-time and maintenance costs.

## Long term, cost-efficient pumping

Grundfos offers full-line, customisable renewable solutions that are sized, configured and packaged to suit individual requirements. Because of this, the total lifecycle cost of a Grundfos solar pumping solution is considerably lower than other water supply systems.

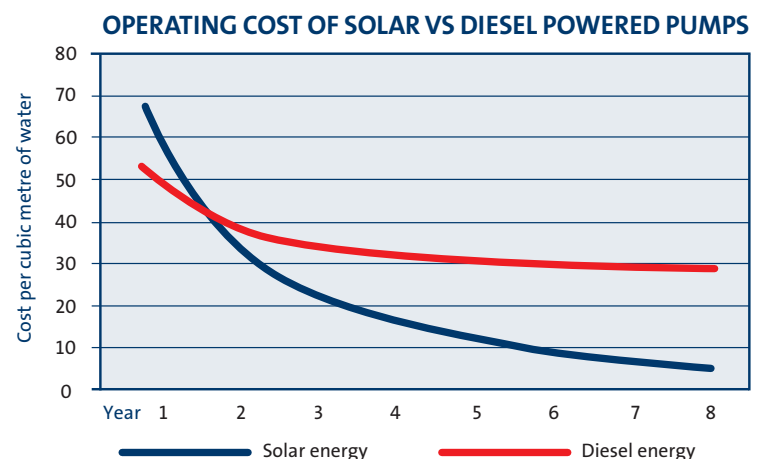
Based on solar power, Grundfos Renewable Solutions combine state-of-the-art pump technology with sustainable, energy efficient solutions to provide a reliable water supply to remote locations with no access to electricity.

Although the initial cost of a Grundfos solar pumping system may be more expensive than a typical generator system, the savings in the long term add up. These savings include:

- Reduced energy bills
- Reduced operating costs (e.g. cost of transporting fuel)
- Reduced installation costs
- Reduced servicing costs

When compared to a conventional diesel powered pump, the typical payback time from the initial purchase of a Grundfos solar pumping system is approximately 1½ years.

simple to  
install and  
easy to use



# OUR RANGE

Grundfos offers a range of submersible, surface mount and floating renewable pumping solutions for a range of applications in rural or remote areas including stock watering, irrigation and agricultural water supply and transfer.

## PUMPS

### CRFlex



#### Solar powered, surface mount pump

##### FEATURES

- Built frequency converter with MPPT software and motor protection
- High efficiency permanent magnet motor
- Compatible with AC and DC power sources, with 3 x analog input and 2 x digital input
- Uniquely designed cartridge shaft seal for ease of service.
- Design based on the proven reliability of the Grundfos CRE range
- Easy installation and low maintenance

##### TECHNICAL DATA

- Motor size: 0.88 kW or 1.73 kW (P1)
- Voltage: 30-300 VDC
- Power Supply: 1 x 90-240 VAC -10%/+6% 50/60 Hz
- Flow rate (Q): 18m<sup>3</sup>/hr
- Head (H): 180m

Use on:  Solar  Mains  Generator

### SQFlex



#### Solar powered submersible pump

##### FEATURES

- High efficiency permanent magnet motor with built-in MPPT software and motor protection
- Available with helical or multistage centrifugal hydraulics.
- Able to delivering water even on a cloudy day with only minimal sunlight.
- Compatible with AC and DC power sources
- Tank filling system by connecting to CU200
- Remote monitoring compatible through GSM by connecting to CIU module.

##### TECHNICAL DATA

- Motor size: 1.4 kW (P1)
- Voltage:
- Power supply:
- Flow rate (Q): 18 m<sup>3</sup>/h
- Head (H): 250 m

Use on:  Solar  Mains  Generator  Battery backup

## MTR Flex



**Solar powered submersible pump for floating applications  
e.g (drawing water from a dam)**

### FEATURES

- Consist of robust MGFlex motor and vertical multi-stage submersible pump (MTRF)
- Protective features include overload, over and under voltage
- Compatible with AC and DC power sources

### TECHNICAL DATA

- Motor size: 0.88 kW or 1.73 kW (P1)
- Voltage: 30-300 VDC
- Power supply: 1 x 90-240 VAC -10% / +6% 50 / 60 Hz
- Flow rate (Q): 18m<sup>3</sup>/hr
- Head (H): 180 m

Use on:  Solar  Mains  Generator

# SOLAR INVERTER

## Renewable Solar Invertor (RSI)



**Off-grid solar inverter converting the DC power output from the solar panel to AC power supply for pump operation.**

### FEATURES

- Suitable for new and existing systems\*
- Can be connected to the grid or a generator as back-up power during solar panel disruptions
- Maximum power point tracking (MPPT) to ensure solar panels are always working a maximum efficiency no matter what the conditions
- Compatible with AC and DC power sources
- Easy to setup with inbuilt Setup Wizard with Grundfos product library
- A range of protective features to ensure a long life including; overvoltage and under voltage protection, overload protection, overcurrent protection, over temperature protection and no-load protection.
- Operating history memory
- Detachable control panel for added flexibility

### TECHNICAL DATA

- Power size: 2.2 kW to 37 kW (P1)
- Output voltage to motor: 3 Phase 380-415 V or 3-phase 208-240 V AC
- Enclosure class: IP66
- Voltage: 50/60 Hz
- Operating temperature: -10 to 60°C
- Max. Relative Humidity: 100%
- Analog and digital input as long as the motor specs are compatible and is suitable for use with a variable frequency drive.

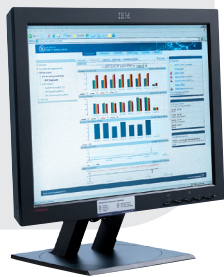
Use on:  Solar  Mains  Generator



# OUR RANGE

## MONITORING & CONTROL

### Grundfos Remote Management (GRM)



#### Monitor and manage solar pump installations

##### FEATURES

- Provides a full overview of the operation, performance and trends
- Live monitoring, analysis and adjustments, monitoring of energy consumption, and optimisation of system performance
- Manage service and maintenance; plan service work on the basis of actual operating data and get notification when service is due

##### COMMUNICATION

- Grundfos offers a range of communication options via GPRS / SMS from Grundfos pumps and controllers
- Built-in multi-purpose I/O board allows the connection of sensors and switches
- A fixed low fee covers data traffic, hosting costs and system support, including back-up of all data

### CU200



#### Control and communication unit especially developed for the SQFlex

##### FEATURES

- Enables the connection of a level switch
- System monitoring and alarm indication
- Start, stop and reset the pump with the on/off button

##### TECHNICAL DATA

- Voltage: 30-300 VDC, 8.4 A, 90-240 VAC, 8.4 A
- Power consumption: 5 W
- Max. communication length 300 m (between CU200 and SQFlex)
- Enclosure class: IP55

## COMPLETE SYSTEMS

### Complete Systems



#### Solar systems available as a complete package from Grundfos

##### SYSTEMS AVAILABLE WITH

- Array frames to suit all wind conditions
- High quality solar PV panels with 20 year linear warranty
- Cabling, ducting and earthing systems
- Combiner boxes
- AC/DC switchover boxes for Generator backup
- Sine wave filters when using SP pumps on RSI
- A range of sensors available including; temperature PT100, float switches, flow switches, pressure switches

##### FEATURES

- Available in a range of sizes to suit almost any application
- Post mount or ground mount array frame options for added flexibility
- Solar panels compatible with Grundfos CRFlex, MTRFlex, SQFlex & RSI

# GRUNDFOS PRODUCT CENTER

Correct sizing, selection and installation right from the start results in a surprisingly quick payback time.

To ensure you take full advantage of the low lifecycle costs of a Grundfos solar pumping system can offer, correct sizing, selection and installation is critical.

The Grundfos Product Center is an online search and sizing tool to help you choose the right pump for installation or replacement, or find information about pumps you already have.

A basic solar pump sizing requires just three input values: head, daily water demand and location. From this, we can quickly size and recommend the most energy efficient system for your needs.

For more customised and advanced needs, options are available for retrofit recommendation, life cycle cost calculation, user-defined solar panel, and much more – it can even taking into account the fluctuations of available solar energy based on your installation location.

Visit the Grundfos Product Center at [Grundfos.com.au](http://Grundfos.com.au)





# SPECIALISING IN SOLAR APPLICATIONS

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**Grundfos has been actively specialising in solar applications to promote sustainable solutions for more than 30 years. Striving to preserve natural resources, we develop pumps and pump systems that utilise renewable energy.**

The Grundfos renewable driven pump systems are excellent examples of our belief in practice. Consultations with pump users and specifiers have led to many innovations that emphasise user-friendly designs, simple installation, reliability and efficiency.

With an extensive network of Dealers across the country, providing local support in the selection, installation and service of renewable pumping solutions, Grundfos can offer full-line, customisable solutions to suit individual requirements.





## Specification table

Description	RSI	SQFlex	CRFlex	MTRFlex
Pump Type	Standard 3 phase SP (submersible) or CR (surface mount)	Submersible	Surface mount	Floating
DC Power Source (eg. Solar Module)	230-800 VDC	30-300 VDC	30-300 VDC	30-300 VDC
Generator (with IO101 Recommended 1.5 kVa)	230-800 VDC	1ph 90-240 VAC 50/60 Hz	1ph 220-240 VAC 50/60 Hz	1ph 220-240 VAC 50/60 Hz
AC Power Source (eg. Grid)	230-800 VDC	1ph 90-240 VAC 50/60 Hz	1ph 220-240 VAC 50/60 Hz	1ph 220-240 VAC 50/60 Hz
Technical Features				
Max. Power Point Tracking	✓	✓	✓	✓
Overvoltage Protection	✓	✓	✓	✓
Undervoltage Protection	✓	✓	✓	✓
Over Temperature Protection	✓	✓	✓	✓
Dry Run Protection	Via flow or float switch	Built-in	Requires external sensor	Requires external sensor
Remote Start/Stop	✓	Via CU200	-	-
Temperature	up to 60° C	0° to 40° C	0° to 120° C	0° to 120° C
Accessories				
Control Unit	RSI Inverter	Connected via CU 200	Connected via motor terminal box	Connected via motor terminal box
Level Switch	✓	✓	✓	✓
Pressure Switch	✓	✓	✓	✓

## Performance table

	RSI	SQFlex	CRFlex	MTRFlex
Max. Pressure	>5000 kPa	2500 kPa	700 kPa	700 kPa
Max. cubic metres per hour	240 m <sup>3</sup> /hour	19 m <sup>3</sup> /hour	20 m <sup>3</sup> /hour	20 m <sup>3</sup> /hour

## Control units

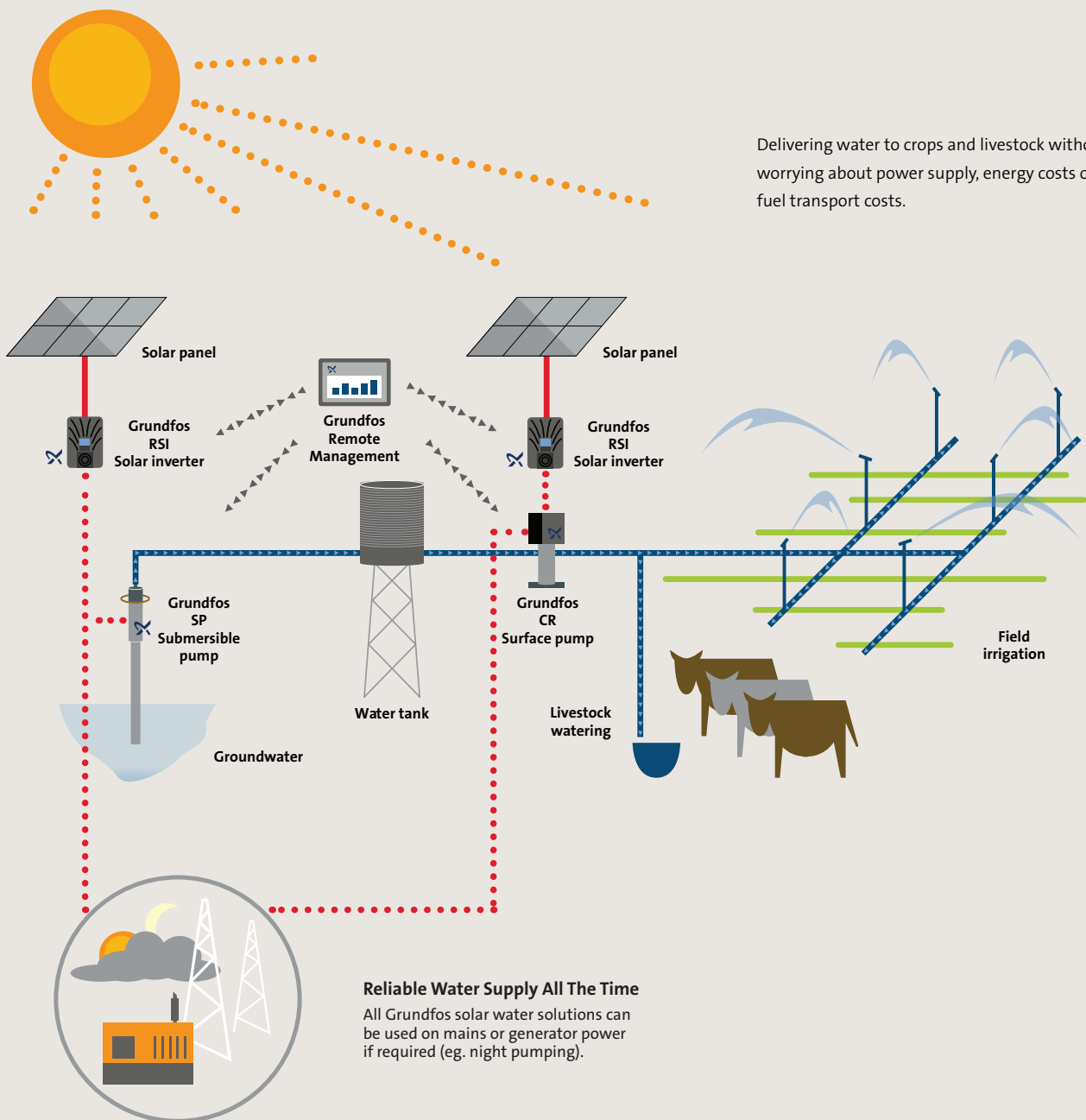
RSI	IO 50	IO 101	CU200
✓ DC to 220 V & 380 V, 3 phase	✓ Designed for the SQFlex system	✓ Designed for the SQFlex system	✓ Combined status & control unit for the SQFlex system
✓ Displays input power and operation power	✓ Enables manual starting and stopping of the pump	✓ Enables manual starting and stopping of the pump	✓ Displays the input power and operational status
✓ Enables connection of level switch or float switch	✓ Functions as a connection box for necessary cables	✓ Allows for automatic switching to generator*	✓ Enables connection of a level switch or pressure switch

\*If generator is stopped manually or runs out of fuel, the IO 101 will automatically change back to operation via solar energy.



# COMPLETE SOLAR WATER SUPPLY SOLUTIONS

GRUNDFOS COMBINES THE PUMPS, CONTROLS AND MONITORING, SOLAR PANELS AND COMPONENTS REQUIRED FOR A COMPLETE SOLAR-POWERED WATER SUPPLY





be think innovate

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**GRUNDFOS** 

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