

/ Perfect Welding / Solar Energy / Perfect Charging



# TOWARDS THE WORLD OF 24 HOURS OF SUN

24 hours of sun is the vision of a future powered by 100% renewable energy sources. In order to make 24 hours of sun a reality, we need technologies and solutions that help us to more efficiently produce, store, distribute and consume renewable energy. At Fronius, we work towards this goal every day.



# SHAPING THE FUTURE

The geographical and technological course of expansion introduced by Brigitte Strauß and Klaus Fronius continues to the present day. Fronius is represented with subsidiaries in 34 countries and with sales partners and representatives in over 60 countries, and is recognised as an innovation and technology leader. Since 2012, Fronius has been managed by the granddaughter of the company founder, Elisabeth Engelbrechtsmüller-Strauß. However, the company's objective has remained the same as ever:

**TO CREATE A SUSTAINABLE FUTURE THROUGH INNOVATION, QUALITY AND FIRST-CLASS SERVICE.**



*Images from top:  
Founders Friedl and  
Günter Fronius, Elisabeth  
Engelbrechtsmüller-Strauß,  
Brigitte Strauß & Klaus Fronius*

## THREE BUSINESS UNITS, ONE GOAL: TO SET THE STANDARD THROUGH TECHNOLOGICAL ADVANCEMENT.

What began in 1945 as a one-man operation now sets technological standards in the fields of welding technology, photovoltaics and battery charging. Today, the company has around 5,440 employees worldwide and 1,264 Patents for product development show the innovative spirit within the company. Sustainable development means for us to implement environmentally relevant and social aspects equally with economic factors. Our goal has remained constant throughout: to be the innovation leader.

### PERFECT WELDING

Our mission is Perfect Welding; a task we have approached with passion and skill for decades in order that our customers can join materials with the perfect weld seam. With our outstanding technologies and services and together with our customer's applications, not only do we solve their specific welding technology problems, but we also make a substantial contribution to increasing their productivity.

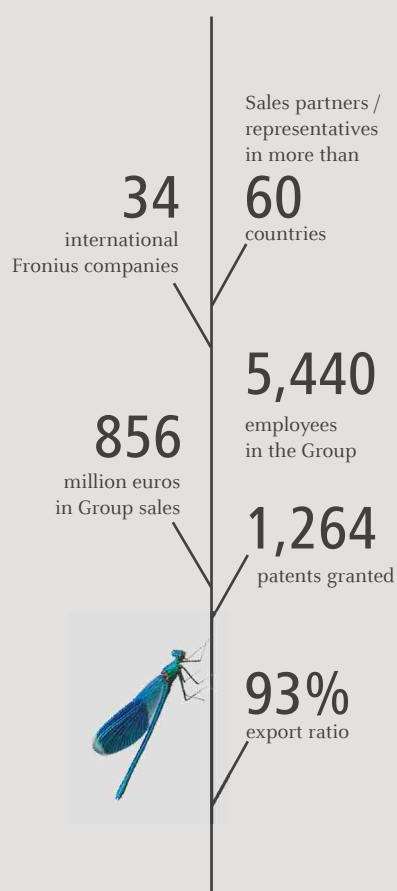
### SOLAR ENERGY

Our mission is to achieve 24 hours of sun. Day after day we are hard at work turning this vision of a future in which 100% of the world's energy needs are covered by renewable sources into a reality. We are therefore concentrating on solutions to intelligently, efficiently and economically generate, store, distribute and consume solar energy.

### PERFECT CHARGING

As know-how leaders in the world of battery charging, we deliver exceptional solutions to create the maximum benefit for our customers. For the intralogistics sector, we are committed to energy flow optimisation for electric forklift trucks and are constantly thriving for the next innovation. Our powerful charging systems for vehicle workshops guarantee safe and reliable processes.

# COMPANY FIGURES AS ON 31/12/2019



## THE PRODUCTS

Fronius' innovative products are impressively sustainable. They also increase productivity, boost energy yield and reduce operating costs.

This all helps our customers to make significant advances, ensuring their trust and satisfaction for generations to come.



**MR. V. V. KAMATH**  
Managing Director  
Fronius India Private Limited

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*Over the next 10 years, million of homeowners will take their energy management into their own hands. Electricity will be generated, managed and consumed at home.”*

## A FAMILY TRADITION OF QUALITY & INNOVATION

A passion for new technologies, intensive research, and revolutionary solutions has been shaping the Fronius brand since the beginning. From the very first battery charger in 1945, our family-owned company has been setting global standards in innovation, quality, and power conversion.

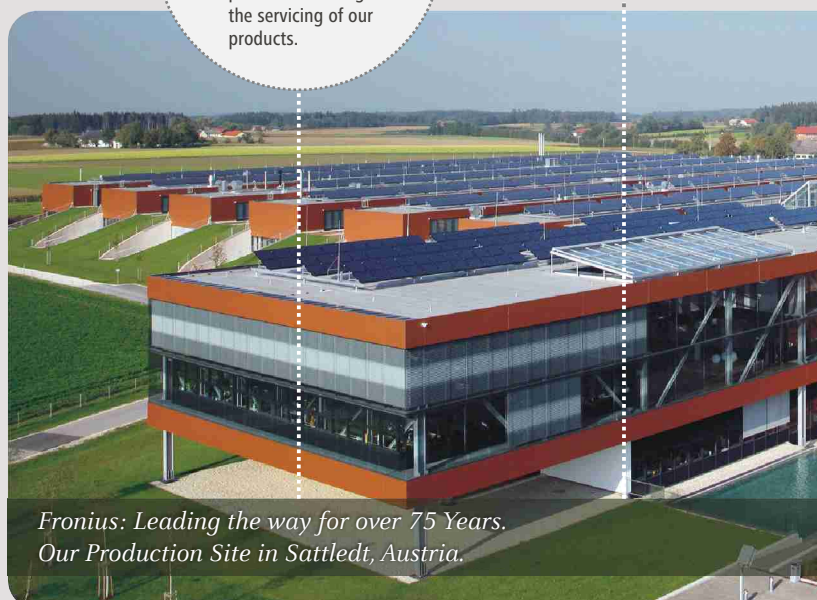
The Solar Energy Division has been working in the field of photovoltaics since 1992. As a solar pioneer and manufacturer of inverters from day one, we now offer a wide range of products relating to generating, storing, distributing and consuming energy from renewable sources.

### QUALITY

Decades of experience are also reflected in our high quality standards, from development and production through to the servicing of our products.

### SERVICE

Strong partnerships and a firstclass service strategy are our number-one priority. Our Fronius Service Partner program offers installers the fastest service in Asia Pacific.



*Fronius: Leading the way for over 75 Years.  
Our Production Site in Sattledt, Austria.*

# FRONIUS SNAPINVERTER

The SnapInverter generation features a uniform, intelligent design and maximum flexibility. As an installer, you are sure to enjoy the benefits of simple installation and commissioning along with quick and straightforward servicing. Thanks to the standardized product line ranging from 3.0 to 27.0 kW, the SnapInverters are the ideal choice for any system size, from family homes through to large-scale installations.

Available with a  
Fronius Smart Meter.



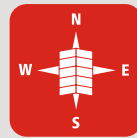
TECHNICAL DATA	FRONIUS PRIMO	FRONIUS SYMO	FRONIUS SYMO 10-20 kW	FRONIUS ECO
Phase Category	Single-phase 230 V	Three-phase 230 V / 400 V	Three-phase 230 V / 400 V	Three-phase 230 V / 400 V
Power Classes	3 / 3.5 / 3.6 / 4 / 4.6 / 5 / 6 / 8.2 kW	3 / 3.7 / 4.5 / 5 / 6 / 7 / 8.2 kW	10 / 12.5 / 15 / 17.5 / 20 kW	25 / 27 kW
MPP Tracker	2	2	2	1
IP Rating	IP 65	IP 65	IP 66	IP 66
Dimensions (Height x Width x Depth)	645 x 431 x 204 mm	645 x 431 x 204 mm	725 x 510 x 225 mm	725 x 510 x 225 mm
Weight	21.5 kg	19.9 kg	34.8 kg (10/12.5 kW) / 43.4 kg (15/17.5/20 kW)	35.7 kg
Dynamic Peak Manager	Yes	Yes	Yes	Yes

## CHARACTERISTICS OF FRONIUS SNAP INVERTERS



### SnapInverter Technology

- / Simple, standardised mounting system, user interface and set-up procedure.
- / Connection area separate from power stage set compartment.
- / Hinged design for easy installation and servicing.



### Superflex Design

- / Two MPP trackers in conjunction with a high system voltage and wide DC input voltage range; every DC input has its own MPP tracker.
- / Single inverter for different roof orientations, shading of one or two strings or the use of residual modules.



### Integrated Data Communication

- / Fully integrated data logging, WLAN, Ethernet, energy management, web server, and a range of interfaces.
- / Connect to third-party components via Modbus TCP SunSpec, Modbus RTU SunSpec, or Fronius Solar API (JSON).



### Smart Grid Ready

- / Smart functions are built into the devices including control functions for optimum feed-in of reactive power and effective power.
- / Stable grid operation is enabled when the PV system density is high and feed-in interruptions are prevented.



### Dynamic Peak Manager

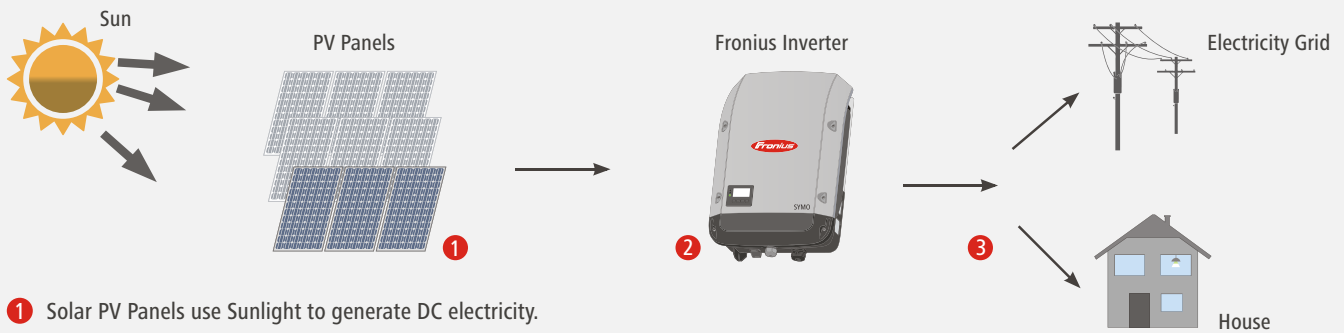
- / New MPP tracking algorithm.
- / Automatically checks the characteristic curve on a regular basis and finds the Global Maximum Power Point (GMPP), even in partial shade.



### Export Limitation / Zero feed-in

- / Limit the amount of energy fed into the grid wherever feed-in restrictions are applicable.
- / Only a Fronius Smart Meter is required.

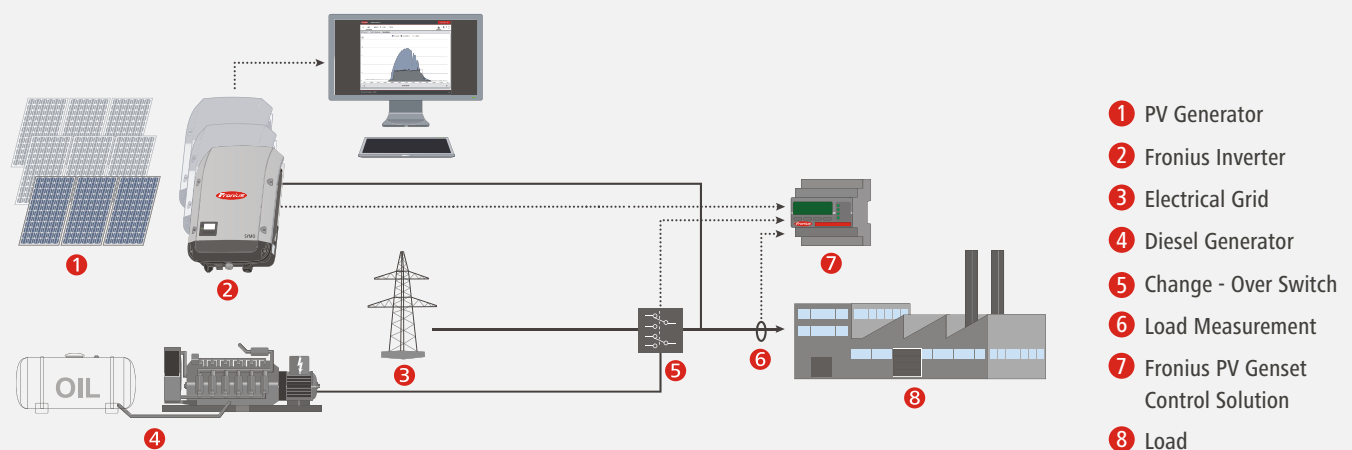
# ON-GRID/GRID-TIED SOLAR PLANT



- 1 Solar PV Panels use Sunlight to generate DC electricity.
- 2 Fronius inverter converts DC power to AC power for use in your homes.
- 3 The surplus Solar power (after self-utilization) is exported to the public grid and the user gets benefit for the exported units.

# FRONIUS PV-GENSET SOLUTION

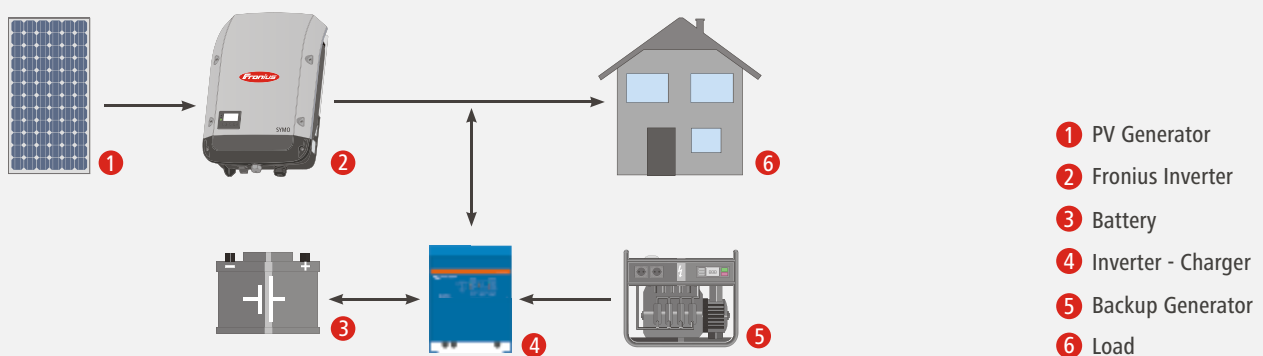
With the Fronius PV Genset Easy solution, photovoltaic systems can be integrated into existing diesel systems both quickly and easily. The solution is optimized for low-voltage applications with one diesel generator, although it also works for back-up applications. For solutions optimized for more than one diesel generator, please get in touch with your Fronius contact person.



- 1 PV Generator
- 2 Fronius Inverter
- 3 Electrical Grid
- 4 Diesel Generator
- 5 Change - Over Switch
- 6 Load Measurement
- 7 Fronius PV Genset Control Solution
- 8 Load

# FRONIUS MICROGRID SOLUTION

Microgrids in remote regions are often supplied by inverter chargers (off-grid inverters with batteries). PV systems with Fronius grid-tied inverters can be easily integrated into microgrids of this kind, as Fronius inverters have a special MicroGrid Setup for this purpose complete with various functions to ensure stable microgrid operation.



- 1 PV Generator
- 2 Fronius Inverter
- 3 Battery
- 4 Inverter - Charger
- 5 Backup Generator
- 6 Load

# FRONIUS SENSORS



## FRONIUS SENSOR CARD/BOX

/ For integrating a range of sensors with the Fronius Sensor Card / Box, sensors for measuring insolation, ambient temperature, module temperature, wind speed, etc. can be integrated into the Fronius system monitoring.



## FRONIUS MODULE TEMPERATURE SENSOR

/ For measuring the module temperature.  
Item number: 43,0001,1190



## FRONIUS WIND SPEED SENSOR

/ For measuring the wind speed.  
Item number: 42,0411,0027



## FRONIUS INSOLATION SENSOR

/ For measuring the radiated energy.  
Item number: 43,0001,1189



## FRONIUS AMBIENT TEMPERATURE SENSOR

/ For measuring the ambient temperature.  
Item number: 43,0001,1188

# FRONIUS SMART METER

TECHNICAL DATA	FRONIUS PRIMO
Options	63A-1 / 63A-3 / 50kA-3
Grid Connection	Single-phase or three-phase
Current Measurement	Direct connection or via CTs
Dimensions (height x width x depth)	89 x 35 x 66 mm / 89 x 71 x 66 mm
Communication	Modbus RTU



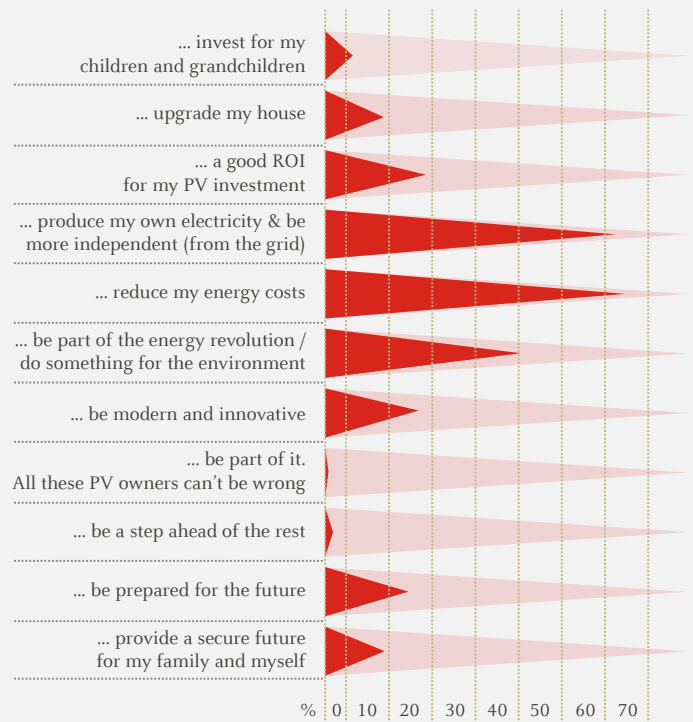
## WHY PEOPLE BUY

a Fronius Solar.web study

In 2018, Fronius conducted a survey of around 8,000 German Solar.web users. One of the things they were asked about was their motives for purchasing a photovoltaic system. The overwhelming majority of respondents cited the following reasons:

- / Save on energy costs.
- / Produce their own electricity and be more independent (from the grid).
- / To be part of the energy revolution / to do something for the environment.

Market insiders will not be surprised by these responses, nor will they be surprised by the fact that financial motives are a key influencing factor. This is good news for the industry, as it offers huge growth opportunities - specifically when the energy revolution helps households to cut energy costs to a previously unimagined degree.



Solar.web user survey on buying motives (2018; multiple answers were possible)





# FRONIUS SYSTEM PARTNER PROGRAM

The world of energy is changing: digitisation and new technologies for mobility are opening up new areas of business. To make use of these opportunities, we need to understand energy as a multi-sector concept and advise the customer accordingly. Our goal is to provide the best possible service to our customers. We can only achieve this with strong partners, which is why we are further enhancing our installer partnership program.

Together for 100% renewable energy.



## EXCLUSIVE SALES AND MARKETING TOOLS

When you are successful with Fronius, we are successful. That's why we support you with a range of different tools to help you secure sales.



## BETTER INFORMED

You will have a decisive information advantage as well as practical knowledge regarding Fronius system solutions: from maintaining existing systems through to solarising your customer's entire energy supply.



## UNIQUE SUPPORT

Technical support and exclusive access to selected spare parts for the guaranteed best service plan on the market.



## COMMUNICATING VALUE TO YOUR CUSTOMERS

Our end customers are in the best possible hands with Fronius System Partners. We highlight your added value on our website, through our social media channels and in our marketing materials.



## EXCHANGE KNOWLEDGE AND EXPERIENCES

Holding regular dialogue with our partners is something we value at Fronius. At our Fronius System Partner events, you can network with other partners and discuss your experiences directly with representatives from Fronius.



## GENERATING DEMAND

The Fronius Solar.web online portal helps you to generate demand for system add-ons among your existing customer base and secure long-term follow-up orders for your business. As a Fronius System Partner, you can enjoy the full potential of Solar.web Premium for free.



MR. KLAUS KRAMLER  
Head of Marketing,  
Fronius Solar Energy



*Installers should develop into all-round energy consultants and guide their customers through the energy revolution.*

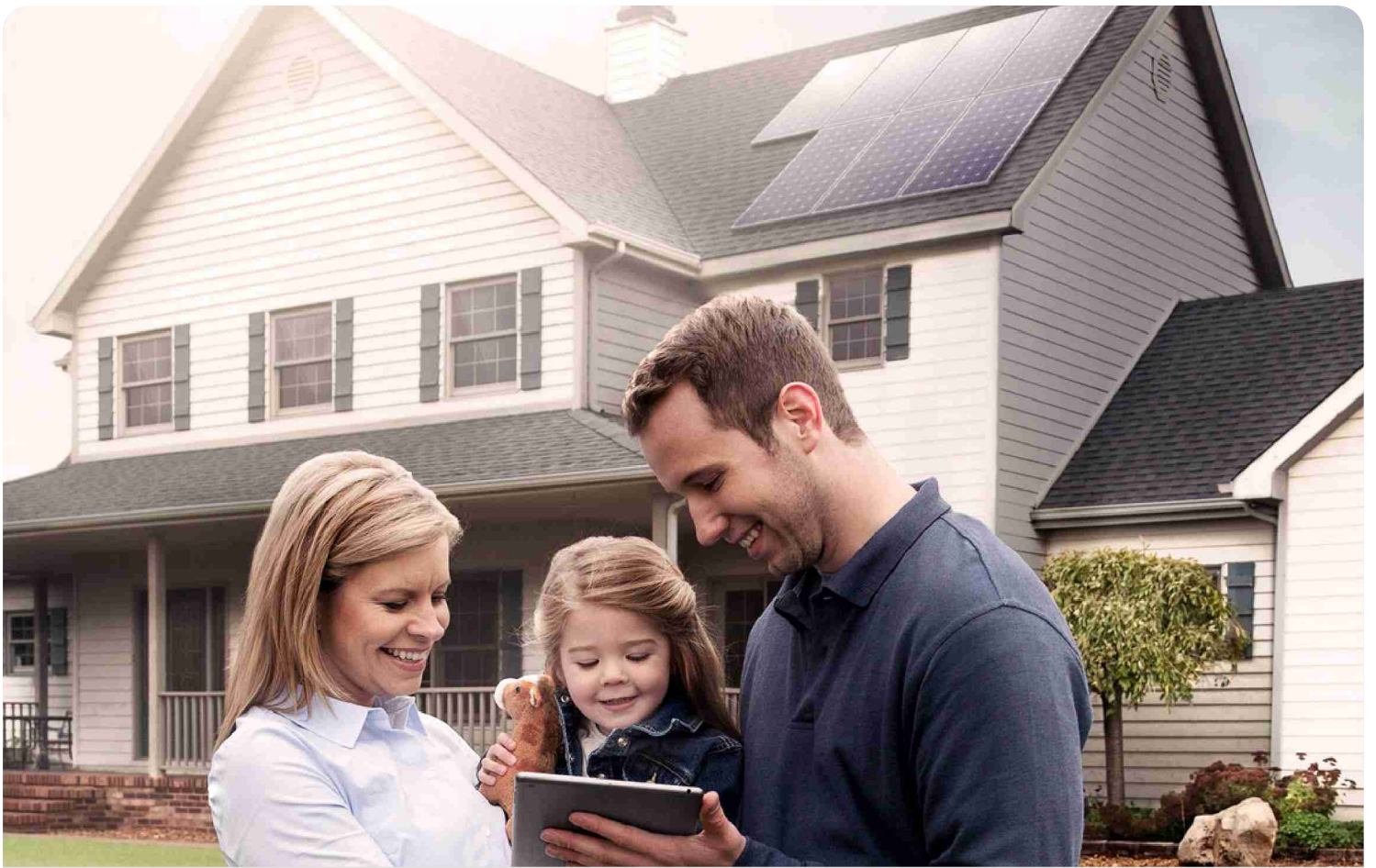
*The opportunities here are huge.*



MR. MARTIN HACKL  
Global Director  
Sales & Marketing  
Business Unit Solar Energy



*24 hours of sun - our vision of a future with 100% renewable energy. To achieve this, we are working day after day on technologies and solutions that enable us to be more efficient in generating, storing and making the best possible use of renewable energy.*



# SWITCH TO SMART HOMES AND MANAGE YOUR OWN ELECTRICITY.



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## FRONIUS INDIA NETWORK



Authorised System Partner:

## Vitronics Controls

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