Overview of all subsidies for sustainability

Subsidies (including SDE subsidies) are increasingly part of a business case as a supplier of solar panels. Often, a subsidy can make an investment a lot more attractive. Because there is often a lot of ignorance about the various government incentives, many companies miss out on opportunities.

# BOOK AN ON-SITE CONSULTATIONREAD ALL ABOUT THE BUSINESS SUBSIDIES

### QUICK AND CLEAR

Quickly go to

Because there are so many subsidies in 2024, we have listed most of the subsidies for you on the right.

#### TRANSITIONAL CTA

#### ISDE subsidy changes from 2024

The ISDE subsidy will change in a number of areas as of 2024. Among other things, the subsidy for solar panels will expire. You may have heard of the ISDE grant, but what does it actually mean? And how can it help you?

The ISDE, which stands for Investment Subsidy for Sustainable Energy and Energy Savings, is a government scheme to encourage people to use renewable energy and save energy. This means that the government gives money to people who want to buy, for example, solar panels, heat pumps, biomass boilers or pellet stoves.

But why would you want to take advantage of this? Well, first of all, it helps the environment. By using sustainable energy sources such as sunlight or biomass, you reduce the emission of harmful substances that contribute to climate change. That's good news for the planet!

But there are also benefits for you as a consumer. With the ISDE subsidy, you can save money on the purchase of these sustainable energy installations. This means that you have to pay less for solar panels or a heat pump, for example. In the long run, this can even help reduce your energy bills, as you'll be less reliant on fossil fuels.

But how exactly does it work? Well, if you decide to buy solar panels, for example, and you qualify for the ISDE subsidy, you can get some of the cost back from the government. However, you must meet certain conditions and you must apply for the subsidy before you buy the installation.

Sounds good, right? But before you rush straight to the store, it's important to do some research. Not all renewable energy installations are eligible for the subsidy, and the amount of the subsidy can also differ per type of installation. It is therefore smart to first check which option suits you best and whether you are eligible for the subsidy. Our advisors are always ready to answer your questions. Please <u>contact</u> us to schedule an appointment.

All in all, the ISDE grant can be a good way to make renewable energy more affordable and thus help our environment. So what are you waiting for? Do some research and see if the ISDE grant is something for you!

#### Postcode rose replaced by SCE scheme

Since 1 April 2021, the postcode rose has been replaced by the SCE scheme. Have you heard of the Cooperative Energy Generation Subsidy Scheme (SCE)? This scheme offers an opportunity for energy cooperatives and Homeowners' Associations (HOAs) to jointly invest in sustainable energy projects. Read on to see if this grant could be something for your initiative. Previously, this was the PostCodeRoos subsidy.

#### Who can apply for the SCE grant?

The SCE subsidy is specifically designed for energy cooperatives and homeowners' associations that want to contribute to the local production of renewable energy. Whether you're a household or a business, as long as you're a member of a cooperative or HOA, you can get involved.

# How does the SCE grant work?

The SCE subsidy rewards the generation of sustainable energy. You receive compensation per kilowatt hour (kWh) of electricity generated. This fee is determined on the basis of various factors, such as the basic amount set annually by the government and the market price for energy.

# **Conditions for the SCE subsidy**

To be eligible for the SCE subsidy, you must meet a number of conditions. This includes, among other things, being an energy cooperative or HOA, having a suitable location for energy generation, and conducting a feasibility study. Make sure you meet all the requirements before applying.

# How do you apply for the SCE subsidy?

Applying for the SCE subsidy is done via the eLoket of the Netherlands Enterprise Agency (RVO). After submitting your application, you will receive a decision from the government within 13 weeks.

With the SCE subsidy, you can contribute to a more sustainable future together with others. Is this something for your cooperative or HOA? Do some research and discover the possibilities! Our advisors are ready to answer your questions. Please <u>contact</u> us to schedule an appointment.

### Subsidy for asbestos off, solar panels on

The subsidy ceiling for 2022 to 2024 is €1,136,735. Part of this was granted in 2022. The removal of the asbestos roof must not have started yet. In 2024, the Netherlands will face an important milestone: the ban on asbestos roofs will come into force. This means that all asbestos roofs in the Netherlands must be removed by that time. While the cost of removing asbestos roofs can be challenging, the government is providing support through a relatively new scheme called 'Asbestos Off, Solar Panels On'. This scheme is specifically intended for farmers and owners of buildings containing asbestos that are or have been used for agricultural purposes.

Objectives of the scheme: Sustainability and Safety

The 'Asbestos Off, Solar Panels On' scheme has two important goals in mind. Firstly, the aim is to reduce the number of asbestos roofs in the Netherlands, with a view to the health and safety of citizens and the environment. Asbestos is harmful to health and can cause serious lung diseases if exposed for a long time. The removal of asbestos roofs therefore contributes to a safer living environment for all of us.

In addition, the government wants to stimulate the use of sustainable energy with this scheme. By installing solar panels in the locations where asbestos roofs used to be, sustainable energy is generated that contributes to a cleaner and greener future. This is part of the broader efforts to reduce CO2 emissions and combat climate change.

# Conditions of participation

To be eligible for the 'Asbestos Off, Solar Panels On' scheme, farmers and owners of buildings containing asbestos must meet certain conditions:

The maximum grant amount is set at €15,000.

The subsidy is awarded on the basis of €4.50 per square metre (m2) of asbestos removed. The surface area of the asbestos-containing material to be removed must be greater than 250 square meters.

The solar panels that are installed must have a minimum capacity of 5 kWp.

Advice from Beterduurzaam

If you have any questions about the 'Asbestos Off, Solar Panels On' scheme or if you need help finding the right steps for your situation, the advisors at Beterduurzaam are always there for you. They can help you understand how the scheme works and how to make the best use of it. So don't hesitate to <u>contact</u> us for expert advice and guidance.

In short, the 'Asbestos Off, Solar Panels On' scheme offers farmers and owners of asbestos-containing buildings an opportunity to not only make their buildings safer, but also contribute to a more sustainable future for all of us. With support from the government and advice from Beterduurzaam, we can take steps together towards a cleaner and greener world.

#### EVERYTHING AT A GLANCE

Subsidy opportunities.

#### VAT on solar panels 0%

Since 1 January 2023, the VAT rate on solar panels is 0% if they are delivered and installed on or near a home. This means that you do not pay VAT for solar panels on or near your home, and therefore cannot reclaim VAT. The VAT rate for the supply and installation of solar panels on or near a home is 0%. You can find more information about the requirements on this page.

Which solar panels are zero-rated?

Non-integrated solar panels: these are mounted on the roof or elsewhere in the home.

Integrated solar panels: these also act as roofing material. Please note: the 21% rate applies to integrated solar panels on new-build homes. See the bottom of this page for more information about this.

What is not zero-rated?

Supply and installation of non-integrated solar panels with multiple functions, such as PVT systems or solar collectors.

Supply and installation of solar collectors that convert sunlight into heat.

Supply and installation of solar panels on non-residential commercial premises, public buildings or buildings for the general interest.

Reinforcement of the roof for the installation of solar panels.

Milling of cabling.

Replacement of the entire distribution board, even if this coincides with the delivery and installation of solar panels.

Delivery of a smart meter.

Delivery and installation of bird protection or snow ramp.

Goods that have not been purchased specifically for the installation of solar panels, such as a new inverter due to a defect.

Delivery and installation of a heat pump or battery pack.

Exception for integrated solar panels on new-build homes:

As an installer or supplier of solar panels, you charge 0% VAT for the installation and supply of integrated solar panels on new-build homes, as you only supply the solar panels and not the home itself. However, if the solar panels are part of the supply of the home, the 21% rate applies to the installation and delivery of both the solar panels and the home.

Buyers of new-build homes pay 21% VAT for integrated solar panels, as these panels are part of the new-build home. The 21% rate therefore applies to the entire supply, including the integrated solar panels.

If you have any questions after reading, please contact us and one of our advisors will be happy to visit you without obligation.

#### **SVOH Grant**

Are you renting out a home and want to make it energy efficient? Then you can apply for a subsidy. This is the Subsidy for Sustainability and Maintenance of Rental Housing (SVOH). Have you ever heard of the SVOH subsidy? No? Don't worry, we'll find out together! This subsidy can really come in handy if you have plans to make your rental properties more sustainable. Let's take a look at what exactly this entails.

The SVOH subsidy stands for Subsidy Scheme for Sustainability and Maintenance of Rental Homes. That's quite a mouthful, but it's actually quite simple. It is a support from the government to help companies and individuals make the homes they rent out more sustainable.

#### How does it work?

Imagine that you rent out a house without solar panels, a heat pump or other sustainable solutions, then it can be quite interesting to install these sustainable solutions. Of course, this is a big investment, but with the SVOH it is made easier for you to make the homes more environmentally friendly.

#### Why is it important?

Making homes and business premises more sustainable is of course important for the environment and the climate. No less important is it good for your wallet. The monthly costs will be less and that in turn will have an effect on your tenants. It also makes the house future-proof and worth more. This is useful if you want to sell the house again.

#### How can Beterduurzaam help?

If you have any questions about the SVOH subsidy or if you need help applying for it, you can always contact the advisors of Beterduurzaam. They will be on hand to answer any

questions you may have and help you through the entire process. So if you're considering making your homes more sustainable, don't hesitate to contact us.

In short, the SVOH grant is a great opportunity for companies and individuals to make rental properties safer and more environmentally friendly. It not only helps your tenants, but also the entire neighborhood and the environment. So what are you waiting for? Take advantage of this grant and take a step towards a healthier future!

#### **SDE**+ subsidy

In 2011, the Dutch government introduced the SDE+, a bonus system through auctions, to replace the previous SDE support system, to promote sustainable energy. Change is the only constant, especially when it comes to the world of renewable energy. In 2013, we saw an important evolution with the introduction of the Sustainable Energy Production Incentive Scheme, better known as the SDE+. But as with all good things, subsidy schemes are also evolving, and in autumn 2020, the SDE+ subsidy was officially replaced by an even more powerful and versatile successor: the SDE++ subsidy.

What exactly does this mean for companies striving for a greener future? Let's dive into the details.

The SDE+ subsidy was a crucial instrument for stimulating sustainable energy production in the Netherlands. It provided financial support to projects that used renewable energy sources such as solar and wind power. But the world of sustainability never stands still, and the need for CO2 reduction and innovation is growing steadily.

Then came the SDE++ subsidy. This new scheme builds on the success of its predecessor, but goes beyond simply boosting renewable energy production. While the SDE+ mainly focused

on electricity production, the SDE++ encompasses a wider range of CO2-reducing technologies and projects. This includes initiatives in the field of heat and cold storage.

This expansion makes the SDE++ subsidy an even more powerful instrument in the fight against climate change. Companies now have more opportunities than ever to invest in renewable energy and innovative technologies. Whether it's making industrial processes more sustainable or developing advanced energy storage systems, the SDE++ grant provides financial support for a wide range of projects.

For companies that are involved in sustainability, which we want to help, the transition to the SDE++ subsidy offers new opportunities to help realize their green ambitions. By providing expertise in the application process and supervising renewable energy projects, we can help our clients take full advantage of this new scheme.

In short, the replacement of the SDE+ subsidy by the SDE++ subsidy marks a new era of sustainability and innovation in the Netherlands. With a wider range of supported technologies and projects, the SDE++ grant promises to play an important role in accelerating the energy transition and creating a cleaner, greener future for us all. <u>Contact us</u> to get more information about what opportunities there are in 2024.

#### **SDE++** subsidy

The SDE++ subsidises companies and non-profit organisations that generate renewable energy on a large scale or reduce CO2 emissions, in order to promote sustainable energy production and climate transition. At a time when sustainability is playing an increasingly important role in our daily lives, the SDE++ subsidy is an important ray of hope for companies striving for a greener future. In 2024, this subsidy will bring new opportunities and possibilities for those who want to invest in renewable energy sources and projects.

The Sustainable Energy Production Incentive Scheme (SDE++) is an initiative of the Dutch government to accelerate the transition to sustainable energy. This subsidy stimulates the production of renewable energy, but also other CO2-reducing technologies such as heat pumps and energy storage. With the SDE++ subsidy, companies and individuals can receive financial support for investments in these green initiatives.

Beter Duurzaam, as an advocate of sustainability, is ready to help customers apply for the SDE++ subsidy for the year 2024. Our goal is to make renewable energy projects accessible to everyone who wants to contribute to a cleaner and greener world. With our expertise, we guide our clients through the application process so that they can take full advantage of this incentive scheme. As soon as the dates for applying for the SDE++ subsidy are known, we will let you know immediately on our social media channels.

In this way, we want to ensure that our customers are always aware of the latest developments and opportunities in the field of sustainable energy.

The SDE++ subsidy offers an excellent opportunity for companies to invest in a more sustainable future. With the expertise and guidance of Beter Duurzaam, customers can make the most of this opportunity. Let's work together towards a greener world, one step at a time, one project at a time. Contact us for all available opportunities in 2024.

Would you also like to make use of a subsidy and be assured that you will not miss out on a subsidy? The specialists at Beter Duurzaam know their way around the subsidy landscape like no other. That is why we are happy to help you with the subsidy application. If desired, we can even take the request completely off your hands! We advise you to contact us in good time, so that we can prepare your application properly. The better we can prepare your case, the greater the chance that you will receive a grant in 2024. So don't hesitate to contact us; we are happy to take the time for you!

Feed-in subsidy - why was it introduced?

The reason for the introduction of the feed-in subsidy was expressed by the Minister in a letter to the House of Representatives on 15 June 2018. He writes the following here:

The feed-in subsidy provides the best incentive to ensure that the solar panels (continue to) produce optimally. In contrast to an investment subsidy, a feed-in subsidy can shape a smooth transition for citizens and companies that have already invested in solar panels. In the past, the investment costs for solar panels were significantly higher than they are now. As a result, some existing production installations have not yet been recouped. Discussions with parties and two broad stakeholder meetings show that the feed-in subsidy enjoys the greatest support among the parties involved, including the Dutch Association for Sustainable Energy (NVDE), Holland Solar, the Consumers' Association and the Homeowners' Association, among other things because this variant ensures a gradual transition from netting and the alleged adverse effects of an investment subsidy on the market. such as stop-and-go effects, can be better prevented.

# Applying for a feed-in subsidy - how does it work?

To apply for a feed-in subsidy, there will be 1 counter at the Netherlands Enterprise Agency (RVO.nl) where households and businesses can apply for the feed-in subsidy. How the amount of power fed into the grid is measured and what role the smart meter plays in this is still being examined. The minister wants to have the proposal for the new feed-in subsidy ready this summer.

# Feed-in subsidy - transition to netting

For owners who already own solar panels, there will be a transitional arrangement from netting to the <u>feed-in subsidy</u>. But how does this work in practice and what does it mean? As soon as there is more news about the transitional arrangement, it will be announced here. It has been indicated that the payback period of solar panels should remain 7 years.

#### Feed-in subsidy - how does it work?

- The new feed-in subsidy scheme will start on 1 January 2021 and will be opened
  annually for new applications as long as the payback period for solar panels without
  incentives is still well above 7 years.
- The subsidy scheme is open to citizens and companies with a small-scale consumer
  connection that feed self-produced renewable electricity into the electricity grid. The
  scheme therefore also applies to renewable energy sources other than solar energy,
  such as wind energy.
- From 2020, the feed-in subsidy will also apply to citizens and businesses that have already invested in solar panels and are now making use of the net metering scheme.
   A transitional arrangement will be designed for this group.
- The feed-in subsidy only applies to the renewable electricity imported into the
  electricity grid and therefore not to the direct self-consumption behind the connection.
  After 2020, small-scale consumers will not pay energy tax and ODE on the selfgenerated renewable electricity that citizens and businesses consume directly or store
  behind the connection.
- Each year, a subsidy ceiling is set in advance and covered within the budget of the
  Ministry of Economic Affairs and Climate Policy. In doing so, the government wants
  to set up the scheme in a cost-effective way to prevent overstimulation.

According to the draft Climate Agreement, important principles for the follow-up of the net metering scheme are: An average payback period of approximately 7 years for a representative reference case and the most cost-efficient solar panels available on the market. For citizens and companies that have already invested in solar panels, there will be a smooth transition. Small-scale consumers will continue to pay no energy tax, VAT and renewable energy surcharge (ODE) on the self-generated renewable electricity that citizens and businesses consume directly or store directly behind the connection.

#### What is a feed-in subsidy for solar panels?

The letter that Minister Wiebes has written to the House of Representatives about the decision that the net metering scheme for solar panels will be replaced by a feed-in subsidy has consequences for everyone with solar panels or people who are planning to purchase solar panels. In addition to stimulating solar energy, the new scheme also focuses on other renewable energy sources such as wind energy. The starting point for the new scheme is an average payback period of approximately seven years. This is what Minister Wiebes of Economic Affairs and Climate Policy writes today in a letter to the House of Representatives. The feed-in subsidy is a payment for the electricity that has been fed into the electricity grid. Consuming the generated electricity itself remains attractive, because households and businesses will continue to pay no energy tax and no ODE on this after 2020. In 2020, the scheme will replace the current net metering scheme, in which a subsidy ceiling is set annually in advance.

#### What do I need to know about SDE++ subsidy?

Are you working on making your company more sustainable? Probably solar panels are a good option for your business premises? Do you want to save CO2 and reduce the burden on the environment? Then the SDE++ subsidy is your chance to develop a profitable case. Read all the information about the SDE++ subsidy for 2024 on this page.

# ISDE subsidy changes 2024

You may have heard of the ISDE grant, but what does it actually mean? And how can it help you? The ISDE, which stands for Investment Subsidy for Sustainable Energy and Energy Savings, is a government scheme to encourage people to use renewable energy and save energy. This means that the government gives money to people who want to buy, for example, solar panels, heat pumps, biomass boilers or pellet stoves. But why would you want to take advantage of this? Well, first of all, it helps the environment. By using sustainable energy sources such as sunlight or biomass, you reduce the emission of harmful substances

that contribute to climate change. That's good news for the planet! But there are also benefits for you as a consumer. With the ISDE subsidy, you can save money on the purchase of these sustainable energy installations. This means that you have to pay less for solar panels or a heat pump, for example. In the long run, this can even help reduce your energy bills, as you'll be less reliant on fossil fuels. But how exactly does it work? Well, if you decide to buy solar panels, for example, and you qualify for the ISDE subsidy, you can get some of the cost back from the government. However, you must meet certain conditions and you must apply for the subsidy before you buy the installation.

Sounds good, right? But before you rush straight to the store, it's important to do some research. Not all renewable energy installations are eligible for the subsidy, and the amount of the subsidy can also differ per type of installation. It is therefore smart to first check which option suits you best and whether you are eligible for the subsidy. Our advisors are always ready to answer your questions. Please contact us to schedule an appointment.

All in all, the ISDE grant can be a good way to make renewable energy more affordable and thus help our environment. So what are you waiting for? Do some research and see if the ISDE grant is something for you!

THE SDE++ 2024

Is there for a reason

The SDE++ Subsidy for 2024 is an extra incentive for a company to make a new investment in the field of solar energy and reducing CO2 emissions.

Financial support

The SDE++ subsidy provides financial support to solar energy projects, reducing investment costs. This makes it more attractive and feasible for businesses to invest in solar energy.

Long-term security

Projects that receive the SDE++ subsidy benefit from long-term security thanks to the guaranteed subsidy amounts over a long period of time. This helps stabilize financial planning and minimize risks for investors.

Promotion of renewable energy

By applying for the SDE++ subsidy for solar energy projects, you actively contribute to the transition to sustainable energy sources. This not only helps reduce reliance on fossil fuels, but also helps reduce CO2 emissions and promote a cleaner future.

#### AGAIN SUBSTANTIAL AMOUNT ALLOCATED

Eight billion euros in SDE++ subsidy 2024

SDE++ subsidy is intended for companies and organisations that produce sustainable or renewable energy or reduce CO2. Minister Jetten of Climate and Energy has announced that eight billion euros in subsidies will be available in both 2024 and 2025. You are eligible for this subsidy if, for example, you are going to use solar panels or a heat pump.

The purpose of the SDE++ subsidy

With the SDE++ subsidy stimulates the government to produce sustainable energy and reduce CO2 in various sectors. For example, you can think of sectors such as industry, mobility and electricity, but also agriculture and the built environment. In this way, the government wants to make the energy transition feasible and affordable.

Minister Jetten on the SDE++ subsidy 2024

"With the SDE++ subsidy, we are giving an extra boost to the roll-out of CO2-reducing technologies, such as the roll-out of renewable electricity, sustainable heat and the roll-out of CCS. These techniques support the transition for all sectors. As usual, the government will also look at the expected projects and available cash space. According to current insights, there will therefore be sufficient room for this in the SDE++ even after 2025."

Subsidy for solar panels and heat pumps

As an organisation, you can become more sustainable in various ways and, as a result, claim an SDE++ subsidy 2024. As soon as the exact conditions are known, you will find them on the RVO website. For more information about this, please feel free to contact our specialists. We are happy to advise you on this.

Opening SDE++ subsidy 2024

You can apply for the SDE++ subsidy from 10 September 2024. From then on, the subsidy will be opened up again in phases.

#### When can I apply for the SDE++ for 2024?

The opening round for the SDE++ subsidy 2024 is from 10 September to 10 October 2024.

#### Who pays for the SDE++ 2024 subsidy?

The SDE++ is funded by the Ministry of Economic Affairs and Climate Policy. In 2023, in 2024 and in 2025, €8 billion will be made available to stimulate and accelerate the realisation of more sustainable technologies.

#### How much is the amount of the SDE++ 2024?

As in 2023, the amount is also €8 billion. Minister Jetten also recently announced that the amount will also be €8 billion in 2025.

#### Can I increase the chances of SDE++ 2024?

Yes, by submitting in earlier phases, you prevent the subsidy ceiling from already being reached.

#### Is the SDE++ 2024 also for private individuals?

In 2011, the subsidy scheme was changed and given a new name SDE+ subsidy. The scheme is no longer intended for private individuals and is more focused on economic efficiency. As a result, the amounts that have to be calculated are constantly changing.

# SDE subsidy, what is it?

SDE subsidy is intended for companies and organizations that produce sustainable or renewable energy or reduce CO2. On this page you will find all information about this SDE subsidy. Large-scale consumers who generally have a low cost of electricity can use this Sustainable Energy Production and Climate Transition Incentive (SDE++) to invest profitably in solar panels or a heat pump.

This incentive ensures that you receive compensation for every kWh generated. To be eligible for this grant, the applicant must meet a number of conditions.

#### The purpose of the SDE subsidy:

For some time now, CO2 reduction has also been part of the Stimulation of Sustainable Energy Production and Climate Transition (SDE++). With this scheme, the government encourages various sectors to produce sustainable energy and reduce CO2. Think, for example, of sectors such as industry, mobility and electricity, but also agriculture and the built environment. With the SDE subsidy, the government wants to make the energy transition not only feasible, but also affordable.

SDE subsidy for solar panels and heat pumps

As an organisation, you can become more sustainable in all kinds of ways and be eligible for this subsidy. This can be done, for example, if you want to install solar panels, but also if you install a heat pump.

Do you want to be eligible for an SDE subsidy? On the RVO website you will find the general terms and conditions, but also the specific conditions for solar panels and heat pumps. For more information about this, please feel free to contact our specialists. We are happy to take the time to advise you on this.

#### **Reimbursement SDE subsidy**

How much subsidy can I receive? For solar PV, the maximum reimbursement for SDE subsidy 2021 has been set at 7.22 cents per kWh. The amount at which you register is called the phase amount. This compensation is made up in a number of parts, namely the basic amount and the maximum subsidy amount.

## **Opening SDE subsidy 2023**

The SDE 2023 is open from September 5, 2023 (9:00 a.m.) to October 5, 2023 (5:00 p.m.). During this period, you can apply for the subsidy for your investments.

A few weeks before the opening, we can prepare the draft grant application. Depending on our market analysis, experience, current cost price and the wishes of you as a client, we determine the registration amount of your application.

If you receive a positive decision, you will be awarded the SDE subsidy over a period of twelve or fifteen years. This period depends on the technique used for which you receive the decision.

#### Cost of solar power

How much of my costs do I save?

The amount of the subscription to the SDE subsidy depends to a large extent on the cost price of the energy you generate. A 1MWh solar power installation can have a cost price difference of more than 20 percent in two situations.

This is due to factors such as: Location in the Netherlands, Location of the roof, Angle of inclination of the solar panels, Type of roofing, Size of the system and Necessary adjustments to the energy grid

#### What else do you need to know about SDE subsidies?

In addition to the cost of solar power and the amount of the compensation, there are a number of other things that are important to know before you submit an SDE subsidy application. For example, you should take into account the following points:

Main connection SDE subsidy, what can this cost?, Subsidy period, how does the subsidy run?, Banking, what if I produce too much or too little?, How does the payment of SDE subsidy work?

# Don't miss out on an SDE subsidy

Would you also like to make use of this subsidy and be assured that you will not miss out on a subsidy? Please contact Beter Duurzaam. Our specialists know their way around the subsidy landscape like no other. That is why we are happy to help you with the subsidy application. If you wish, we can even take the request completely off your hands! We advise you to contact us in good time, so that we can prepare your application properly. The better we can prepare your case, the greater the chance that you will receive an SDE subsidy. Therefore, please contact us quickly; We are happy to take the time for you!

#### SDE++ subsidy

At a time when sustainability is playing an increasingly important role in our daily lives, the SDE++ subsidy is an important ray of hope for companies striving for a greener future. In 2024, this subsidy will bring new opportunities and possibilities for those who want to invest in renewable energy sources and projects.

The Sustainable Energy Production Incentive Scheme (SDE++) is an initiative of the Dutch government to accelerate the transition to sustainable energy. This subsidy stimulates the production of renewable energy, but also other CO2-reducing technologies such as heat pumps and energy storage. With the SDE++ subsidy, companies and individuals can receive financial support for investments in these green initiatives.

Beter Duurzaam, as an advocate of sustainability, is ready to help customers apply for the SDE++ subsidy for the year 2024. Our goal is to make renewable energy projects accessible to everyone who wants to contribute to a cleaner and greener world. With our expertise, we guide our clients through the application process so that they can take full advantage of this incentive scheme. As soon as the dates for applying for the SDE++ subsidy are known, we will let you know immediately on our social media channels.

In this way, we want to ensure that our customers are always aware of the latest developments and opportunities in the field of sustainable energy.

The SDE++ subsidy offers an excellent opportunity for companies to invest in a more sustainable future. With the expertise and guidance of Beter Duurzaam, customers can make

the most of this opportunity. Let's work together towards a greener world, one step at a time, one project at a time. Contact us for all available opportunities in 2024.

#### Subsidy; asbestos off, solar panels on

In 2024, the Netherlands will face an important milestone: the ban on asbestos roofs will come into force. This means that all asbestos roofs in the Netherlands must be removed by that time. While the cost of removing asbestos roofs can be challenging, the government is providing support through a relatively new scheme called 'Asbestos Off, Solar Panels On'. This scheme is specifically intended for farmers and owners of buildings containing asbestos that are or have been used for agricultural purposes.

Objectives of the scheme: Sustainability and Safety

The 'Asbestos Off, Solar Panels On' scheme has two important goals in mind. Firstly, the aim is to reduce the number of asbestos roofs in the Netherlands, with a view to the health and safety of citizens and the environment. Asbestos is harmful to health and can cause serious lung diseases if exposed for a long time. The removal of asbestos roofs therefore contributes to a safer living environment for all of us.

In addition, the government wants to stimulate the use of sustainable energy with this scheme. By installing solar panels in the locations where asbestos roofs used to be, sustainable energy is generated that contributes to a cleaner and greener future. This is part of the broader efforts to reduce CO2 emissions and combat climate change.

Conditions of participation

To be eligible for the 'Asbestos Off, Solar Panels On' scheme, farmers and owners of buildings containing asbestos must meet certain conditions:

The maximum grant amount is set at €15,000.

De subsidie wordt toegekend op basis van €4,50 per vierkante meter (m2) verwijderd asbest. De oppervlakte van het te verwijderen asbesthoudend materiaal moet groter zijn dan 250 vierkante meter.

The solar panels that are installed must have a minimum capacity of 5 kWp.

Advice from Beterduurzaam

If you have any questions about the 'Asbestos Off, Solar Panels On' scheme or if you need help finding the right steps for your situation, the advisors at Beterduurzaam are always there for you. They can help you understand how the scheme works and how to make the best use of it. So don't hesitate to contact us for expert advice and guidance.

In short, the 'Asbestos Off, Solar Panels On' scheme offers farmers and owners of asbestos-containing buildings an opportunity to not only make their buildings safer, but also contribute to a more sustainable future for all of us. With support from the government and advice from Beterduurzaam, we can take steps together towards a cleaner and greener world.

# Electricity available and affordable

While companies (have to) fully electrify, the energy grid has far too little capacity for the coming years. A battery makes energy available and keeps energy affordable.

#### SCHEDULE A NO-OBLIGATION APPOINTMENT

#### **GRID CONGESTION**

Code red for the electricity grid

Due to the energy transition, we are increasingly dependent on electricity. The energy grid cannot cope with this demand and grid operators do not have a solution available.

Not being able to weigh down a connection that is too small

Many companies are stuck in traffic for years on their way to a heavier connection, which means that they cannot meet sustainability goals.

Additional grid supply costs continue to rise

Grid operators are charging more and higher costs for making energy available and distributing.

Turbulent price fluctuations

Just when you need energy the most, the energy price peaks. And if you want to feed power back, you don't get enough for it.

#### WHOEVER KEEPS SOMETHING, HAS WATTS

With a battery, you keep power available and affordable

Our sustainability specialists will be happy to give you insight into what grid congestion means for you and how you can benefit from these benefits:

#### LET AN ADVISOR DO THE MATH FOR YOU

Always enough energy, despite your connection

With a battery, you always have enough electricity available to charge your fleet, for example. Even if the reinforcement of your energy connection is stuck in traffic.

#### Save extra costs

With a battery, you can choose to sell your electricity for  $\in$  0.06 per kWh or to save the electricity for a later time. With a cost price of  $\in$  0.25 per kWh, you save a lot!

# Make money from price fluctuations

With a battery of, for example, 50kWh, you could earn € 0.09 per kWh with a dynamic contract in the past period. On the imbalance market, this was even € 0.50!

Keeping investment in solar panels extra profitable

With a battery, you can also use the afternoon solar energy in the evening and save the highest energy prices.

#### Keeping power local

With a battery, you can keep the energy you generate yourself nice and local. As a result, no energy is lost to transport.

Mapping the demand for battery capacity

Because all eyes are now on batteries, grid operators have mapped out how much battery power is needed per province (see map).

To help you with the calculations and paperwork for battery financing applications, we are happy to help you.

# SCHEDULE A NO-OBLIGATION CONSULTATION

Battery requirements-TenneT

#### **ENERGY TRADING**

For the power out in 3 simple steps

Step 1

Explore the Opportunities

In a no-obligation conversation, you will discover what a battery can do for your company.

Step 2

Calculate your revenue model

Assess the different scenarios that our specialists have calculated for you.

Step 3

Get a head start now

As a forerunner, gain smart insider knowledge, which will allow you to benefit first.

### Which subsidies apply for energy storage batteries?

For companies that want to invest in energy storage batteries, the Netherlands offers financial support through the Energy Investment Allowance (EIA). The EIA allows companies to deduct 40% (2024) of the investment costs from their taxable profit, on top of the usual depreciation.

#### What does a storage battery cost globally?

We understand that you want to know roughly what purchase price you need to take into account in order to benefit from energy storage. The prices can vary based on the current offer, but also combination or graduated advantage.

With your finger in the air, you can take into account the following price ranges:

The purchase price of a 50 kW battery from brand A can be around €50,000 and a 500 kW battery from brand B around €590,000,-. Additional installation costs vary around €120 and €230 x kW of power.

# Should I invest in energy storage now or should I wait a little longer?

Here are the reasons why many people are now investing in energy storage:

If you need a larger connection within a few years, but can't be helped by the grid in time. If you want to save energy costs now. When you generate your own solar energy, or buy cheap when the price is low, you have power on hand when the electricity price is high. In addition to saving, you can now be the first to benefit from pioneering trading in the imbalance market. In addition, combining energy storage with renewable energy sources such as solar panels can optimize the use of green energy and reduce the CO2 footprint.

# Which brands of batteries does Beter Duurzaam currently recommend and install for large business use?

For large business use (50kW to 500kW per battery) we recommend Tesla and KSTAR. Boost your savings with a battery

The price of energy continues to rise. With a home battery, you can store cheap or self-generated energy for a later time that day.

#### SCHEDULE A FREE CONSULTATION

#### **RISING COSTS**

Energy prices continue to rise

Due to the energy transition, the demand for electricity is growing explosively. Higher demand means higher price.

Higher energy demand pushes up prices

Due to the rising demand for energy, investments have to be made in the energy grid and energy suppliers are raising the price.

Netting is being phased out

Because netting is being phased out, you can settle fewer and fewer energy costs.

Dependent on energy companies

As long as you can't store energy yourself, you will remain dependent on polluting energy companies.

#### WHOEVER KEEPS SOMETHING, HAS WATTS

With a home battery, you decide what you do with your electricity and at what price.

Storing energy in a home battery is the answer to the explosive growth of grid problems.

#### LET AN ADVISOR COME HOME WITHOUT OBLIGATION

Keep your energy bills low

With a battery, instead of earning €0.06 per kWh, you can choose to smartly save €0.34 per kWh!

Get the most out of your solar panels

With a battery, you can store self-generated energy that you don't use immediately for a later time. This allows you to use all the energy generated by your solar panels.

Nice and self-sufficient

With a battery, you always have power available, even if your solar panels generate less or if the electricity goes out.

#### COMPARE APPLES TO APPLES

Compare home batteries

There are different types of home batteries on the market. Avoid making a hasty decision and make sure you always compare the same thing. Please note:

Ability: Make sure you have the power in kilowatt hours (kWh) and Volts (V) clear.

Working temperature: Nothing is more annoying than a battery that doesn't work in the winter or that doesn't work as well when it's outside or in the shed.

Cycles: View the number of charge cycles to compare how long a battery lasts.

Als je bovenstaande ingrediënten meeneemt in de vergelijking, voorkom je dat je te snel word misleidt.

#### SCHEDULE A NO-OBLIGATION CONSULTATION

Solaredge

#### **ENERGY TRADING**

Accelerate your savings

Step 1

Get informed

Together, we will explore whether or not a home battery is a smart investment for you.

Step 2

Compose your best offer

Based on your situation and wishes, we will put together the best solution with you.

Step 3

Boost your savings

Start storing energy and save on energy costs right away.

# What subsidy is available for energy storage?

In the Netherlands, you can make use of the Sustainable Energy Investment Subsidy (ISDE). Because we notice that many customers get stuck in the application process, we take this request off your hands for a standard fee of  $\in$  125,-.

### What cheap loans are available for home batteries?

Especially for making your home more sustainable, there are various ways to obtain financing in the Netherlands. The Heat Fund is a foundation that makes loans available. Especially for households with a combined aggregate income of less than € 60,000, they do not charge interest. With a higher aggregate income, the interest rate is around 3.8% for a 7-year loan. Repayments can be made between 7-20 years (the longer the loan, the higher the interest rate). There are also sustainability loans from SVN, for example. Another option is the Temporary Energy Emergency Fund. If you have a low income and a high energy bill, the Emergency Fund helps you to avoid energy debt.

When should I wait a little longer with the purchase? (simple calculation example)

When better to wait?

There are different price ranges of home batteries on the market. The technology has not yet reached the point where the cheap batteries are actually good. You'll soon notice this when you compare the warranty, the working temperature or the number of charging cycles. An example of calculations: A cheap home battery ( $\in$  6,000) with a total kWh of 51,000 and a RoundTripEfficiency of 89.4% costs  $\in$  0.131 per kWh stored. A better home battery ( $\in$  9,500) with a total kWh of 90,000 and a RoundTripEfficiency of 93.1% costs  $\in$  0.113 per kWh stored. If your sustainability budget only has room for a cheap battery, then it's a waste and it's better to wait a little longer with the investment.

#### When is a home battery interesting?

These are the reasons why many people are investing in energy storage now:

Emergency power | If you want to have power longer during power outages. An average home battery keeps power available for a day longer! Save money | If you want to save energy costs now. If you generate your own solar energy, or buy cheap when the price is low, you can save it for a later time that day when the electricity price is high. Independence | Storing your own energy makes you a lot less dependent on energy contracts and energy suppliers. Environment | In addition, combining energy storage with renewable energy sources such as solar panels can optimize the use of green energy and reduce the CO2 footprint.

Which brands of home batteries does Beter Duurzaam currently recommend?

Currently, we recommend home batteries from SolarEdge, KSTAR, Enphase, and Huawei.

#### **Heat Pumps**

#### **FULLY ELECTRIC OR HYBRID**

Your home and tap water at the perfect temperature with a heat pump

Lower energy bills and healthier air quality at home: experience the benefits of a heat pump!

BOOK A FREE CONSULTATION AT HOME SIGN UP FOR A FREE HEAT PUMP EVENT GAS, MONEY AND HEALTH

#### The Risks and Dangers of Gas

Old-fashioned heating, such as a central heating boiler, is gas-powered. These boilers are not nearly as smart as heat pumps and there are more and more disadvantages to gas.

#### High energy costs

If you still heat on gas instead of electricity, you remain dependent on the ever-rising gas prices.

Asthma and carbon monoxide poisoning

Every year, more than 70,000 children get asthma or carbon monoxide poisoning from the use of gas in homes.

Not being able to use solar energy for heating and cooling

Het is zonde om zelf opgewekte zonne-energie niet te kunnen gebruiken voor je verwarming, verkoeling of je leidingwater.

#### GOOD FOR YOUR WALLET, YOUR HEALTH AND THE ENVIRONMENT

Also opt for gas-free living!

Due to the disadvantages and risks of gas, more and more people are choosing to live gasfree. That's good for your wallet, your health and the environment.

#### **BOOK YOUR CONSULTATION NOW**

70% - 100% less gas consumption

Depending on which appliances consume even more gas, gas consumption usually drops 70% - 100%.

### Reduced energy bills

Alternative heat sources run on sustainably generated solar energy or even directly on sunlight. That makes a big difference in your energy costs.

Greener energy label = higher home value

A greener energy label increases the value of your home and makes your home more attractive when sold.

Healthy indoor climate

No more harmful substances in the home that can cause asthmatic symptoms or even carbon monoxide poisoning.

# **Environmentally friendly**

Alternative heat sources emit less or even no harmful substances. In this way, you leave the world better, healthier and more liveable for future generations.

#### Carefree sustainability with Better Sustainability

Beter Duurzaam brings the benefits of gas-free living within reach. We help you become more sustainable with high-quality heat pumps and solar water heaters. We do this based on a clear vision of quality, safety and customer satisfaction.

#### **CONTACT US**

#### Heat pump installation

#### THESE CUSTOMERS PRECEDED YOU

"In addition to the pleasant installation, it was also just good to make appointments, easy contact, also about times when someone would be in the house. All in all, we had a great experience, would ask Beter Duurzaam again if we have a job like this again."

Eerde Bruining, Private Private

Check this and 175+ other reviews on Google

#### Heat pump project 1-1

"Installation of hybrid heat pump and solar panels.

The installation went perfectly. All employees worked very neatly, were open to questions and communicated well. After work, everything was left neatly behind. Everything still works well. Also looks neatly installed."

JC Derriks Private

Check this and 175+ other reviews on Google

3 STEPS TO GAS-FREE LIVING

Gas-free living well regulated

Making your home more sustainable is craftsmanship. At Beter Duurzaam, we understand that you don't want to lose sleep over important themes such as quality and safety. That's why we only work with proven products. We also take care of everything for you with a professional team of experienced and certified specialists.

Step 1

Schedule an appointment

Schedule an appointment with our advisor when it suits you

Step 2

On-site advice

Our advisor will give you expert advice tailored to your needs, at your location

Step 3

Everything well arranged

Our certified installers make everything perfect

#### What subsidies are available for heat pumps?

The most important subsidy for heat pumps in the Netherlands is the Investment Subsidy for Sustainable Energy and Energy Saving (ISDE), read more about it here.

This subsidy is also intended for private individuals and is available for the purchase of at least A++ heat pumps (all our heat pumps comply with this).

# Do you work with your own people?

Yes, we work with a dedicated team of more than 45 professionals. This team is made up of experts in various fields, such as installers, technicians, project managers, and customer service representatives. By working with our own staff, we can accurately control and guarantee the quality of our services. Our employees are highly educated and regularly trained in the latest technologies and methodologies. This enables us to ensure high customer satisfaction and to respond efficiently to the rapidly changing solar market. Having a

permanent team also ensures a strong company culture and a consistent level of service, which contributes to the reliability and reputation of our company.

#### How long does a heat pump last?

The lifespan of a heat pump can vary, but they generally last longer than traditional heating systems. Heat pumps have an average lifespan of about 15 to 20 years, although this depends on the type of heat pump, its use and maintenance. Regular professional maintenance helps extend the life of a heat pump.

#### How much noise does a heat pump make?

The noise level of a heat pump depends on the model and installation.

Outdoor unit: The outdoor unit of an air-to-water heat pump can produce noise during operation. This noise is usually similar to that of a modern air conditioning unit.

Noise levels: Noise levels vary, but modern heat pumps are designed to be relatively quiet.

Many models produce less than 60 decibels (dB) at a distance of 1 meter, which is comparable to a normal conversation. Placement: The placement of the outdoor unit may affect the impact of the noise on the living environment. It's important to choose a model that meets your noise standards and consult with a knowledgeable installer for advice on the best location to minimize noise pollution.

### When should you not get a heat pump?

If your home is poorly insulated and you don't want to or can't insulate, it's not smart to buy a heat pump. That's because you're heating at a low temperature. Read here what other factors determine whether your home is suitable for a heat pump.

#### Which brands of heat pumps does Beter Duurzaam recommend?

At the moment, we only recommend and install heat pumps from Daikin.

Is my house suitable for a heat pump and which one do I need?

Which heat pump do I need, is my house suitable for a heat pump, how much does a heat pump cost? These are just two questions that we hear a lot in conversations with the advisors. To determine whether your home is suitable for a heat pump, there are several factors to

consider. Here are some important considerations:

Insulation: A well-insulated house is essential for the efficient operation of a heat pump. Heat pumps work best in homes that retain their heat well, so check the insulation of walls, roof, floors, and windows.

Heating system: Heat pumps are most effective with low-temperature heating systems such as underfloor heating or low-temperature radiators. Traditional radiators designed for higher boiler temperatures may be less suitable.

Space for Installation: Depending on the type of heat pump you're considering, you'll need space for the indoor and outdoor units. For example, air-to-water heat pumps require outdoor space for the air unit.

Type of House: Suitability may also depend on the type of house. Detached or corner houses often have more options for the installation of a heat pump than apartments.

Existing Heating System: If you have an existing heating system, such as a central heating boiler, a hybrid heat pump may be an option. This combines a heat pump with the traditional boiler.

Energy source: Consider whether your home already has access to a renewable energy source, such as solar power, which can improve the carbon and economic efficiency of the heat pump.

Local Regulations: Check local building codes and environmental laws, especially if you live in a conservation area or have a Grade II listed building.

Noise considerations: Some heat pump outdoor units may produce noise. Consider the impact of this on your living situation and that of your neighbors.

Budget: In addition to the cost of installation, you'll need to factor in the overall cost, including any potential modifications to your home to make it suitable for a heat pump. Suppose you have decided that you want to buy a heat pump, then the next question is, which heat pump do I need? It's not easy to give a simple answer to this question, but we're going to try anyway. Depending on the size of your home and the size of your household, our advisors will work with you to choose the right heat pump.

It is smart to call in the expertise of an energy advisor or a specialized installer for personal advice that perfectly matches your specific situation. Of course, our advisors are ready to help you. Please contact us to schedule an appointment.

# How does a heat pump work?

A heat pump uses a small amount of electricity to move heat from one place to another, rather than generating heat directly. It works similar to a refrigerator, but in reverse. The system consists of two parts: an indoor unit and an outdoor unit.

Heat transfer

The outdoor unit extracts heat from the air, water, or ground (depending on the type of heat pump) and transfers it to a coolant. This liquid, which absorbs heat and evaporates at low temperatures, is then pumped to the indoor unit.

Compression and dispensing

In the indoor unit, the evaporated coolant is compressed, which increases the temperature.

This warm coolant then releases heat into the air or water in your heating system.

Refrigeration

In summer, the process can be reversed for cooling. The heat pump then extracts heat from the indoor air and releases it into the outside air, similar to an air conditioner.

Advantages of heat pumps

Energy efficiency: Heat pumps are much more efficient than traditional heating systems, as they primarily move existing heat rather than generate it.

Environmentally friendly: They significantly reduce CO2 emissions, especially when combined with renewable energy sources.

Cost savings: While the initial installation cost may be higher, heat pumps offer significant savings on energy bills in the long run.

Versatility: They can be used for heating, cooling, and even for heating water.

Conclusion

Heat pumps are a smart investment for the future, both for the environment and for your wallet. They are a key component in the fight against climate change and the clean energy

transition. With the continuous improvements in technology and increase in popularity, heat pumps will play an increasingly important role in sustainable buildings.

# What costs are involved in purchasing a heat pump?

To make a good choice in purchasing a heat pump, it is necessary to calculate not only the purchase costs but also the costs in the longer term. This can differ per brand (e.g. Daikin) but also per installer. Acquisition costs and subsidy

The price of a Daikin heat pump with an A++ label varies depending on the type, power and complexity of the installation. The cost can range from around €3,000 to over €15,000, including installation. The With the A++ label you are eligible for the ISDE subsidy. The exact amount of the grant depends on the type and model of the heat pump, but the grant can cover 25% to 30% of the costs, with a starting amount of around €500. Plus, there's an added bonus for A+++ models at €250,-. Maintenance costsRegular maintenance is necessary to maintain the efficiency and longevity of the heat pump. Periodic maintenance costs can range from €100 to €300 per year, depending on the service provider and maintenance contract. Repair costs Unlike a central heating boiler, a heat pump has fewer moving parts. As a result, the repair costs - after the warranty period - are usually much lower than with a central heating boiler. Lifespan and total cost Heat pumps typically have a long lifespan, often 15 to 20 years, depending on the model and how well they are maintained. It is important to remember that these costs are only estimates and may vary depending on personal circumstances and market developments. For accurate pricing and subsidy information, it is recommended to request a quote from a certified dealer and check the latest information about ISDE subsidies with the Netherlands Enterprise Agency (RVO).

As a certified installer, our in-house advisors will of course be happy to help you :)

#### Do you work with your own staff?

Yes, we have been working with a dedicated team of almost 50 professionals since 2015. This team consists of experts in various fields, such as consultants, work planners, electricians and mechanics. Because we know from experience that hired freelancers are

mainly concerned with their own earnings, we consciously work with a team of our own people. Not only do they work more closely together, but they are also better attuned to each other. As a result, you as a customer are central, as it should be.

It is also easier to train our own specialists non-stop.

#### What about the continued existence of netting?

The net metering policy, which allows owners of solar panels to offset the electricity they supply to the grid against the electricity they take from the grid, is subject to changes due to government policies. In recent years, there has been discussion about reducing or even abolishing this scheme. Now that the popularity of solar panels is increasing, netting is an increasing financial burden for energy suppliers and the government. Future changes may mean that owners of solar panels receive less compensation for the power fed into the grid or that netting is gradually phased out. This has implications for the economic attractiveness of solar panels, but it's important to stay up-to-date on the latest developments and consider how it might affect your solar investment.

#### What is the payback period when the netting stops?

If the net metering scheme ends, the payback period of solar panels will probably increase. The current payback period of solar panels is largely dependent on the net metering scheme, which makes it possible to deduct the electricity that is fed back into the grid from one's own electricity bill. Without this scheme, owners of solar panels would only benefit financially from the electricity they consume directly. This means that the economic benefits of having solar panels become dependent on one's own consumption pattern and the ability to store electricity for later use (e.g. via a battery). The exact impact on the payback period depends on several factors, such as the cost of the installation, energy prices, the company's own energy consumption and the efficiency of the solar panels. It is important to make a detailed calculation based on the specific circumstances to get an accurate estimate of the payback period.

#### Do I have to pay to feed power back into the grid?

In most cases, you don't have to pay to feed power back into the grid. On the contrary, you can receive compensation for the electricity you feed back. This is part of the net metering

scheme, in which the electricity you supply to the grid is deducted from your own consumption, which lowers your electricity bill. However, there are conceivable situations in which administrative costs may be charged by the energy supplier for feeding in electricity. This depends on the specific conditions of your energy supplier and the applicable regulations. It is important to check this with your energy supplier in advance.

# What subsidies are available for solar panels?

At the moment, there are no subsidies available for solar panels. However, there are often loans available from (local) governments or banks that work with 0% or a low interest rate for sustainable purposes. The availability of subsidies for solar panels varies depending on the location and time of day. Governments and local bodies often provide financial support to encourage the purchase of solar panels. These subsidies can take the form of direct financial contributions, tax reductions, or favourable feed-in tariffs for the electricity fed into the grid. We can help you with this, but it is also advisable to obtain the most up-to-date information on subsidies through official channels such as government websites or local energy consultancies, as these schemes are regularly updated.

#### Does alternating current enter the house with solar panels?

That depends on the system you choose. With an Enphase system, AC does indeed enter the home! So despite solar panels producing direct current (DC), an Enphase system converts this into alternating current (AC). In this way, you can simply use your self-generated solar energy in your home or feed it back into the electricity grid.

Which brands of solar panels does Beter Duurzaam currently recommend and install? Because we do not carry our own brands as installers, we constantly assess the best solar panels. At the moment we offer solar panels from the brands: AIKO, Niwa (from Jolywood) and SunPower.

#### The latest state of netting in the Netherlands [February 2024]

What is netting?

Netting is a term that has been frequently discussed in the Dutch energy market in recent years. It stands for settling the self-generated solar energy with the energy you purchase from the electricity grid. This is only available for small-scale users. This scheme has brought financial benefits to many people and has contributed to the growth of solar energy in the Netherlands.

What is the current state of netting?

Update 13 February 2024: The net metering scheme will remain in place for the time being (source: NOS).

The Senate has decided to postpone the regulation for solar power for a while. Minister Jetten actually wanted to stop giving money for solar panels from 2025, but the Senate does not agree. If you have or are going to purchase solar panels, you can still feed the excess power you generate back into the grid in the coming years and deduct it from your own consumption.

Am I a small-scale or large-scale user?

You are a small consumer if you have a connection up to a maximum of 3 x 80A (amps). You can check this with your grid operator or your energy supplier. This can also be stated on your electricity meter or in your energy contract.

Net metering scheme for small-scale consumers

At the moment, small-scale consumers can still benefit from netting. This means that the electricity you generate with solar panels is offset against the electricity you consume. If you generate more than you consume, the surplus will be offset against the electricity you consume later. This can result in significant additional savings on your energy bill.

Current netting policy, updated in 2024

Although netting is still possible, a change is planned. The net metering scheme was introduced almost twenty years ago to encourage the purchase of solar panels and has led to a rapid increase in solar panels in the Netherlands.

The last proposal - see below - has just been rebuffed by the Senate.

Phase-out as of 1 January 2025

The Dutch government has decided to phase out the net metering scheme from 2025, making 2024 the last year that households and small businesses can net 100%.

This means that from 2025 onwards, the percentage that can be netted will decrease every year, until it reaches 0% in 2031. It looks like this:

2023: 100%

2024: 100%

2025: 64%

2026: 64%

2027: 55%

2028: 46%

2029: 37%

2030: 28%

2031:0%

For those interested in sustainable solutions, this remains good news: due to the phasing out of the net metering scheme, subsidies for new heat pumps will be available through the Sustainable Energy Investment Subsidy (ISDE).

Is solar energy still interesting?

With current (2024) cost and the efficiency of solar panels, together with minimal feed-in tariffs, solar panels are a profitable investment even without this scheme.

It remains financially attractive to install solar panels, because you can still benefit from lower energy costs and the payback period remains fairly short. At the moment, the average payback period is about 5 years.

Because we only make premium solar panels available as Beter Duurzaam, you will benefit from the payback period for an extra long time. This is because the product warranty period is exceptionally long. Our conclusion: Even if netting is abolished, investing in solar panels will remain attractive.

#### Why are glass-foil panels banned?

Without many installers informing you, the Dutch solar panel market is facing an important transition: the shift from glass-foil to glass-glass solar panels. This has everything to do with the European policy to ban PFAS from products for health and environmental reasons.

Environmental impact of PFAS in Glass-Foil solar panels

80% of the 'old-fashioned' Glass-Foil panels contain PFAS in the backsheets. A backsheet is the bottom layer of a solar panel, which protects the panel from moisture, dust, and other weather conditions.

PFAS (Per- and polyfluoroalkyl substances) are chemical substances that are known for their harmful effects on both the environment and human health. Because 80% of the glass-foil panels contain PFAS, they are therefore associated with asbestos.

PFAS are persistent, accumulate in the environment, and are associated with health risks such as hormonal disruptions and certain types of cancer. The Netherlands is actively working on a ban on PFAS, which is expected to be submitted in 2025 and will also apply to solar panels.

Glass-Glass: A more sustainable alternative

In response to these environmental challenges, glass-glass solar panels offer a more sustainable alternative. These panels, free of PFAS, offer a longer lifespan and even better weather protection. This not only improves the performance and lifespan of the panels, but also reduces the environmental impact throughout their life cycle.

Glass-Glass seems more expensive, but it's not

The transition to glass-glass solar panels is not only an environmental issue, but is a smart idea anyway. Although the purchase cost can often be higher, glass-glass panels offer a better investment in the long run due to their longer lifespan and higher energy yield. In addition, opting for PFAS-free solar panels contributes to a circular economy and reduces the ecological footprint.

What can you do with the transition from Glass-Foil to Glass-Glass Panels

Many installation companies still have glass-foil solar panels lying around. It is important
that you are not misled and that you are offered these panels for a false discount. If you're
requesting multiple quotes, make sure you're comparing apples to apples. It's not that glass-

foil panels are worthless. However, they will soon no longer be allowed to be produced. Glass-glass panels are usually more expensive to buy, but because they last much longer, you will also benefit from them for much longer. At the end of the day, you'll be smarter and better off.

# Register your solar panels or other generation installations

Congratulations on the purchase of your solar panels, on behalf of Beter Duurzaam we wish you many sunny years! This guide will walk you through the energieleveren.nl sign-up process step-by-step. Have your quote ready, it will contain details you need to sign up.

# Step 1:

Go to www.energieleveren.nl Enter the postcode, house number and last 6 characters of your meter number. By clicking on the "i" next to the third field, you will get more information about where you can find this number

### Step 2:

Fill in your details, you will receive a link on your email address. Click on the link from your email and choose "solar panels".

# Step 3:

You register your solar panels or other electricity generators. To do this, you will need the following information.

Inverter power in kiloWatt: enter the inverter power here, this is usually the type number (so a SE/GW3600 = "3.6" and a SE6k = "6");

Enter the number of solar panels: you can find this on the quote;

Power per solar panel in watts peak: you can find this on quote;

Fill in the brand and type of your inverter, which you can find on your quote. (Your type may not be among the options. Then choose the option of which the first part does match. The difference lies in the execution of the same type and is therefore irrelevant)

Choose the right option for electricity storage installation, this is a battery.

In the date of commissioning, enter the date of tomorrow, this does not affect the registration. Click on "next", click the check mark next to "I declare to have filled in the above truthfully" Click on "Send"

Your application was successful, if you have any questions about this application, please feel free to contact us.

An overview of the best solar panels? We've got you covered!

What are the best solar panels? It's a question we get asked regularly at Beter Duurzaam. We would like to give an answer to it, but unfortunately there is no single answer. What the best solar panels are depends on the angle from which you look at it. For example, do you focus on reliability or peak power? On the warranty conditions or on the return? Fortunately, one thing is certain: with us you are assured of good and professional advice that suits your situation.

# What are the best solar panels?

To get an answer to this frequently asked question, it is good to keep a few things in mind. First of all, you can assess solar panels based on all kinds of criteria. For example, you can look at the peak power of solar panels, but also at the warranty conditions. And if you pay attention to the price, different panels come out on top than when you assess the return. In summary, what the best panels are depends on which criteria you find important.

The best solar panels in every situation

At Beter Duurzaam we are happy to help you with the solar panels that best suit your needs and consumption. In doing so, we not only look at your current energy consumption, but also at future developments. For example, are you planning to buy an electric car soon? Then we will take that into account. To help you in the best possible way, you will receive advice from us at your location. This is not only a lot more personal, but also helps us to get a clear picture of your situation.

Always assured of top quality

Whichever solar panels best suit your situation: we always guarantee top quality. Cheap often turns out to be expensive in this sector, which is why we only choose proven products from brands with perfect warranty conditions. It is not for nothing that we score perfectly when it comes to customer satisfaction, for example. We are also one of the few in our industry to

meet a number of very strict quality and safety criteria. Because quality and safety, that's what we stand for!

Schedule an appointment for tailor-made advice

Are you curious about which solar panels best suit your situation? Schedule a no-obligation appointment with our specialist. He will give you tailor-made advice, at your location! Would you like a sneak peek of the solar panels we can offer?

### ISDE subsidy for solar water heaters

Since January this year, citizens and entrepreneurs who want to generate sustainable energy in their homes or businesses have been able to apply for subsidies for solar boilers, heat pumps and pallet heaters. EUR 70 million will be made available for this purpose in the coming year.

Minister Henk Kamp (Economic Affairs): "Our energy supply is going to change in the coming years. In the future, Dutch homes and businesses will be heated less by gas and more by sustainable heat. In this way, energy can be saved and CO2 emissions can be reduced. It also significantly reduces household energy bills. The government wants to stimulate this development through this new subsidy scheme, among other things. In this way, the transition to a more sustainable energy supply can be made together with all Dutch people. The grant is available for a variety of devices. A solar water heater converts sunlight into heat to heat rooms or water. A solar water heater saves an average household around 130 euros per year on energy bills and costs between 2,000 and 5,000 euros. On average, a household can apply for a subsidy of  $\in$  650 for this, depending on the type of solar water heater. A heat pump is a device that extracts heat from the air, soil or groundwater and makes it suitable for heating rooms or water. Hybrid heat pumps are often used in existing homes, which are combined with central heating boilers. A hybrid heat pump saves an average household between 200 and 300 euros per year on energy bills and costs between 5,000 and 7,000 euros. A household can apply for a subsidy of up to 1,500 euros, depending on the type of heat pump.

Make sure you are well prepared and request a tailor-made quote from us.

Making money with solar panels: this is how it works and this is what you need

Making money with solar panels: it's a market that experts expect to grow explosively in the coming years. It is no coincidence that this innovation has already won the Best Innovation Award at Solar Solutions in Düsseldorf. But how does that work exactly? And what do you need for this smart way of energy management? The specialists at Beter Duurzaam are happy to help you become more sustainable. Carefree, safe, hassle-free and to your complete satisfaction!

Earn money with solar panels and a dynamic energy contract

Even now that the net metering scheme is being phased out, it is possible to earn money with the green electricity you generate. You can sell your own solar energy back! Both individuals and entrepreneurs can make use of this. The prerequisite is that you have the following five things:

Solar panels

A home battery

Dynamic energy contract

A smart meter

An AI algorithm

Fully automated earning with a Virtual Power Plant

Once you have these five things, you can start making money with your solar panels. You don't have to worry about that yourself: the Virtual Power Plant (VPP) does the work. This small box sits between the smart meter and the inverter. There, it monitors energy consumption very accurately, among other things.

But that's not all. The VPP also knows the weather forecast and keeps an eye on electricity prices. As a result, the VPP knows exactly when the inverter needs to charge or discharge your home battery. In this way, the VPP helps you earn money in a smart way with the green electricity generated by your solar panels.

In addition, the VPP reduces grid congestion and prevents peak loads on the grid. Everyone happy!

Ook geld verdienen met zonnepanelen

In Belgium and Germany, this system is already on the rise. This revenue model is also becoming increasingly interesting in the Netherlands, especially in view of the phasing out of the net metering scheme.

Do you also want to earn money with your solar panels and would you like more information about this system? Please contact the specialists at Beter Duurzaam. We are happy to advise you!

# Cleaning solar panels? Good idea! Here's how to do it.

Cleaning solar panels is an important form of maintenance that prevents the yield of your solar panels from decreasing. But how and when exactly do you do that without damaging your solar panels?

Six Guidelines When Cleaning Solar Panels

Solar panels capture sunlight best when they are completely clean. Regular maintenance and cleaning are therefore important to get the most out of your panels. However, it's important to know the best way to do that. Cleaning your solar panels at the wrong time or with inappropriate products can also cause damage to your panels. That's why we'd like to share some useful guidelines with you.

1. Check your solar panels regularly

By regularly checking your solar panels for dirt, dust, leaves, and other contaminants, you can see if cleaning is necessary.

2. Clean your panels at least once a year

In general, solar panels should be cleaned at least once a year. Under certain circumstances, for example in a dusty environment or if there is a lot of bird droppings on it, it may be necessary to do this more often.

3. Use water when cleaning your solar panels

In most cases, spraying your solar panels with water is enough to wash away the dirt. It is preferable to use distilled water or rainwater. This prevents stains that reduce the absorption of sunlight.

4. Avoid harsh detergents and abrasive materials

Is there stubborn dirt or grease on your solar panels? Then use a soft brush or sponge to gently clean your panels. Avoid harsh cleaning agents or abrasive materials, as they can damage your panels.

5. Choose the right time to clean your solar panels

Avoid cleaning the solar panels during the hottest hours of the day. This is because the water dries too quickly, which can leave stains. The best time to clean your panels is early in the morning or late in the afternoon, when the panels are not directly exposed to the sun.

6. Safety first

Always ensure your own safety when cleaning your solar panels. Therefore, avoid entering your roof or climbing your panels. Are you unsure of the correct safety procedures? Then consult a professional cleaning company that has experience in cleaning solar panels.

Manufacturer's specific recommendations

It may also be worth checking the manufacturer's recommendations for your specific solar panels. This is because maintenance requirements may vary from solar panel to solar panel based on the type of panel and location.

# Want to buy solar panels? Choose quality and safety and save!

Buying solar panels: more and more people and organizations are opting for them. And that's understandable, because with solar panels you save a lot on your energy costs. Moreover, solar energy is sustainable, and therefore good for the environment.

Do you also want to buy solar panels? Then you've come to the right place at Beter

Duurzaam:

Quality and safety guaranteed

Very high customer satisfaction

In-house team of experienced specialists

Expert and honest advice on location

Unburdening when applying for a subsidy

Everything under one roof for carefree sustainability

Why invest in solar panels?

Buying solar panels is a good investment in almost all cases. Especially in times when energy prices continue to rise, solar panels have a short payback period. The great thing about solar energy is that you can use it for all kinds of applications. We would like to list a few of them for you:

Becoming independent of the energy grid

Heating your home without gas

Charge your electric car at an affordable price

Buying solar panels to become independent

With solar panels, you generate your own sustainable energy. As a result, you are independent of the energy grid at times when your solar panels generate more energy than you consume. You can even store that surplus of generated energy in a home battery. This way you can continue to use your own solar energy in the evening and when the sun is not shining. Home batteries are available for both private and business use. A smart meter can give you insight into the required capacity of your home battery.

Buying solar panels for gas-free heating

If you opt for solar panels, you can also consider getting rid of gas. With the energy generated by your solar panels, you can also power your air conditioner or your heat pump.

These devices provide both cooling and heating your home or business premises.

Buying solar panels to charge your electric car

Have you already switched to an electric car or are you considering doing so in the future? With your own charging station in front of the door, you are not only always assured of a charging spot, but you also charge a lot cheaper than at public charging points. Especially when you use solar energy, you can charge your car very cheaply. Of course, this also applies to other electrical appliances.

Switch to solar energy too

Are you curious about how much you can save with solar panels? The specialists at Beter Duurzaam will be happy to calculate it for you. Please contact us for free advice.

# Saving energy at home

Saving energy at home without sacrificing living comfort, how do you do that? With energy prices at historically high levels, this question is on many people's minds. After all, reducing your energy consumption also means a lower energy bill, which is of course a nice bonus! Do you like that too, but could you use some help with this? The specialists at Beter Duurzaam have been helping people to make their homes more sustainable for years, carefree and to great satisfaction .

Comfortable, energy-efficient life

Saving energy at home is of course great for your energy bill. At the same time, you would like to maintain your living comfort. At Beter Duurzaam, we understand that. That's why it's good to know that you can also make your home more sustainable without compromising on comfort. This will help the environment and help you and you will benefit from a low energy bill. In addition to these benefits, making your home more sustainable and saving energy in your home is also good for:

A greener energy label

An increase in your home value

Reduced maintenance costs

Lower CO<sub>2</sub> emissions

Do these benefits sound like music to your ears? Then you are probably curious about the possibilities to make your home more sustainable and save energy. We'll take you through three of them.

Saving energy in your home with solar panels

Solar panels are one of the best-known solutions to save energy. With solar panels, you no longer have to obtain energy from the grid, but you generate your own electricity. With that power, you can just do everything you would otherwise do with power. Running your washing machine, charging your smartphone, refuelling your electric car: it's all possible. In

combination with a home battery, you can even become completely independent of the power grid.

Saving energy at home with a heat pump

Another solution to save energy is the heat pump. Such a heat pump consumes less or even no gas (like a central heating boiler), but electricity. You can generate that electricity yourself inexpensively by combining a heat pump and solar panels. Heat pumps are on the rise. In fact, many gas-free new-build homes are already equipped with a heat pump as standard. Heat pumps are also very suitable as an energy-saving solution for existing homes.

Saving energy at home with a solar water heater

As an alternative to the heat pump, there is also the solar water heater. The difference between a heat pump and a solar water heater is that the heat pump heats your home as well as the tap, bath and shower water, while the solar water heater only serves to heat that same water. To do this, such a solar water heater does not use gas, but sunlight. So you can also save a lot of energy with such a solar water heater.

Wondering how energy-efficient you can live?

Would you also like to save energy at home and are you curious about which measures best fit into your life? Please feel free to contact the specialists at Beter Duurzaam. With our clear vision on quality and safety, we are happy to help you limit your energy consumption without sacrificing comfort.

### Register your solar panels or other generation installations

Congratulations on the purchase of your solar panels, on behalf of Beter Duurzaam we wish you many sunny years! This guide will walk you through the energieleveren.nl sign-up process step-by-step. Have your quote ready, it will contain details you need to sign up.

Step 1:

Go to www.energieleveren.nl Enter the postcode, house number and last 6 characters of your meter number. By clicking on the "i" next to the third field, you will get more information about where you can find this number

Step 2:

Fill in your details, you will receive a link on your email address. Click on the link from your email and choose "solar panels".

Step 3:

You register your solar panels or other electricity generators. To do this, you will need the following information.

Inverter power in kiloWatt: enter the inverter power here, this is usually the type number (so a SE/GW3600 = "3.6" and a SE6k = "6");

Enter the number of solar panels: you can find this on the quote;

Power per solar panel in watts peak: you can find this on quote;

Fill in the brand and type of your inverter, which you can find on your quote. (Your type may not be among the options. Then choose the option of which the first part does match. The difference lies in the execution of the same type and is therefore irrelevant)

Choose the right option for electricity storage installation, this is a battery.

In the date of commissioning, enter the date of tomorrow, this does not affect the registration.

Click on "next", click the check mark next to "I declare that I have filled in the above truthfully"

Click on "Send"

Your application was successful, if you have any questions about this application, please feel free to contact us.

# Want to make smart use of the excess capacity of your solar panels?

Overcapacity of your solar panels: more and more people have to deal with it. With this generated, but unused energy, you can go in different directions. But what is the smartest way to use this energy surplus? We have listed the possibilities for you.

What is solar panel overcapacity?

More and more homes and organizations have solar panels on the roof to generate their own green energy. In itself, this is a positive development, but it can also lead to a surplus of solar energy. Overcapacity occurs when your solar panels generate more energy than you currently consume. This excess energy can be lost, but you can also use this energy efficiently.

Feeding back the excess capacity of your solar panels

One of the ways to deal with your excess solar energy is to feed it back into the grid. This is also known as netting. You will receive compensation for the energy you feed back into the grid. However, this net metering scheme is in jeopardy. There are even rumours that in the future you will have to pay for the feed-in of solar energy.

Storing the excess capacity of your solar panels

Fortunately, there are good alternatives to feeding in unused solar energy. One of the most interesting alternatives is to store your surplus solar energy in a home battery. You can still use this energy at a later time, for example during peak hours or when the sun has set. You don't have to draw energy from the electricity grid, which saves you a lot of money on your energy costs.

Off the gas

You can also use the excess capacity of your solar panels to get rid of gas. With the generated energy that you don't use, you can also power a heat pump. This allows you to heat and cool your home gas-free with the power from your solar panels.

**Charging Electrical Devices** 

In addition to your heat pump, you can also power other electrical appliances during the peak hours of your panels. With the help of smart devices and timers, you can, for example, charge your washing machine, your dishwasher or other electrical appliances when your solar panels generate a lot of energy. Of course, this also applies to charging your electric car.

Smart sustainability with Better Sustainability

Are you curious about the possibilities we offer to become more sustainable and carefree and smart? Please contact us for expert advice without obligation. Our specialists are happy to think along with you in high-quality and safe solutions for a lower energy bill and a sustainable future. That will make you happy!

# Bidirectional charging with your electric car? Discover the benefits!

Bidirectional charging is a revolutionary development in the generation, storage and use of energy from electric cars. Not only can you charge your electric car, but you can also feed energy back into the grid. Actually, you can charge your car in two directions. This opens up a world of possibilities and offers various advantages.

Your electric car as a socket

One of the main advantages of bidirectional charging is the ability to use an electric car as a power outlet. When the car is not in use, you can use the stored energy to power homes, buildings, or equipment. This reduces peak demand, so that the electricity grid remains in balance and energy is used more efficiently.

The financial benefit of bidirectional charging

A bidirectional charging system also has financial benefits. By feeding in excess energy at times when feed-in tariffs are favourable, you can use your EV as a revenue model. This will make the switch to an electric car more attractive.

Stability and security in the event of a power failure

Another important advantage of bidirectional charging is the ability to act as an emergency power supply. In the event of a power outage, an EV with a bidirectional charging system can provide electricity to a home or office, allowing essential devices to continue operating. This provides stability and security.

Bidirectional charging and the environment

Bidirectional charging also has a positive environmental impact. Storing energy from renewable sources in EVs and feeding them back into when needed will reduce the use of fossil fuels and promote the integration of renewable energy sources. This contributes to reducing CO2 emissions and building a greener, more sustainable future.

Bidirectional charging with your electric car

Are you considering switching to an electric car? Then it's good to know that not all cars already have a bidirectional charging system. Ask your dealer about this; He can tell you all about it. For more information about charging your electric car, feel free to contact Beter

Duurzaam. Our specialists are happy to think along with you about charging stations and other solutions.

# Using an electric car as a home battery: to do or not to do?

Using your electric car as a home battery. It sounds very interesting, but are you really doing the right thing, or is it better not to do it? First of all: there are advantages, but it also has disadvantages. We would like to list these for you, so that you can make a good decision. Using your electric car as a home battery

Electric driving is on the rise. At the beginning of this year, there were already more than 300,000 electric cars on Dutch roads. That number is only increasing, and that's understandable. An electric car does not emit any CO2 and the driving range (range) continues to increase. And if your electric car has the Vehicle-to-Home (V2H) function, you can also use it as a home battery.

How does V2H work exactly?

Vehicle-to-Home is a technology that allows you to charge your electric car and return the power from your car to your home. We also call this bidirectional charging. This can be very interesting financially, especially in combination with solar panels. After all, by running your electrical appliances on electricity from the car during peak hours, you don't have to buy expensive electricity. In addition, you prevent an overload of the electricity grid.

The disadvantages of using your electric car as a home battery

So using your electric car as a home battery can be very interesting. However, it also restricts your freedom of movement and requires good planning. Do you like the advantages of it, but would you like to be able to use your car at any time? Then a fixed home battery is a perfect alternative. This allows you to store energy cheaply that you can use again later, while at the same time your car remains available at all times.

Want to know more about the home battery?

Are you curious if such a home battery is something for you? Feel free to schedule a noobligation consultation with the specialists at Beter Duurzaam. We are happy to help you become more sustainable without any worries!

# ISDE subsidy for solar panels

The Sustainable Energy Investment Subsidy (ISDE) is a subsidy and allowance for the purchase of solar panels for companies. You can benefit from this, but there are conditions attached to this incentive.

The Sustainable Energy Investment Subsidy (ISDE) is a subsidy that the government has set up with the aim of reducing CO2 consumption in Dutch companies and households. Entrepreneurs or households can make use of this subsidy if funds are purchased for sustainable energy generation or savings. You may be eligible when sustainable devices such as solar panels are purchased. But solar water heaters, heat pumps and other sustainable devices may also be eligible for ISDE subsidies.

Conditions for ISDE subsidy for solar panels

Minister Wiebes has published the conditions that solar panels, wind turbines, heat networks and insulation measures must meet in order to be eligible for subsidy in 2021 through the ISDE subsidy scheme. An important condition is that the institutions are connected to a small-user connection of 3\*80 amps maximum and are therefore not eligible for the Sustainable Energy Transition Incentive Scheme (SDE++ subsidy).

A solar panel installation with a capacity of between 15 kilowatt peak (kWp) and a maximum of 100 kWp is eligible for the ISDE subsidy. A subsidy application will not be honoured if the electricity consumption of the business connection is less than 50,000 kilowatt hours. According to the minister, this will prevent overstimulation. If you have a company with lower energy consumption, solar panels are already financially profitable without this measure.

Applying for an ISDE subsidy for solar panels

Applying for an ISDE subsidy must be done in advance. You may only purchase the device after you have applied for the ISDE subsidy and received a reference number. Applications for this incentive measure will be processed in the order in which they are received. If the RVO approves your application, you will receive a decision by post. This will state the

amount you will receive. More than 90% of the requests are processed by the RVO within 8 weeks. Of course, we apply for this ISDE subsidy for our customers.

Amount of ISDE subsidy for solar panels

The amount of the ISDE subsidy is  $\in$ 125 per installed kilowatt peak (kWp). This means that a minimum of  $\in$ 1,857 and a maximum of  $\in$ 12,500 is available for each installation. A subsidy ceiling of  $\in$ 40 million has been set for the investment in installations for the production of renewable electricity via solar panels. Small wind turbines can also make use of this partial budget.

There are more measures that can contribute to the financial return of solar panels. Think of various tax benefits on solar panels. And for companies with a connection >3x80A or a large roof area, there is the Stimulation of Sustainable Energy Production (SDE++ subsidy). Do you have any questions, would you like to receive an offer or do you need tailor-made advice? Please feel free to contact us directly.

# Can I rent or lease solar panels?

There is a special scheme for individuals who want to borrow money for solar panels. This is SVN's sustainability loan. Special loan to borrow money There is a special scheme for individuals who want to borrow money for solar panels. This is SVN's sustainability loan. However, this loan is not available in every municipality or province. For example, you can apply for a sustainability loan in the Municipality of Apeldoorn for an interest rate of 1.6%. With an investment for 14 panels (approx. €5,000 excluding VAT), the savings per year are approximately €650. The solar power system would normally pay for itself in 7.8 years. How much will this loan cost me: The loan costs €640 over 8 years. This means that with a loan, you take an extra year before the system is repaid. The advantages of a loan are that there is money left over for other things, such as holidays or unexpected expenses. The downside of a loan is that it ends up costing money and some time for the paperwork. This is an incentive as loan interest rates are usually above 5% at the moment.

### Zonatlas, what is it?

With Zonatlas you can see whether your roof is suitable for solar panels in Apeldoorn, but also the rest of the Netherlands. Zonatlas has done this together with the municipalities in the Netherlands, in order to visualize all sunny roofs. All roofs in the Netherlands have been analyzed and per roof you can see for yourself how much energy you can generate with the sun!

You'll immediately see the following results:

Suitable surface

Maximum number of solar panels

Maximum power

With Zonatlas you also get information about the optimal size of an installation on your roof, the expected yield and the possibility of reducing CO2 emissions. Ask? We're here for you. Call us on 055 203 2146 or check out the contact page.

About Zonatlas

Zonatlas shows the suitability for the generation of solar energy for each roof surface within a municipality or province. By combining weather data, the incident solar radiation, the angle of inclination of the roofs and the shading situation, a very accurate indication of the suitability of the roof surfaces for solar energy generation can be given. Among other things, Zonatlas is made with the very detailed Current Height File of the Netherlands (AHN2) file of Rijkswaterstaat and the Water Boards. With this file, a 3D model was made of the entire municipality in combination with land registry data.

As a result, you no longer have to fill in data yourself, such as the angle of inclination of the roof, the location of the building in relation to the sun or the presence of objects that cause shadow. Zonatlas analyses and determines the solar radiation on each roof with an accuracy of half a square metre. For each roof, the payback period of an investment in solar panels has been calculated. The calculator automatically indicates for which part of the roof solar panels are most suitable.

Residents calculate with the most up-to-date data because the variables used to calculate the payback period are closely monitored. Zonatlas is interactive: a resident can adjust the

calculation themselves and make their own design of an installation and see the payback period. With Zonatlas, municipalities ensure that all residents have independent and highly accurate information about the solar power potential of their roof. Zonatlas and companies, how does it work? Zonatlas analyses for each roof in the municipality whether it is suitable for generating solar panels. This also applies to the roofs of, for example, flats, schools and businesses. However, the payback period of an investment in solar panels is calculated based on the conditions that apply to private homeowners with their own roof. As a company, you can also see how much solar power you can generate on the roof on Zonatlas. However, specific calculation rules apply to a company. If you have any questions about this, you can let us know via our contact page. Now you can easily check whether your roof is suitable for solar panels.

# Feed-in subsidy - transition to netting

For owners who already own solar panels, there will be a transitional arrangement from netting to the feed-in subsidy. But how does this work in practice and what does it mean? As soon as there is more news about the transitional arrangement, it will be announced here. It has been indicated that the payback period of solar panels must remain 7 years.

# Applying for a feed-in subsidy - how does it work?

To apply for a feed-in subsidy, there will be 1 counter at the Netherlands Enterprise Agency (RVO.nl) where households and businesses can apply for the feed-in subsidy. How the amount of power fed into the grid is measured, and what role the smart meter plays in this, is still being examined. The minister wants to have the proposal for the new feed-in subsidy ready this summer.

# What is a battery with a 1kW charging capacity?

The amount of energy that can be charged simultaneously is expressed in kilowatts (kW). One thousand watts is the energy needed to light a 1,000 watt lamp.

The inverter of a battery determines the amount of energy that can be charged simultaneously. Of course, this must be well coordinated with the technical specifications of the battery. The more charging capacity a battery has, the more power can be used from the battery at the same time.

# Feed-in subsidy - Why set up?

The reason for the introduction of the feed-in subsidy was expressed by the Minister in a letter to the House of Representatives on 15 June 2018, where he writes the following: The feed-in subsidy provides the best incentive to ensure that the solar panels (continue to) produce optimally. In contrast to an investment subsidy, a feed-in subsidy can shape a smooth transition for citizens and companies that have already invested in solar panels. In the past, the investment costs for solar panels were significantly higher than they are now. As a result, some existing production installations have not yet been recouped.

Discussions with parties and two broad stakeholder meetings show that the feed-in subsidy enjoys the greatest support among the parties involved, including the Dutch Association for Sustainable Energy (NVDE), Holland Solar, the Consumers' Association and the Homeowners' Association, among other things, because this variant ensures a gradual transition from netting and the alleged adverse effects of an investment subsidy on the market, such as stop and go effects, can be better prevented.

# What can you use an energy storage battery for?

Batteries or accumulators can be used for a variety of purposes and reasons. An overview of the possibilities: Necessary due to lack of required capacity of the electricity grid

Prevent reinforcement of a connection and additional costs

Be less dependent on the energy company Buying energy cheaply to avoid high energy prices, so-called timeshifting or loadshifting Trading on the imbalance market can be used for larger (>150kWh) systems TenneT helps to keep the energy grid at 50Hz, so-called frequency control, can be used with larger (>150kWh) systems. Do you have more questions about batteries or energy storage? Feel free to contact us.

# Do I need to insure my solar panels?

There are various types of solar panel insurance. For example, you can insure solar panels in the event of damage and for your own defect. The insurance coverage in the event of damage varies per insurer, so it is good to consult the insurer before purchasing solar panels.

Need to take out solar panel insurance

The need to install solar panels is always present, as it is part of your home or business premises. In the case of residential homes, most home insurance policies will include solar panels as standard in the package. Companies should always consult their insurer to ask if there are any additional requirements for the PV system. So be sure to contact your insurance agent by phone or e-mail.

Solar panel insurance costs

The amount of the insurance costs depends on the situation. If there are a lot of flammable materials stored in the building, or the solar panels are difficult to reach, the insurer may charge higher premiums. In a situation where many safety measures have already been taken and the value of the property and its contents is lower, there is a chance that the solar panels can be insured without an increase in premium.

Solar panel insurance requirements

The requirements for installing solar panels are included in various NEN standards. All new PV systems must meet these requirements, ask your installer whether the offered installation meets these requirements before you order a supplier.

Furthermore, it is always the case with companies that a delivery inspection must be done, usually by an independent party. In the case of companies, a construction calculation will always have to be carried out to demonstrate that the building can support the extra weight of the installation.

This is not the case with private individuals, but think carefully about the condition of the roof, how old is the roof, what materials were used in the construction and have extra items already been added after the construction of your home. A dormer window is extra added weight, can solar panels still be installed? Ask these questions to the installer, accepting a

quote without someone being on site to assess this kind of thing seems like a bad choice.

Insurers may impose additional requirements to insure the location, this does not happen as standard, but usually in special situations.

Examples of situations are:

Mandatory use of tight cable ducts

Installing inverters outside the building or on the roof

**Applying Surge Protection** 

Advice from insurers

Insurance companies often give advice if their customers intend to purchase solar panels.

These recommendations vary widely and often relate to the quality of the solar power system.

Advice from insurers can be converted into requirements in the future.

Frequently read advice is:

Use of glass – glass solar panels

Have your installation inspected by an independent agency

Do not install solar panels on combustible roofing

Always leave room for ventilation between the panels and the roof.

Create a separate, dust-free area (fire compartment) for the inverters

Opt for security systems such as Power Optimizers and SolarEdge.

Provide surge protection, adequate grounding, and external lightning protection.

Choose poorly flammable cabling with a thickness of 6mm or thicker

Attach the panels storm-proof (also think of windshields at the back)

Apply the procedure for fire hazard work, where necessary.

Insuring against consequential damage

In order to receive compensation in the event that consequential damage occurs, an additional policy is often required. Homeowners will not often choose to purchase these types of additional packages, but larger project developers often take out these types of policies to get more security. This additional policy can be taken out with a specialist insurer.

When taking out such an additional insurance product, you will receive coverage for loss of production, back-up of the warranty in the event of bankruptcy or compensation for

consequential damage Questions about insurance You may have questions about insurance for solar panels and how Beter Duurzaam deals with this.

Are you planning to have solar panels installed and don't know if the intended installation meets the requirements of your insurer? Contact us for advice or a quote for a solar power installation.

# What is the cost of solar panels?

In recent years, solar panels have emerged as a sustainable and cost-effective alternative to traditional energy sources. More and more people are considering switching to solar energy to not only help the environment but also to save costs in the long run. In this blog, we will take a closer look at the cost of solar panels so that you can make an informed decision about investing in this green energy source.

# Investment

The most obvious aspect of the cost of solar panels is the investment. These costs vary depending on several factors, including the size of your home, the type of solar panels, and the cost of installation. On average, you can count on an investment of  $\{4,000\}$  to  $\{10,000\}$  for an average installation

### Grants and financial incentives

To encourage the transition to renewable energy, the government offers subsidies and financial incentives for the installation of solar panels. These can significantly reduce costs and shorten the payback period. It is important to be aware of the grants available for your situation and to take advantage of this financial support.

# Payback

While the investment may seem high, it's important to consider the payback period. Solar panels generate electricity and thus reduce your energy bill. The average payback period for solar panels is between 7 and 12 years, depending on several factors. After this period, you'll enjoy free electricity, resulting in significant cost savings in the long run.

#### Maintenance costs

Another aspect of the cost of solar panels is the cost of maintenance. In general, solar panels require little maintenance. Regular cleaning and inspection are usually enough to maintain efficiency. Compared to the ongoing cost of traditional energy sources, the maintenance costs of solar panels are minimal.

#### Financial benefits

In addition to saving on energy bills, solar panels also offer financial benefits such as increasing the value of your home. A solar-powered property is more attractive on the market and can result in a higher selling price.

# Feed-in subsidy - how does it work?

Feed-in subsidy explanation

The new feed-in subsidy scheme starts on 1 January 2021 and will be opened annually for new applications as long as the payback period for solar panels without incentive is still well above 7 years.

The subsidy scheme is open to citizens and companies with a small-scale consumer connection that feed self-produced renewable electricity into the electricity grid. The scheme therefore also applies to renewable energy sources other than solar energy, such as wind energy.

From 2020, the feed-in subsidy will also apply to citizens and businesses that have already invested in solar panels and are now making use of the net metering scheme. A transitional arrangement will be designed for this group.

The feed-in subsidy only applies to the renewable electricity imported into the electricity grid and therefore not to the direct self-consumption behind the connection. After 2020, small-scale consumers will not pay energy tax and ODE on the self-generated renewable electricity that citizens and businesses consume directly or store behind the connection.

Each year, a subsidy ceiling is set in advance and covered within the budget of the Ministry of Economic Affairs and Climate Policy. In doing so, the government wants to set up the scheme in a cost-effective way to prevent overstimulation.

According to the draft Climate Agreement, important principles for the follow-up of the net metering scheme are:

An average payback period of approximately 7 years for a representative reference case and the most cost-efficient solar panels available on the market.

For citizens and companies that have already invested in solar panels, there will be a smooth transition.

Small-scale consumers will continue to pay no energy tax, VAT and renewable energy surcharge (ODE) on the self-generated renewable electricity that citizens and businesses consume directly or store directly behind the connection.

# What is a string inverter?

Welcome to our comprehensive guide on string inverters! If you're interested in optimizing your solar energy system, then a string inverter is an essential component you'll need. In this text, we will explain how a string inverter works and answer some of the most frequently asked questions to help you find all the necessary information.

First of all, a remark for clarity. A string inverter is more popularly known as a "regular inverter". Some brands, such as SolarEdge, have even more options. They then have a so-called microinverter behind each solar panel.

What is a string inverter and how does it work?

A string inverter is a device used in solar energy systems to convert the direct current (DC) produced by the solar panels into alternating current (AC) suitable for use in home appliances and the power grid. It works by connecting multiple solar panels in series (in a "string") to the inverter. The string inverter then converts the combined DC energy into usable AC energy.

What are the advantages of a string inverter?

The biggest advantage of a string inverter is its price. Because the technology has been fully developed, these costs are no longer passed on. In addition, most of the components of these inverters are produced in low-wage countries, which means that the cost of labor is low. The cost of an inverter varies due to the size of the system. Usually, systems on which more than

thirteen solar panels are installed are equipped with an extra mpp tracker. With a SolarEdge system, the mpp tracker is located directly under the solar panels, in the optimizer.

What are the disadvantages of a string inverter?

The main disadvantage of a string inverter is that the performance of the entire string depends on the least performing panel. Shadow, dirt, or defects in one panel can reduce the yield of the entire string. In addition, a string inverter can be a limiting factor for system expansion, as the maximum input voltage of the inverter must be taken into account.

Which inverter is best for my solar panels?

Actually, the question should be: "which inverter best suits my roof situation?". The choice of an inverter depends entirely on your situation and the power you want to install. With most string inverters, you can opt for an extra mpp tracker. This tracker ensures that you can still use two roof surfaces with different locations on this inverter. An extra mpp tracker is also desirable in situations where shadow falls on some of the solar panels. When choosing an inverter, you should also pay attention to the power of the system. In the Netherlands, an inverter can have up to 15% more power than the datasheet indicates. This is because we never have the ideal conditions and the solar panels never reach the wp power they could reach. In many cases, a SolarEdge inverter can be subjected to heavier loads.

How can I see what my solar panels are generating?

Most string inverters have a simple built-in monitoring system. You don't pay anything extra for this monitoring for smaller installations. This function regularly connects to the internet and then transmits the values of the system at that moment. You can then read this via your PC. It is also possible to download an app so that you can read what the monitoring portal indicates anywhere. A disadvantage is that it is often not real-time monitoring, but snapshots that are linked to each other. When there is no internet, it often seems as if no power is being generated. SolarEdge has module-level monitoring.

How much warranty do I get on my inverter?

The string inverter's warranty is usually between 5 or 10 years. The remarkable thing is that most German suppliers keep a warranty period of 5 years, while these inverters are more expensive. The largest of the oriental brands have a 10-year warranty. There is a lot of

discussion about the lifespan of a string inverter, but in most cases it is 8 to 12 years. You can buy a warranty from most German string inverter manufacturers. But the question is whether this extra warranty is sufficient and whether the supplier still exists to be able to carry out the warranty. The standard warranty of a SolarEdge inverter is 12 years, because this inverter is much less heavily loaded.

What should I pay attention to when installing an inverter?

When installing an inverter, you should pay particular attention to safety. Many things that are mandatory abroad are not yet applied in the Netherlands because the regulations on this are lacking. The installation of an isolating switch is not mandatory, but it is desirable. This allows you to turn off the power from the fuse box. Earthing a solar power system is also highly desirable, but unfortunately not yet carried out by all installers. By grounding a system, the aging of solar panels will be much slower. Most string inverters have a built-in switch to turn off the voltage coming from the solar panels to the inverter, note: a string inverter will always have a high voltage on the cables. With SolarEdge, the optimizer causes the voltage on the cable to be much lower when they are disconnected from the inverter. What should I do if I suffer from shade?

Roofs that are shaded by trees, buildings in the area, a chimney or dormer window are not necessarily unsuitable for a string inverter. This is because it is possible to work with multiple mpp trackers. However, if a solar panel in a string is partly shaded, this will negatively affect the yield of all solar panels in this string. The choice is then whether you accept this loss or whether you opt for a higher investment and a higher return. In this case, we would recommend SolarEdge .

# Why do people buy solar panels?

The main reasons to think about purchasing solar panels include the points below. Solar panels contribute to a better climate. Most of the requests we receive come from the fact that people want to contribute to a better climate. It is therefore primarily a contribution to reducing the burden on the environment. As a result, it is mainly the available budget that is leading in the question: "How many solar panels do I need?" With 8 solar panels, you can

save 1,900kWh per year, which is more than half of the consumption of an average household.

Solar panels as an example: Another reason to purchase solar panels is to be an example. Schools, municipalities and families often choose to set a standard for future generations. We no longer live in a world where raw materials are plentiful. In order to be able to enjoy the earth from generation to generation, we will have to redefine where we get our energy from. Solar panels are an attractive investment: Solar panels are currently the most attractive investment of your money, according to research. The certainty of a good return is high. Given the average increase in energy prices over the past few years, this is expected to remain the case.

Solar panels increase the value of your home: Solar panels increase the value of the home and improve the energy label at the same time. It has been proven that houses with a better energy label are sold faster and because the monthly costs of a house with solar panels are lower, this is also a reason for a buyer to pay more for your home.

Solar panels make you more independent: In principle, the Dutch energy grid is fine, but if there is a long period of power failure, you can always connect your solar panels to a battery. This way, you will have electricity even in times of power failure. In addition, you are more independent of the vicissitudes of the energy companies.

Solar panels are reliable: In general, solar panels last a long time. Solar panels are reliable products that hardly age or deteriorate. So the lifespan is also a good reason to consider solar panels.

# What types of solar panels are there?

As a supplier of solar panels in Apeldoorn, this is the question that is always asked in the conversation on location, When answering this question, one should always ask questions to the client. A large part of the choice for solar panels lies with you.

There are various brands and qualities when it comes to solar panels. For example, there is the possibility to choose European solar panels, such as brands such as SolarWatt or Sunpower. Or you can choose a producer from the Far East. The most well-known solar

panel manufacturers from the region of China are JA solar, Trina and Talesun. Of the thinfilm solar panels, SolarFrontier is the most well-known manufacturer. Of course, there are many more brands and new manufacturers are still being added. We can supply you with all the brands mentioned above. Which solar panel is best for my roof?

Actually, this also depends entirely on a number of factors. This is because the reason people purchase solar panels can be different. Also, everyone's tastes are different. So the questions you need to ask are: What is the reason I want solar panels?

How much energy do I want to generate?

How important is the appearance of my system?

Where do I want to have my solar panels installed?

What are the most common solar panels?

### The Polycrystalline Solar Panel

This is a solar panel with often a blue cell, a blank frame and a white background. This type of solar panel is most commonly used for large business projects with SDE subsidies, flat roofs and for people where the appearance of the solar panel is not important. In short, if you are looking for a reasonably priced solar panel, this type is definitely well spent on you. Please note, the quality of these solar panels does not differ from the other types of solar panels. Guarantees and returns in the longer term and are the same. The best suppliers provide this type of solar panel.

# The Monocrystalline Solar Panel

This is a solar panel which is characterized by a dark color cell. Many providers call it a "black solar cell" or an "all black cell" but in reality it is a very dark blue color, almost indistinguishable from black. This is also the main reason why people choose this solar cell. By combining the cell with a black frame and a black background, it is aesthetically a beautiful panel to look at. In addition, the monocrystalline cell can deliver a higher power than the previously mentioned polycrystalline cell.

# The thin film solar panel

This solar panel looks like it's one big cell. This is not entirely correct, but consists of a lot of small cells that are very close to each other. As a result, no conductors can be seen in the

solar panel and it is a very nice solar panel. The characteristic of this type of solar cell is that the size often differs from the previously mentioned solar panels. The SolarFrontier solar panels have a size of 1.00 x 1.25 meters, which sometimes makes it look better on a roof with, for example, a skylight. In addition, the solar panel performs better in worse conditions than a poly- or monocrystalline solar panel. The power of a SolarFrontier solar panel is 170 watts peak per panel.

# How efficient is a solar panel?

Not all sunlight shining on a solar panel can be converted into energy. The amount of light that can be converted is expressed in percentages. The higher the percentage, the more efficient solar panels are. What does the efficiency of a solar panel mean? Solar panels are tested for efficiency when they leave the factory. This is done by releasing a constantly equal beam of light on the solar panel. This light beam has a power of 1,000 watts per m². If the solar panel then delivers a power of 100 watts per m², the panel has an efficiency of 10%. With most solar panels, the efficiency is between 16 and 20 percent. This means that a 1m² solar panel delivers between 160 and 200 watts. The surface area of a standard solar panel is 1.65m², so the solar panels have a maximum capacity of 265 - 330 watts.

# What is the price of a solar panel?

The transition to solar energy is becoming increasingly attractive to homeowners and businesses alike, driven by the promise of renewable energy and lower energy costs. One of the first questions that comes to mind when considering solar energy is: what is the price of a solar panel? In this blog, we'll dive into the world of solar panel prices and explore the factors that influence costs.

# Type of solar panel

The price of solar panels is heavily influenced by the type of panel you choose.

Monocrystalline solar panels are known for their high efficiency and aesthetically pleasing appearance, but they are often more expensive than polycrystalline panels. Thin-film solar panels can be a more cost-effective option, although they are generally less efficient.

# Capacity and power

Solar panels are rated on their power, expressed in watts (W) or kilowatts (kW). The higher the power of the solar panel, the more energy it can generate. However, higher power can also increase the price. It is important to find a balance between the energy needs of your household and the available budget.

# **Brand and quality**

Prices vary between different brands and the quality of solar panels. Reputable brands with proven performance and long-term warranties often come with a higher price tag. However, it is important to invest in quality to ensure the sustainability and efficiency of your solar energy system.

### **Installation costs**

In addition to the cost of the solar panels themselves, you have to take into account the installation costs. This includes labor costs, mounting hardware, inverters, cabling, and any permit fees. It is advisable to compare quotes from different installers to find the most cost-efficient installation.

**Subsidies :** In the Netherlands, there are a number of subsidies and schemes to make the purchase price a little more attractive. Contact us to find out what is possible in your situation.

# Warranties and longevity

When comparing prices, also pay attention to the warranty conditions and the estimated lifespan of the solar panels. While solar panels often come with a 20- to 25-year warranty, the quality and durability can vary between different brands.

# My inverter is broken, what should I do?

Although solar energy systems are known for their durability, even the most reliable components can sometimes fail. If you discover that your inverter is broken, it can cause some worries for a while. Don't panic! In this blog, we will discuss what to do if you are confronted with a broken inverter and how you can quickly enjoy the benefits of your solar energy system again.

# **Identify the problem**

Before you take any action, it's important to identify the problem. Check if the inverter displays error codes or lights on. Refer to the inverter manual for specific information on the meaning of these codes. Identifying the problem is the first step towards a solution.

Refer to the warranty

Check if the inverter is still under warranty. Manufacturers often offer warranties that range from 5 to 10 years. If your inverter is still within the warranty period, contact the manufacturer or installer to report the problem and inquire about possible replacement or repair.

#### **Contact Us**

If your solar panel system was installed by us, please contact us. We have experience in troubleshooting inverters and can fix them quickly and efficiently.

Consider a new inverter

If the inverter is out of warranty or if the cost of repair is high, consider purchasing a new inverter. Modern inverters are often more efficient and reliable, which can result in long-term benefits and energy savings.

Replacement Cost and Installation

Before purchasing a new inverter, it's important to consider the cost of replacement and installation. Compare prices of different models and brands, and request quotes from installers to find the most cost-efficient solution.

Considering sustainable options

When choosing a new inverter, consider sustainable options as well. Some modern inverters are designed with energy efficiency and environmental friendliness in mind. They can include additional features such as advanced monitoring and reporting, giving you more control over your solar energy system.

Most inverters have a warranty of 5 to 10 years. This warranty is given by the manufacturer of the inverter. Subsequently, the supplier who supplied your solar panels is the point of contact for warranties. The supplier is the one from whom you have received an invoice. In the case of defective inverters, installers often ask for a serial number of the defective device.

This can be found on a sticker placed on the inverter. If the supplier of your inverter no longer exists, you can usually contact someone else. However, keep in mind that he will charge hours for replacing the device and requesting a replacement.

# What is the lifespan of an inverter?

The average lifespan of an inverter is 8 - 10 years. It is often possible to purchase additional warranty. The costs for this warranty extension are often high. There are manufacturers who give a standard warranty of more than 12 years on their products, but the question is whether they still exist at the end of this period. Keep this in mind when making your choice.

### How much does an inverter cost?

Transitioning to solar energy is not only an environmentally conscious choice, but it can also be a smart investment for the long term. One of the crucial components of a solar energy system is the inverter, which is responsible for converting generated direct current into usable alternating current. But what is the price tag of this key component? Let's take a look at the factors that affect the cost of an inverter.

# **Inverter Type**

The first and most determining aspect of the cost of an inverter is its type. There are several types of inverters available, including string inverters, microinverters, and power optimizers. Microinverters and power optimizers often have a higher price per unit compared to string inverters, but offer certain advantages, such as individual panel monitoring and better performance in shading.

# Capacity and power

The size of the solar energy system and the power you need will also determine the capacity of the inverter you need to install. Larger systems require more powerful inverters, which can increase costs. It is important to choose an inverter that is well matched to the capacity of your solar panels.

Brand and quality

# How much money do solar panels save?

What you save with solar panels depends on the amount of power you use. Standing charges and administration costs are items that must also be paid after the purchase of solar panels. The electricity you pay is divided into a number of things.

Solar panels save on delivery rate

The supply tariff is what you pay to the energy company. This, along with the administration fee, is also the only thing you can negotiate. If discounts are offered by energy providers, these discounts usually only apply to this rate. The delivery rate you pay can be found on your annual accounts and on your contract. Usually, this is between four and five cents per kilowatt hour.

Solar panels save energy tax

Energy tax is the largest part of the cost of energy. Energy tax is a tax that has been "tiered". This means that different rates apply to different quantities. For example, electricity customers pay more energy tax on the first ten thousand kilowatt hours (kWh) than on the forty thousand kWh that follow. If you use more than fifty thousand kWh per year, you pay very little energy tax on this electricity. As a result, most households have a much higher cost of electricity than most businesses.

Solar panels save on storage of renewable energy

The renewable energy surcharge is a tax that, like the Energy Tax, has been built up in stages. However, here it is not the case that the larger consumers pay more than the small consumers. The renewable energy surcharge can be found on your annual overview. This is usually an amount lower than one cent per kilowatt hour.

Solar panels provide energy tax refund

All individuals and companies in the Netherlands receive a fixed amount per month in energy tax. This is an amount that is calculated per day and this is separate from the consumption. If you purchase solar panels, you will still receive this amount of Energy Tax back. As a result, in some cases it can happen that you get back more than you pay.

Solar panels refund VAT

The VAT on the purchase of solar panels is set at twenty-one percent. Private individuals who purchase solar panels are entitled to a refund of the VAT on the purchase of solar panels. From 1 January 2023, VAT on the purchase of solar panels will even expire. If you want to know what you can save with solar panels, send us your wand we will explain.

Different brands offer inverters of varying quality and reliability. Opting for a reputable brand with a proven track record may result in a higher initial investment, but it may be worth it in the long run in terms of performance and durability.

# **Installation costs**

In addition to the cost of the inverter itself, you also have to take into account the installation costs. This includes labor hours, material costs, and any additional necessities such as cabling and mounting hardware. It is advisable to compare quotes from different installers to find the most cost-efficient option.

# Warranty & Service

The warranty period and the service offered by the manufacturer will also affect the cost. Inverters with a longer warranty period generally have a higher initial price, but they can save costs in the long run by covering potential repairs.

The price of an inverter depends on the capacity the inverter can handle, the quality of the inverter, and the warranty period. The cost for an inverter with a PV system is usually 15 - 20% of the total cost of a solar project.

#### What other functions does an inverter have?

In the world of solar energy, the inverter acts as a true wizard's tool, converting the direct current (DC) generated by solar panels into the usable alternating current (AC) for our household appliances. But what makes these inverters truly magical? Let's dive into the essential features that make these devices the linchpin of solar energy systems.

### DC-to-AC c conversion

The core function of a solar panel inverter is to convert the direct current (DC) generated by the solar panels into the alternating current (AC) used in homes and businesses. This transformation makes it possible to seamlessly integrate solar energy into the regular electricity grid.

Maximum power point tracking (MPPT)

Inverters are equipped with advanced technologies such as Maximum Power Point Tracking (MPPT) to get the maximum power from solar panels, even under varying conditions such as shade or changing light incidence. MPPT ensures that the inverter always operates at the point where the panels generate the most power.

Data monitoring and communication

Modern inverters often offer the possibility of data monitoring and communication. This allows users to track real-time performance data of their solar power system, including energy production, system performance, and error messages. Some inverters can even connect to online platforms for comprehensive analytics. Safety & Security Safety is paramount, and inverters are designed with safety features such as surge protection and short-circuit protection. These built-in features ensure that the system continues to function safely, even under unforeseen circumstances.

Sustainable design and efficiency

Efficiency is crucial to the performance of a solar energy system. High-quality inverters have high efficiency in converting solar energy, resulting in less energy loss during the conversion process. Additionally, they are often designed with durable materials and ventilation systems to ensure a long lifespan.

# Quiet operation

Inverters work silently, so they don't add disturbing noises to your living or working environment. This adds to the comfort of a solar power system, making it an unobtrusive, yet effective source of energy.

Whether you're a beginner in the world of solar energy or a seasoned green energy enthusiast, understanding the functions of an inverter is essential. From the fundamental DC-to-AC conversion to advanced technologies such as MPPT and data monitoring, these features make inverters the key to unlocking the full power of solar energy. When choosing an inverter, it is important to consider these features in order to build a system that is not only efficient, but

also reliable and durable. We are happy to teach you everything. Please contact us for any other questions or if you would like to request a quote.

# What is the best solar power system for me?

Each situation for solar panels should be assessed separately. Personal preferences in appearance and quality, roof area limitations, budget, consumption or connection are all reasons to have an advisor look at your own situation. Is there shade on your roof, are there many birds in your area, how long do you want to stay at your current location.... These are all questions that need to be discussed when it comes to good advice in the field of solar panels.

Solar panels are the backbone of renewable energy, allowing individuals and businesses to reduce their carbon footprint. When considering solar panels, it's essential to make the right choice based on your specific needs. In this blog, we will discuss the different aspects of solar panels so that you can make an informed decision for your sustainable energy future.

Monocrystalline Solar Panels

Monocrystalline solar panels are made from a single crystal structure and are known for their efficiency and durability. They take up less space and generally perform better in low-light conditions. These panels are ideal for people with limited roof space who still strive for high efficiency.

Polycrystalline Solar Panels

Polycrystalline solar panels consist of multiple crystals and have a characteristic bluish appearance. Although they are generally a little less efficient than monocrystalline panels, they are more cost-effective. Polycrystalline solar panels are suitable for people who are looking for a balance between performance and budget.

Thin Film Solar Panels

Thin-film solar panels are lightweight and flexible, making them versatile in installation options. They perform well at high temperatures but generally have lower efficiency compared to crystalline panels. These panels are suitable for applications where flexibility and lightweight are more important than maximum efficiency.

### **Bifacial Solar Panels**

Bifacial solar panels have the ability to capture sunlight on both sides of the panel, allowing them to gain additional efficiency by reflecting off surfaces such as roofs. These panels are suitable for installations with an open space and reflective surfaces, making them an interesting option for certain environments.

When choosing solar panels, it's important to consider your energy needs, available space, and budget. Monocrystalline panels offer high efficiency and are suitable for limited space, while polycrystalline panels are a cost-effective solution. Thin-film solar panels offer flexibility and lightweight options, and bifacial panels can provide additional efficiency in specific environments. Take the time to consider your options and choose the solar panels that best suit your renewable energy goals.

# Where should I put an inverter?

Solar energy is a sustainable and environmentally friendly source of electricity, and more and more people are choosing to install solar panels on their homes. In addition to the solar panels themselves, the inverter plays a crucial role in maximizing yield. In this blog, we will take a closer look at the best location for installing an inverter so that you can get the most out of your solar panels.

Proximity to the solar panels

One of the most important considerations when placing the inverter is the distance from the solar panels. Choose a location that is as close to the panels as possible to minimize energy loss. A short cable length reduces the risk of power loss and ensures that the electricity generated is efficiently converted.

# Weather protection

Solar panel inverters are designed to be installed outdoors, but it is essential to protect them from extreme weather conditions. It is best to place the inverter in a sheltered location, such as on the wall of a building, under a shelter or in a weatherproof enclosure. This protects the inverter from rain, snow, and direct sun exposure, which improves its lifespan.

#### Good ventilation

Inverters generate heat during the conversion process from direct current to alternating current. Therefore, make sure there is sufficient ventilation around the inverter to prevent overheating. Install the inverter in a location where natural airflow is possible, or consider using a ventilation system to ensure optimal operation.

Easy access and maintenance

It is important to check and maintain the inverter regularly. Therefore, choose a location that is easily accessible for inspections and any repairs. Avoid placing the inverter in hard-to-reach areas or at heights where special equipment is required for maintenance.

Minimal Exposure to Electromagnetic Interference (EMI)

Electromagnetic interference may affect the performance of the inverter. Place the inverter in a location where EMI exposure is minimal. For example, avoid placing it near large electronic devices or high-power electrical systems.

Choosing the right location for your solar panel inverter is critical to optimizing the performance of your solar power system. By considering factors such as distance from the solar panels, weather protection, good ventilation, easy access, and minimal exposure to EMI, you can ensure that your solar energy investment yields optimal returns. Take the time to choose the ideal spot for your inverter and enjoy the benefits of clean, sustainable energy. Would you like to know more about this or would you like to request a quote? Please contact us and a specialist will explain everything to you.

## Ensuring the fire safety of your solar panels: this is how you do it

The fire safety of solar panels has been in the spotlight a lot lately. Unfortunately, this is desperately needed, because there are still many installers who do not take safety very seriously. At Beter Duurzaam, we attach great importance to this. That's why we'd like to share four tips with you to ensure the fire safety of your solar panels.

Carefree sustainability according to strict safety requirements

If you want to make your home or business premises more sustainable, you don't want to worry about important aspects such as fire safety. At Beter Duurzaam, we understand that. That's why quality and safety are our top priority. We don't just say that, we act on it. For

example, we apply strict guidelines, also when it comes to the fire safety of your solar panels.

For example, our installations comply with the strict NEN 1010 and NEN 3140 guidelines.

More information about safety can be found on the page about our certificates.

Four tips for the fire safety of your solar panels

Did you know that you can also do a lot about the fire safety of your solar panels? We would like to help you on your way with these four tips:

### 1. Choose a reliable installer

For example, the advisors of Beter Duurzaam will visit you at your location in advance to properly assess your situation. In this way, we can optimally guarantee the safety of your installation.2. Where exactly do you place what

Place the inverter on a fireproof background (e.g. stone or plaster). Do not place items within 50 cm of the inverter so that the inverter can get rid of its heat properly.

3. Make sure your solar panels and inverter are properly maintained every season Proper maintenance is not only important for the efficiency, but also for the fire safety of your solar panels.

## 4. Veiligheid voor alles!

Zonnepanelen leveren je veel op, maar zijn nooit volledig zonder gevaar. Hoor je iets verdachts of twijfel je aan de veiligheid? Schakel dan je zonnepanelen uit en bel je installateur.

Bekijk ook de checklist van de Brandweer en ontdek hoe je op een veilige manier optimaal rendement uit je zonnepanelen haalt.

Want to know more about the fire safety of solar panels?

Are you curious about how we invest in safety at Beter Duurzaam? Our specialists will be happy to tell you. Feel free to contact us for a personal consultation, so that you can enjoy your solar panels carefree.

## The construction calculation for your solar panels: don't forget it!

Performing a structural calculation is crucial for safety when installing solar panels. After all, as far as we are concerned, safety comes first, always! In doing so, it is important to not only meet the requirements of your insurer, but also the building regulations and building standards. After all, your roof must be able to safely support the extra weight of the panels.

Therefore, carry out a thorough construction calculation in good time.

What does a structural calculation say for solar panels?

A structural calculation assesses both the load-bearing capacity and the stability of the existing roof structure. Such a calculation checks whether your roof is suitable to support the weight of the solar panels. Because safety is so important, it is essential to use an experienced and qualified structural engineer to carry out this calculation. His detailed analysis concludes whether the extra weight of the solar panels could cause any problems.

Share the installation plan with your structural engineer

To ensure that the construction calculation for your solar panels runs smoothly, we advise you to provide the structural engineer with an installation plan. This installation plan provides insight into the intended placement and weight of the panels. Based on this, the structural engineer can accurately assess whether the existing roof structure can support the intended weight. Is the initial weight not feasible? Then the structural engineer can advise you on the maximum permissible weight that can safely be placed on the roof.

Point loads in the construction calculation for your solar panels

In addition to the final weight of the completed solar panel system, it is also important to take into account temporary, but heavier point loads during the installation phase. Think, for example, of pallets with tiles, tools and other materials that are on the roof during the assembly period. It is advisable to have a detailed structural calculation for these temporary weights as well. This helps determine the optimal placement of these materials. This allows you to evenly distribute the load on the roof and ensure stability.

Tips for the construction calculation for your solar panels

Good preparation is half the battle. Therefore, pay maximum attention to the construction calculation from the start. In addition, strictly comply with the safety requirements. This not

only minimizes the risk of delays in the project, but also ensures roof stability. Don't forget that a safe, stable construction is crucial for a successful installation and optimally functioning solar panels. Therefore, choose an experienced constructor who is familiar with the specific requirements for solar panels.

Would you also like to have a structural calculation made?

Contact us to take the right safety measures for your solar panel installation. The specialists at Beter Duurzaam are happy to help you!.

## How much does it cost to make your home more sustainable?

Making your home more sustainable is not only good for the environment, but it can also offer numerous benefits for you as a homeowner. Think of lower energy bills, improved living comfort and even an increase in the value of your home. But we understand that the process of sustainability can also raise questions, especially about the costs involved.

Solar panels

Solar panels have gained huge popularity in recent years, and for good reason. By taking advantage of the endless source of energy provided by the sun, solar panels can generate electricity without harmful greenhouse gas emissions. This generated electricity can then be used to power your home, reducing your reliance on fossil fuels and reducing your energy bills.

An added benefit of solar panels is that they can be installed on different types of roofs, ranging from pitched roofs to flat roofs. Additionally, modern solar panels are aesthetically pleasing and can increase the value of your home. With a lifespan of 25 years or more, solar panels are an investment that more than pays for itself.

## Heat pump

In addition to generating electricity, heating and cooling our homes is another important energy challenge. Traditional fossil fuel-based heating systems are not only harmful to the environment, but also costly to operate. This is where heat pumps come into the picture as a sustainable alternative.

A heat pump uses heat from the ambient air, groundwater or soil to heat your home in the winter and cool it in the summer. Because they use only a fraction of the energy required by traditional heating systems, heat pumps can make significant savings on your energy bills. Additionally, heat pumps are highly efficient, making them an eco-friendly choice for heating and cooling your home.

subsidies

There are several subsidy options available for investments in solar panels and heat pumps, which lowers the threshold to make sustainable upgrades for homeowners.

For solar panels, for example, private individuals no longer have to pay VAT on their purchase and installation. This significantly reduces the initial cost. In addition, there is the net metering scheme, whereby households are allowed to feed the energy they generate with their solar panels back into the electricity grid and receive compensation for this. This scheme makes investing in solar panels more financially attractive.

For heat pumps, there is the Sustainable Energy Investment Subsidy (ISDE). This subsidy encourages the purchase of heat pumps by individuals and companies by giving back part of the investment costs. This lowers the threshold for switching to this environmentally friendly heating solution and makes sustainable choices more financially feasible.

Indication of total investment

Om een beeld te geven van de totale kosten die het verduurzamen van je woning met zich meebrengt, schetsen we hieronder een voorbeeldcase - van indicatieve bedragen - met de volgende uitgangspunten:

Eengezinswoning

12 zonnepanelen (incl. arbeid, optimizers en werkzaamheden aan de meterkast)

Heat pump Hybrid and all-electric (incl. guidance on applying for ISDE subsidy)

12 solar panels € 6,500

heat pump hybrid € 10,500-----

ISDE subsidy € 2,850

Total € 14,150 (\*or monthly € 122.40)

12 solar panels € 6,500

Heat pump all-electric € 13,000

-----

ISDE subsidy € 3,375

Total € 16,125 (\*or monthly €139.48)

\* Save more than you finance, indication based on 3.8% interest. We also offer the option of interest-free financing. Feel free to contact our advisors to discuss the various financing options.

## Recycling solar panels, how does it work?

Solar panels, the shiny miracle panels that help us generate greener energy and reduce our electricity bills. But what actually happens to those panels when they reach the end of their lifespan? Well, let's dive into the world of solar panel recycling!

First, let's take a look at what a solar panel actually is. It's not just a simple piece of glass with some electrical gadgets underneath. No, no, it's a masterpiece of engineering! A typical solar panel consists of a number of components. Namely:

Solar cells: Of course, you have the solar cells, usually made of silicon, which convert the sunlight into electricity. Did you know that silicon is the main component of sand? Did you also know that silicon is the second most abundant element in the earth's crust after oxygen? Alright, on to the next component.

Glass: Of course, glass is also an indispensable part of a solar panel. The funny thing is that glass, like silicon, is made up of mostly sand.

Aluminum: A solar panel cannot do without aluminum. An aluminium frame has a number of advantages. The biggest one is that aluminum is good at reflecting heat. This makes the panel even better.

Buyer: Of course, there's a lot of wiring in there. These, in turn, contain a lot of copper. So, now you know roughly what a solar panel consists of. But what happens when these beautiful panels have caught their last ray of sunlight? Well, fortunately, recycling solar panels is a growing industry, and that's fantastic news for the climate and therefore for our

planet. Recycling solar panels helps to reuse precious resources and reduces the amount of waste we dump in landfills.

Well, how does recycling actually work? Well, it all starts with disassembling the panel. The various components are separated and cleaned. The aluminum frames are melted down to be reused, while the glass is ground and can be used in the production of new panels or other glass products. Even the solar cells can be recycled, with the silicon being recovered for reuse.

But let's not forget that recycling isn't just about taking things apart. It's also about finding ways to extend the life of products. Some solar panels can even be refurbished and reused, giving them a second life before being recycled.

So there you have it! Recycling solar panels is an important step towards a more sustainable future. It helps to conserve valuable resources and reduces the impact on our planet. So let's all give a round of applause to those little heroes on our roof who are helping us go green!

**₩** 

After reading this piece, would you like more information about what solar panels can do for you, perhaps in combination with a home battery or a charging station? Please feel free to contact us. If desired, an advisor will visit you without obligation to discuss all your wishes and questions.

## What costs are involved in purchasing a heat pump?

To make a good choice in purchasing a heat pump, it is necessary to calculate not only the purchase costs but also the costs in the longer term. This can differ per brand (e.g. Daikin) but also per installer.

Acquisition costs and subsidy

The price of a Daikin heat pump with an A++ label varies depending on the type, power and complexity of the installation. The cost can range from around  $\in 3,000$  to over  $\in 15,000$ , including installation.

The With the A++ label you are eligible for the ISDE subsidy. The exact amount of the grant depends on the type and model of the heat pump, but the grant can cover 25% to 30% of the

costs, with a starting amount of around  $\in$ 500. Plus, there's an added bonus for A+++ models at  $\in$ 250,-.

Maintenance costs

Regular maintenance is necessary to maintain the efficiency and longevity of the heat pump. Periodic maintenance costs can range from  $\in 100$  to  $\in 300$  per year, depending on the service provider and maintenance contract.

Repair costs

Unlike a central heating boiler, a heat pump has fewer moving parts. As a result, the repair costs - after the warranty period - are usually much lower than with a central heating boiler. Lifespan and total cost

Heat pumps typically have a long lifespan, often 15 to 20 years, depending on the model and how well they are maintained.

It is important to remember that these costs are only estimates and may vary depending on personal circumstances and market developments. For accurate pricing and subsidy information, it is recommended to request a quote from a certified dealer and check the latest information about ISDE subsidies with the Netherlands Enterprise Agency (RVO).

As a certified installer, our in-house advisors will of course be happy to help you:)

## What subsidies are available for heat pumps in 2024?

In the Netherlands, various subsidies will be available for the purchase of heat pumps in 2024. These subsidies are intended to make the purchase and installation of heat pumps more financially attractive and thus stimulate the switch to renewable energy sources. Here is an overview of the most important grants and schemes:

1. Investment Subsidy for Sustainable Energy and Energy Saving (ISDE)

Target audience: Both homeowners and businesses.

Application: For the installation of a (hybrid) heat pump, solar water heater, electric cooking facility or connection to the heat network.

Conditions: The heat pump must have at least an A++ energy label to be eligible for the ISDE from 2024. There is an additional bonus of €225 for heat pumps with an A+++ label.

Budget: €600 million in 2024, increased by €40 million compared to the previous year.

## 2. Extra subsidy for insulation measures

If you also have insulation work carried out within 24 months of the installation of the heat pump, the subsidy amount for the insulation measure doubles.

## 3. Energy Savings Loan

Target group: private individuals and owners' associations.

Features: A loan to finance the remaining costs after deducting the grant. The interest rate remains unchanged during the term of the loan.

Loan amount: Individuals can borrow between €1,000 and €27,000, depending on the measures they take.

### 4. Local Grants

Some municipalities offer additional reimbursements for the installation of a heat pump. It is advisable to check with your local authority to see if there are any additional financial benefits available.

## **Application Process**

Private individuals canapply for the subsidy for heat pumps within 24 months of installation and payment of the appliance. Business users must apply for the subsidy before purchasing the heat pump. A quote from an installer must be attached to the application.

Important to know

Conditions: The heat pump must be new and installed by a licensed installer. The device must also be on the 'Heat Pump Reporting Code List'.

Energy label: From 2024, only heat pumps with at least energy label A++ will be eligible for the ISDE.

These subsidies and schemes make investing in a heat pump more attractive and help homeowners to become more sustainable. It is always advisable to consult one of our inhouse advisors. They are constantly being trained and think it's a shame not to share this knowledge:)

## What is the difference between a hybrid and fully electric heat pump?

Heat pumps are an increasingly popular solution for heating buildings, both in private and commercial environments. They provide an energy-efficient way to control temperature and are an important part of the transition to more sustainable energy sources.

In this overview, we compare the different types of heat pumps available and their respective characteristics.

Let's take a look at the differences between hybrid heat pumps and all-electric heat pumps so you can get a better idea of what each option entails.

Hybrid heat pumps

Combination: Hybrid heat pumps combine an electric heat pump with a traditional gas or oilfired boiler.

Automatic Selection: The system automatically switches between the heat pump and the boiler, depending on which one is the most efficient at the time. This is especially useful in colder weather, when the heat pump alone may not be enough.

Energy savings: They offer significant energy savings compared to a traditional boiler alone, but are not as efficient as an all-electric heat pump.

Installation: Easier to install in homes with existing heating systems, as you can continue to partially use the existing boiler.

Environmental impact: Less impactful than all-electric heat pumps, as they are still partly dependent on fossil fuels.

Fully electric heat pumps

100% Electric: These heat pumps are completely dependent on electricity and do not use fossil fuels.

Efficiency: Generally more efficient than hybrid systems, especially if your electricity comes from renewable sources like solar or wind.

Environmentally friendly: They significantly reduce CO2 emissions, as they do not burn fossil fuels.

Long-term costs: While the initial installation costs may be higher, they save more on energy costs in the long run.

Versatility: There are different types of all-electric heat pumps (such as air-to-water, air-to-air, and geothermal), each with their own advantages and suitability for different situations. Important Considerations When Choosing a Heat Pump

When choosing a heat pump, there are several factors to consider. Pay particular attention to: Climate: In harsher climates, a hybrid system may be more beneficial, as it performs better in extremely low temperatures.

Energy source: If you have access to renewable electricity, an all-electric heat pump is a more environmentally friendly choice.

Budget and space: All-electric heat pumps can be more expensive to install, especially if your home isn't already well insulated or if you're choosing a geothermal system.

### Conclusion

Heat pumps are a versatile and energy-efficient option for heating and cooling:

Hybrid heat pumps are a good intermediate step if you want to take advantage of the efficiency of a heat pump, but are not yet ready to say goodbye to your traditional boiler completely.

All-electric heat pumps are the most environmentally friendly option and offer the greatest savings in the long term, but require a larger initial investment.

Hopefully, this will provide you with enough information to make a good choice between hybrid or fully electric heat pumps.

#### **How To Install Solar Panels On Tile Roofs?**

The material used when mounting solar panels on a roof with tiles must be of great quality, but the tiled roof and the tiles themselves must also be suitable for mounting solar panels. Materials for the installation of solar systems will be handled and applied correctly by professionally trained technicians. All this to guarantee that you have not only chosen good quality PV panels and inverter, but that the entire lifespan of the PV system will remain fixed without any problems.

Solar panels on sloping roofs

For pitched roofs, Clickfit is used in most cases. This Dutch invention has proven itself for years due to the many installed roofs. With a warranty period of 20 years, this system is an excellent mounting option in many cases. The universal roof hook is infinitely adjustable in height and width and can therefore be used with all possible tile/batten combinations. The universal roof hook is also equipped with a screw option. As a result, the roof hook can also be screwed to the roof if desired. The universal roof hook is equipped with a self-aligning click connection. As a result, the mounting rail is always easy to mount from above. Cabling and plugs can always be tied neatly and securely in both the roof hook and the cable clip. The optimizer can also be easily clicked onto the cable clip.

Always the right dimensions

The universal module clamp is suitable for all framed solar panels and can be used as a middle clamp and - in combination with the end cap - also as an end clamp.

# How do I know if an inverter is working?

Most good inverters have a readout function. The data is collected via the internet and you can then access it on an app on your phone, or on a PC or laptop. Above all, choose an inverter with an active fault message. In practice, we often see that the inverter is closely monitored for the first few weeks, but after a few months this no longer happens. It is very practical for a solar energy system to notify you when something is wrong.

#### How do I calculate which inverter I need?

Most manufacturers have developed a tool that makes it quite easy to calculate which inverter best suits your situation. A good advisor will always show you how the choice for a particular inverter came about.

The choice of a type of inverter depends on environmental factors, available budget and whether there may be expansion plans in the future. Contact us for a tailor-made consultation.

# What are the advantages and disadvantages of in-roof solar panels?

January 12th, 2024 | 1 min read

The material used in the installation of solar panels in roof, instead of roof tiles, fully integrated, must be of great quality. What are the advantages and disadvantages of this system? The surface itself must be suitable for mounting solar panels. Materials for the installation of solar systems will also be handled and applied correctly by professionally trained technicians. All this to guarantee that you have not only chosen good quality PV panels and inverter, but that the entire lifespan of the PV system will remain fixed without any problems.

Why in-roof system solar panels?

There are different types of materials for an integrated solar panel. The reason that solar panels are installed completely in the roof is mainly because of the high aesthetic value, because the solar panels form a tight whole with the roof between and are mounted (almost) at the same height as the roof tiles. If you want to purchase solar panels and have high requirements for the finish and appearance of the PV system, an in-roof system is an attractive solution.

In-roof is watertight

The in-roof systems are waterproof. During renovations, HDPE plastic is rolled out on the battens immediately after the amount of roof tiles has been removed. This is to guarantee the watertightness of the roof. In most cases, the roofs of new buildings are already provided with a water-repellent layer to prevent saturation of the insulation material.

The advantages of in-roof solar panels

Can be used in both new-build homes and existing homes,

A very nice finish: a sleek in-roof system instead of a roof,

Extremely suitable when the load on the roof is restrictive,

You save on the purchase of roof tiles for new construction.

Disadvantages of in-roof solar panels:

Especially with existing buildings a more expensive solution,

The efficiency of the solar panels is slightly lower because the temperature is higher.

If you have a question about integrated solar panels for your situation, please feel free to contact us.

## What are mono crystalline solar panels?

Mono crystalline solar panels are made of solar cells whose structure consists of one large crystal. As a result, the color is more even. The cells are also often darker in color, which is why many people find this solar panel more beautiful. That's why it's a type of solar panel that is widely used in homes.

Anyway, what makes these panels so special? It all starts with the material they're made of: monocrystalline silicon. Sounds like quite a mouthful, right? But actually, it's pretty simple. Monocrystalline silicon is made by cooling molten silicon into one large crystal shape. This process results in panels with a uniform structure and higher efficiency.

One of the major advantages of mono crystalline solar panels is their efficiency. Due to the uniform structure of the silicon, they can convert more sunlight into electricity than other types of solar panels. This means you can generate more power with fewer panels, which is great if your space is limited.

But efficiency is not the only benefit. Mono crystalline solar panels are also durable and generally have a long lifespan. This means that you will not only save money on your energy bills, but also contribute to a greener planet in the long run.

As also mentioned in the intro, the appearance of these panels. They can often be recognized by their deep black color and the uniform appearance of the solar cells. Most people express a clear preference for monocrystalline solar panels.

So there's the answer. Mono crystalline solar panels are not only powerful and efficient, but also durable and stylish. So if you're looking for a way to reduce your energy bills and contribute to a greener future, be sure to consider this type of solar panel.

Would you like to know just a little more about some solar panels, possibly with a home battery or even a charging station for your electric car? Please contact us and one of our advisors will visit you without obligation to discuss all questions and wishes.

## How much does a battery cost?

Solar energy is becoming increasingly popular as a sustainable and eco-friendly energy source, and many homeowners are considering installing solar panels to reduce their electricity costs. However, an important aspect of an efficient solar energy system is the battery, which can store the energy generated for use at times when the sun is not shining. On this page, we take a closer look at the cost of batteries for solar panels and explore the investment and payback period.

### Investment

The cost of a solar panel battery varies depending on its capacity and brand. On average, the investment for a home battery can range from  $\[mathbb{e}\]2,000$  to  $\[mathbb{e}\]10,000$ , depending on the size of the system and the desired storage capacity. It is essential to choose a battery that is well-matched to the energy needs of the household.

## Storage capacity

The storage capacity of the battery, expressed in kilowatt-hours (kWh), directly influences the cost. The larger the storage capacity, the more expensive the battery will generally be. It is important to find the right balance between storage capacity and daily energy requirements to achieve the most cost-effective solution.

### Lifespan and warranty

Batteries have a limited lifespan, usually expressed in terms of the number of charge and discharge cycles they can endure before their performance decreases. It is important to look at the warranty offered by the manufacturer, as this indicates how long the battery is expected to work efficiently. A battery with a longer lifespan may be more expensive initially, but it will be worth it in the long run.

### Installation costs

In addition to the cost of the battery itself, homeowners should consider installation costs. This includes labor costs, equipment required, and any modifications to the solar power system to integrate the battery. Professional installation is critical to ensure optimal performance.

## Financial grants

In the Netherlands, financial subsidies are available to reduce the cost of batteries for solar panels. It is advisable to research whether there are such schemes available to you, as they can shorten the payback period and make the investment more attractive.

## Payback

The payback period is a crucial aspect when evaluating the cost of a solar panel battery. This is the period of time it takes to recoup the initial investment through savings on energy bills. A battery can extend the payback period, but it can still be a worthwhile investment for homeowners who are striving for grid independence and energy conservation.

The cost of a battery depends entirely on the specifications of the battery. Normally, a small

The cost of a battery depends entirely on the specifications of the battery. Normally, a small home battery is more expensive than a larger one. A 3 kWh energy storage battery for your home has a target price of around 4,000 euros. If you want to buy a larger battery, you will spend around 7,000 to 9,000 euros for an 8 kWh storage system. A 16 kWh battery is the target price of around 12,000 euros. These prices include 21% VAT and installation. Do you have a company and are you interested in the storage of wind energy or solar energy? In that case, a good substantiation of a storage system is crucial. For medium-sized and larger systems, we always provide tailor-made solutions.

### What is netting?

Without netting, far fewer solar panels would have been installed in the Netherlands. Netting is a subsidy, an incentive measure that benefits many people in the Netherlands. This is because in the Netherlands we spend more costs on taxes than on the energy supplier. Below is an explanation of netting.

## What is netting?

Solar panels generate sustainable energy. During the day, when the sun is shining, this often produces more energy than you consume. You automatically supply this extra energy to the energy grid. Netting keeps track of how much you supply to the grid, so that you can get that amount back from the grid for free. So if it's dark or cloudy and you're generating less solar energy than you're consuming, you can get back the amount of power you supplied to the grid for free.

How much tax do I pay on my electricity?

So far, the energy tax has been increasing every year. Sometimes the ratios between gas and electricity are adjusted, as was the case in 2016. In addition to the cost of energy, you also pay taxes, transport costs and standing charges/administration costs for electricity that you purchase from the grid. Administration costs and transport costs cannot be reimbursed for the electricity generated. As a private individual, you will get the taxes back. Energy tax is the largest part of your cost price, on top of that there is VAT. As a result, you pay more than 12ct per kWh of electricity purchased. You will also receive this tax back for the energy that you feed back into the grid at times when you are not using it yourself.

If you have solar panels and supply electricity to your energy supplier, you are an entrepreneur for VAT purposes and you can get VAT back on the purchase of the system.

# What is a battery with a kWh storage capacity?

The amount of energy that can be stored is expressed in kilowatt hours (kWh). One thousand watt-hours is the energy needed to run a 1,000-watt lamp for an hour.

An average domestic home in the Netherlands uses about 4,000kWh of electricity per year. The more storage capacity a battery has, the longer it can use the stored energy.