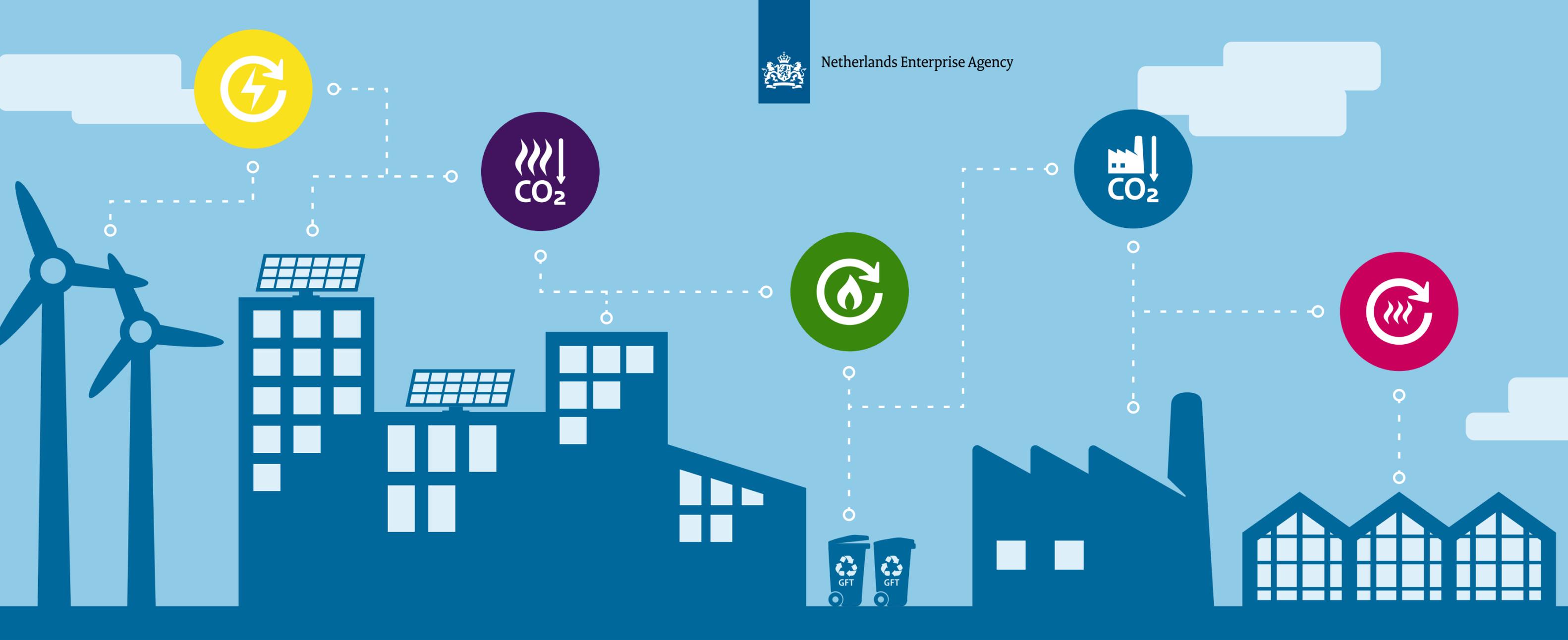




Netherlands Enterprise Agency



SDE++ 2022

Stimulation of Sustainable Energy Production and Climate Transition

Open for applications between 28 June and 6 October 2022

Commissioned by the Ministry of Economic Affairs and Climate Policy

Sustainable, Agricultural, Innovative and International Business

Contents

The SDE++ scheme

- Stimulation of Sustainable Energy Production and Climate Transition (SDE++) 3
- What is the SDE++ scheme? 3
- For whom is the SDE++ scheme intended? 3
- When will the SDE++ scheme open and what is the budget? 3

Methodology of the SDE++ scheme

- Base rate and application amount 4
- Correction rate and base energy price/base greenhouse gas amount 4
- Subsidy intensity 4
- Phased opening and ranking 5
- First come, first served processing 5
- Assessment of applications 5
- Reaching the budget limit 5
- Subsidy grant decisions 6
- SDE++ subsidy 6
- Measuring production 6

SDE++ technologies

Renewable electricity

- Transmission capacity indication 9
- Negative electricity prices 9
- 2022 onshore renewable electricity cap 9
- Osmosis 9
- Hydropower 9
- Wind 10
- Solar PV 11
- Solar PV calculation example 14



Renewable heat

- Transmission capacity indication for combined heat and power (CHP at a sewage treatment plant) and CHP from biomass fermentation 17
- Negative electricity prices for CHP from biomass fermentation and sewage treatment plants 18
- Emissions Trading System (ETS) 18
- Biomass fermentation 18
- Combined applications 18
- Biomass combustion 19
- Composting 20
- Solar thermal 20
- Geothermal heat 21



Renewable gas

- Biomass fermentation 27
- Biomass gasification 27
- Combined applications 28



Low-carbon heat

- Emissions Trading System (ETS) 31
- Aquathermal 31
- Daylight greenhouses 32
- Thermal energy from surface water calculation example 32
- PVT panels with a heat pump 33
- Electric boilers 33
- Production hours and full-load hours 33
- Geothermal heat (shallow and deep) 34
- Use of waste heat 34
- Industrial heat pumps 34
- Hybrid glass furnaces 35



Low-carbon production

- Electrolytic hydrogen, grid-connected 39
- Electrolytic hydrogen, direct line 39
- CO₂ capture and storage (CCS) 39
- CO₂ capture and use in greenhouse horticulture (CCU) 43
- CCU calculation example 43
- CO₂ capture and use in greenhouse horticulture (CCU) 44
- Advanced renewable fuels 45

Applying for an SDE++ subsidy

- Application process 51
- Submitting via the online portal 51

Documents to attach to your application

- Feasibility study 52
- Transmission capacity indication from the grid operator 52
- Site owner consent form 52
- Required permits 53

SDE++ grant decisions

- Implementation agreement and bank guarantee 55
- Receiving your SDE++ subsidy 55

Glossary

Publication details

The SDE++ scheme

Stimulation of Sustainable Energy Production and Climate Transition (SDE++)

The Stimulation of Sustainable Energy Production and Climate Transition (SDE++) scheme focuses on the large-scale rollout of technologies for renewable energy production and other technologies that reduce carbon dioxide (CO₂) emissions.

What is the SDE++ scheme?

The SDE++ is an operating subsidy. In other words, you may receive a subsidy during the operating period of your project. If you are planning to produce renewable energy or use carbon-reducing technologies, you may be eligible for an SDE++ subsidy.

An SDE++ subsidy compensates for the difference between the cost price of the renewable energy or the reduction in CO₂ emissions and the revenue (if any). This is referred to as the “unprofitable component”.

Subsidies are allocated for periods of 12 or 15 years. The duration of your subsidy will depend on which technology you use. The amount of the subsidy depends on the technology used and the level of CO₂ reduction you can ultimately achieve. This brochure explains which technologies are eligible and what conditions apply.

For whom is the SDE++ scheme intended?

You may receive a subsidy as a business or organisation, whether non-profit or otherwise.

You may operate in a sector such as industry, mobility, electricity, agriculture or the built environment.

National government entities cannot apply for a subsidy.

You will only be eligible for an SDE++ subsidy if you are a producer. If you are not planning to set up and operate the production facility yourself, you are not a producer and cannot apply for a subsidy.

If you are planning to construct and operate a single production facility with other parties, you could set up a project entity or a [partnership](#).

If you intend to act as a producer, you may submit no more than 1 application per category and per site where the production facility is to be located during this round of applications.

When will the SDE++ scheme open and what is the budget?

The 2022 round of applications for the SDE++ scheme opens at 9 am on 28 June and closes at 5 pm on 6 October.

A budget of €13 billion is available for all phases and categories combined.

Methodology of the SDE++ scheme

Base rate and application amount

A different base rate has been set for each technology. The base rate is the cost price for the production of renewable energy or the reduction of CO₂ emissions. This base rate is the maximum rate of subsidy you can apply for. The application amount is the rate of subsidy you are applying for. It may be lower than the base rate, but it may not be higher. The application amount is fixed for the entire duration of the subsidy.

Correction rate and base energy price/base greenhouse gas amount

If you use one of the technologies covered by the SDE++ scheme to produce and supply energy, or if you use one of the CO₂ reduction technologies covered by the SDE++ scheme, you will generate revenue. You may also avoid the costs of purchasing energy or emission allowances. We set the levels of revenue and avoided costs in the form of a correction rate. The correction rate is partly determined by the market value of energy. The correction rate is set on an annual basis.

In the SDE++ scheme, the value of [Guarantees of Origin](#) (GOs) for 'Wind' and 'Solar PV' categories is a component of the correction rate. The Netherlands Environmental Assessment Agency ([PBL](#)) sets the average value of GOs on an annual basis. If the technology concerned prevents the purchase, or proceeds from the sale of CO₂ emission allowances under the European Emissions Trading System (EU-ETS), this too is taken into account in the correction rate.

A lower limit is set for the correction rate: the base energy price or the base greenhouse gas amount. The correction rate may therefore not be lower than the base energy price or the base greenhouse gas amount. These amounts are based on two-thirds of the average expected revenue over the entire duration of the SDE++ subsidy.

The SDE++ subsidy is equal to the application amount minus the correction rate. If the correction rate is equal to the base energy price or base greenhouse gas amount, you will receive the maximum subsidy. If the correction rate is higher than the application amount, you will not receive a subsidy.

Subsidy intensity

When considering SDE++ applications, we look at the subsidy requirement per tonne of CO₂ reduction. In 2022, the maximum [subsidy intensity](#) for which your SDE++ technology may be eligible is €300 per tonne of CO₂ reduction.

Stimulating technologies with a subsidy intensity higher than €300 per tonne of CO₂ is incompatible with a cost-effective energy transition, which is the intention of the SDE++ scheme. Technologies with a higher subsidy intensity can still apply for an SDE++ subsidy, but for these projects, we may not reimburse the entire unprofitable component.

You may submit your application with an application amount with one decimal place in euros per MWh, or, in the case of CO₂ capture and storage or use, with four decimal places in euros per tonne of CO₂ emissions avoided. We call the ranking rate the 'subsidy intensity'; it is expressed in euros per tonne of CO₂ emissions avoided, and we round it to three decimal places.

The subsidy intensity depends on the rate for which you submit an application (the application amount), the [long-term price](#) and the [emission factor](#). You can calculate the subsidy intensity using the calculation tool on the SDE++ website.

We calculate the subsidy intensity using one of the following formulae:

Subsidy intensity, all categories apart from CO₂ capture and storage (CCS) and CO₂ capture and use (CCU).

$$\text{Subsidy intensity [euros/tonne CO}_2\text{]} = \frac{(\text{application amount [euro/kWh]} - \text{long-term price [euro/kWh]})}{(\text{emission factor [kg CO}_2\text{/kWh]} / 1,000)}$$

Subsidy intensity for CO₂ capture and storage (CCS) and CO₂ capture and use (CCU).

$$\text{Subsidy intensity [euros/tonne CO}_2\text{]} = \frac{(\text{application amount [euros/tonne CO}_2\text{]} - \text{long-term price [euros/tonne CO}_2\text{]})}{(\text{emission factor [kg CO}_2\text{/tonne CO}_2\text{]} / 1,000)}$$

Phased opening and ranking

The 2022 round of the SDE++ scheme has five phases. During each phase, you may submit subsidy applications up to a certain [subsidy intensity](#) per tonne of CO₂ emissions reduction. This is the phase limit. During subsequent stages, this amount will gradually increase. You may also submit projects with a lower subsidy requirement than the maximum set for the technology in question. You can do this by applying for a lower rate than the maximum base rate and the phase rate. This means you will be applying for a lower subsidy intensity, which may increase your chances of obtaining a subsidy.

First come, first served processing

We will process subsidy applications in the order in which we receive them. Applications received after 17:00 or on non-business days are considered to have been received on the next business day. In other words, each business day begins at 17:00 and runs until 17:00 the following business day. This also applies at the start of a new phase. Within each business day, the time of receipt of the subsidy application is irrelevant.

Assessment of applications

We only process complete applications. This means that the application form must be completely filled in and all mandatory documents applicable to your category must be attached. We then assess the content of your application for viability, as well as technical, financial and economic feasibility. We also assess whether the application meets the requirements of the category. Only complete and feasible projects have a chance of obtaining a subsidy. During the assessment period, we may ask you to further explain or

supplement your application. The assessment period is set at 13 weeks. It can be extended once by a further 13 weeks.

Reaching the budget limit

If the budget limit is exceeded on a given day, we will rank the projects on that day based on subsidy intensity. This means that projects with a lower subsidy intensity will be ranked higher. If the budget limit is exceeded by projects with the same subsidy intensity, lots will be drawn for these projects.

Phase	Start and end date	Phase subsidy intensity limit (€/tonne CO ₂)
Phase 1	9 am, 28 June to 5 pm, 11 July	65
Phase 2	5 pm, 11 July to 5 pm, 29 August	75
Phase 3	5 pm, 29 August to 5 pm, 12 September	105
Phase 4	5 pm, 12 September to 5 pm, 26 September	165
Phase 5	5 pm, 26 September to 5 pm, 6 October	300

Subsidy grant decisions

The subsidy granted to you by the Netherlands Enterprise Agency in the decision is the maximum amount you will receive over the entire duration of the subsidy (12 or 15 years, depending on the technology). We determine this maximum amount based on capacity and production. Production is capped based on a maximum number of [full-load hours](#) for each technology.

Every year, we re-calculate the actual subsidy amount you get paid based on the amount of energy you produce or the amount of CO₂ you reduce. Revenue levels are also taken into account. You will receive a subsidy up to a maximum number of full-load hours per year. Subsidies are also subject to a maximum duration, depending on the technology used.

SDE++ subsidy

The amount of the SDE++ subsidy depends on the application amount and changes in the revenue from energy supplied or CO₂ reduced, up to a certain lower limit. The higher the revenue, the smaller the SDE++ contribution you receive. If you earn less revenue, you will receive a higher SDE++ contribution, up to a set lower limit.

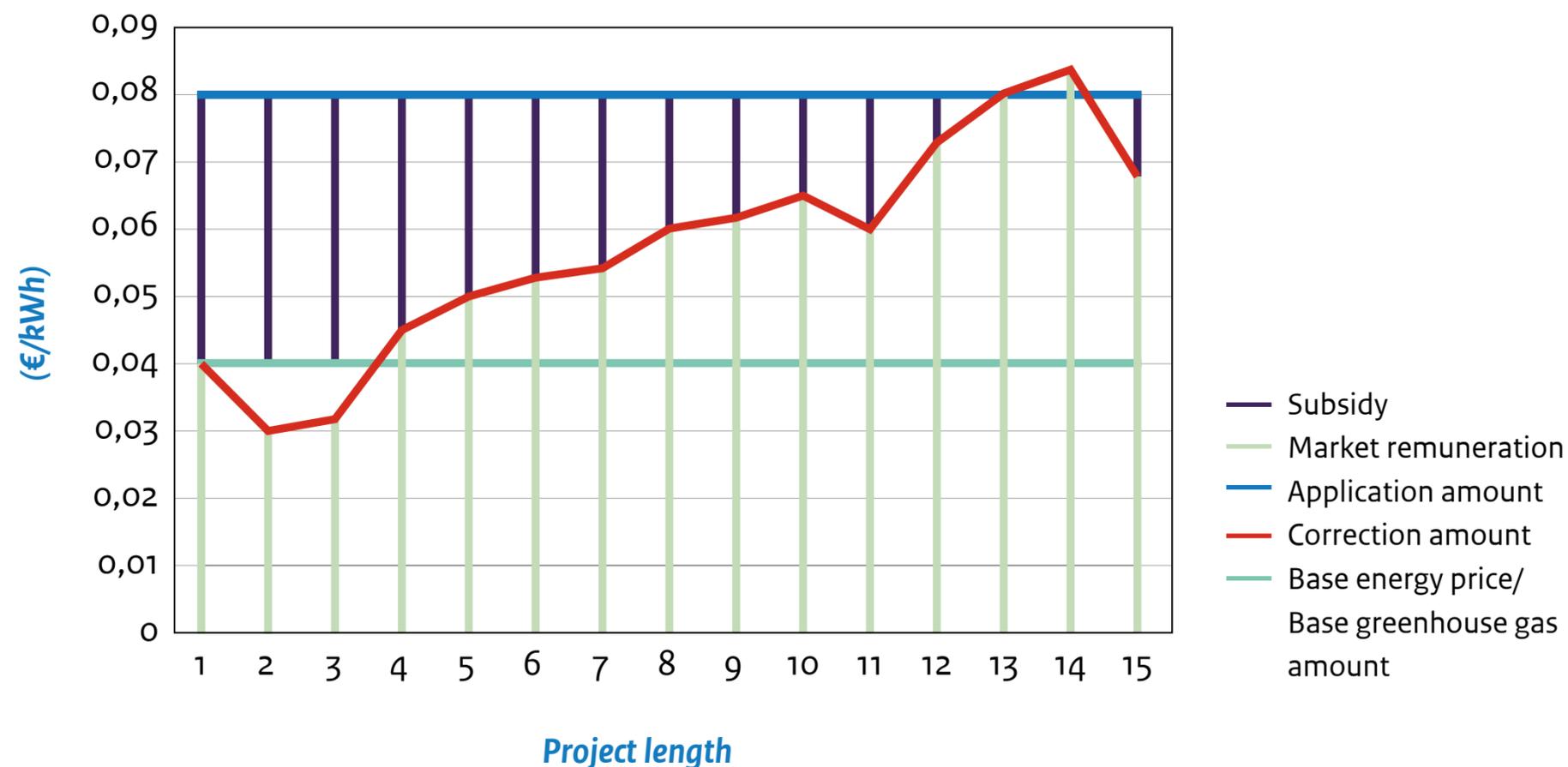
Maximum SDE++ subsidy =
 (application amount – base energy price or base greenhouse gas amount) * production or CO₂ reduction

We pay out SDE++ subsidies in the form of monthly advance payments. At the end of each calendar year, the subsidy is adjusted based on actual production or CO₂ reduction and the final correction rate.

Measuring production

When you receive an SDE++ subsidy you have to measure your production, or your CO₂ reduction in the case of CO₂ capture and storage or CO₂ capture and use. You can do so by installing a number of gross production meters in your production facility. Talk to your metering company about how to measure production.

Example of an SDE++ contribution



* This example applies to all categories apart from CO₂ capture and storage (CCS) and CO₂ capture and use (CCU). For CCS and CCU, the unit on the vertical axis should be replaced by (€/tonne CO₂ reduction).

** This example is applicable to categories with a term of 15 years. There are, however, also categories with a term of 12 years.

SDE++ technologies

Main category



Renewable electricity

Technology

Osmosis
Hydropower
Wind
Solar PV



Renewable heat (CHP)

Biomass fermentation
Biomass combustion
Composting
Geothermal (deep and ultra-deep)
Solar thermal



Renewable gas

Biomass fermentation
Biomass gasification

Main category



Low-carbon heat

Technology

Aquathermal
Daylight greenhouses
Solar PVT panels with a heat pump
Electric boiler
Geothermal (shallow)
Waste heat
Industrial heat pump
Hybrid glass furnaces

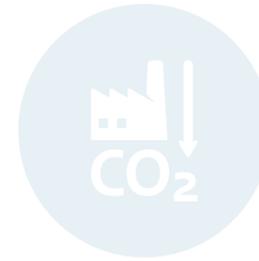
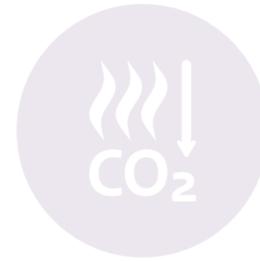


Low-carbon production

CO₂ capture and storage (CCS)
CO₂ capture and use (CCU)
Advanced renewable fuels
Electrolytic hydrogen production



Renewable electricity



Renewable electricity

The 'Renewable electricity' SDE++ category is divided into the technologies 'Osmosis', 'Wind', 'Hydropower' and 'Solar PV'. This section tells you about the general conditions for electricity production in the 2022 round of the SDE++ scheme and the specific application conditions that apply to each technology. The table 'SDE++ 2022 phasing and rates for renewable electricity' at the end of this section contains an overview of the categories, associated phase amounts, full-load hours and other key figures.

Transmission capacity indication

If you are submitting an application for renewable electricity, you must include an indication of the grid operator's transmission capacity. This must demonstrate that sufficient transmission capacity is available for the location to which your application relates.

The transmission capacity indication cannot be construed as a guarantee of transport capacity.

NB: The transmission capacity indication must be given for the application round for which you are applying for a subsidy.

Negative electricity prices

If the price of electricity is negative, you will not receive an SDE++ subsidy for the feed-in of renewable electricity. You can find more information about the conditions on the [SDE++ website](#).

[website](#). The SDE++ website also has a list of dates on which the electricity prices were negative.

2022 onshore renewable electricity cap

The Climate Agreement contains a target of 35 TWh of onshore renewable electricity in 2030. In line with the Climate Agreement, the SDE++ scheme is aiming to achieve 35 TWh of subsidy-eligible production from onshore wind and solar PV (> 15 kWp) in 2030. Because we are close to reaching this target, in the 2022 round of the SDE++ scheme a cap has been set for these technologies.

The aim of the cap in the 2022 round of the SDE++ scheme is to achieve maximum annual production of 33.5 TWh in 2030. This translates to a cap of 37.5 TWh in this application round, which consists of annual production of 2.5 TWh multiplied by a 15-year subsidy period. When setting the cap, we took into account the non-realization of some projects. In addition, not all the remainder of the '35 TWh by 2030' target will be opened in this application round. There will still be space for applications after 2022, ensuring the continuity of renewable electricity projects. If the cap for this application round is reached, no subsidies will be granted to the remaining projects for these technologies.

Osmosis

If you produce renewable electricity by harnessing the difference in salt concentration between two bodies of water (osmosis), you can apply for a subsidy for this production facility.

Permits

You will usually require 1 or more permits for an osmosis facility. These must already have been issued by the competent authority when you submit your subsidy application. The 'Required permits' page tells you which permits you might require.

Hydropower

Subsidies are available for 3 categories:

- New hydroelectric power stations with a drop of ≥ 50 cm*;
- New hydroelectric power stations with a drop of ≥ 50 cm;
- Renovation of existing hydroelectric power stations with new turbines and a drop of ≥ 50 cm. All turbines for which you are applying for a subsidy must be newly installed in existing structures. The other components do not have to be new.

In all cases, this must involve energy derived from water that is not specially pumped upwards for the purpose of generating energy.

* Energy from free-flowing water. Within this category, you can also apply for a subsidy for water turbines that use tidal energy with a drop of < 50 cm, for example.

* Wave energy. Within this category, you can also apply for a subsidy for a power generation facility that converts energy from waves into renewable energy.

Permits

You will usually require 1 or more permits for a hydroelectric power station. These must already have been issued by the competent authority when you submit your subsidy application. The [‘Required permits’](#) page tells you which permits you might require.

Wind

You can apply for a subsidy for wind turbines in the categories ‘Onshore wind’, ‘Onshore wind with a height restriction’, ‘Wind on flood defences’ and ‘Wind on lakes’.

Wind speeds

All municipalities in the Netherlands have been classified into one of the six wind speed categories. A different base amount has been calculated for each wind speed category. The wind speed categories are:

- ≥ 8.5 m/s
- ≥ 8 and < 8.5 m/s
- ≥ 7.5 and < 8.0 m/s
- ≥ 7.0 and < 7.5 m/s
- ≥ 6.75 and < 7.0 m/s
- < 6.75 m/s

Wind map

The map [‘Wind Speed in the Netherlands by Municipality’](#) shows the average wind speed for each municipality in the Netherlands and is based on a wind map produced by the Royal Netherlands Meteorological Institute (KNMI).

The 2022 round of the SDE++ scheme will apply the municipality classification from 1 January 2022. You can find a list of municipalities in Annex 2 of the ‘Allocation Regulations for SDE categories’.

A different base amount has been calculated for each wind speed category.

The wind map shows which wind speed category applies to your project location. When you submit your subsidy application through the online portal (eLoket), select the municipality in which your project will be implemented. The name of the municipality may be different from the place name of the location where you will implement the project. Owing to significant differences in wind speeds, the municipality of Rotterdam has been subdivided at district and neighbourhood level. Keep this in mind when selecting a municipality in the online portal *eLoket*.

We use the wind map for the following wind categories:

- Onshore wind
- Onshore wind with a height restriction
- Wind on flood defences

Large-scale grid connection

The ‘Wind’ category is only open to wind turbines connected to the electricity grid via a large-scale grid connection. (This is a connection to the electricity grid with a total maximum transmission value of more than $3 * 80$ A.)

If you are a producer with a small-scale connection, you may be eligible for one of the following:

- [a grant under the Subsidy Scheme for Cooperative Energy Generation \(SCE\)](#);
- [Sustainable Energy and Energy Savings Investment Subsidy \(ISDE\)](#)

Combined applications

You can combine applications in the wind categories. This may be useful if you want to implement the project in collaboration with other applicants but only want to continue with your project if all of your partner’s applications are also approved. If the subsidy applications received on a single day exceed the available budget, we will rank the applications by subsidy intensity, in euros per tonne of CO₂ reduction. In the case of a combined application, the application with the highest amount will apply. If it becomes necessary to draw lots, the combined applications will be treated as a single application.

Onshore wind with a height restriction

The ‘Onshore wind with a height restriction’ category has been included in the SDE++ scheme. This is due to national laws and regulations related to the presence of an airport in the surrounding area. The tip height of wind turbines in that area is limited to 150 metres. If you are applying for a subsidy for wind turbines in an area subject to height restrictions, indicate this when you submit your application.

You can find more information about these height restrictions in Section 2.5.4 ‘Civilian airports and military airfields (CNS and aviation safety)’ of the PBL’s [‘Height-restricted category for onshore wind’](#) memorandum.

The ‘Aviation Height Restrictions’ viewer can be found on the [‘Building height restrictions’](#) page of the Netherlands Enterprise Agency’s website.

For display areas with assessment or restriction levels for airports, the Defence and the Human Environment and Transport Inspectorate (ILT) map layers in the viewer apply. A height restriction may apply due to the presence of an airport in the surrounding area. The tip height of wind turbines in that area is legally limited to 150 metres.

The viewer is only a guide. When you submit your application, you cannot use it as your sole proof that a height restriction exists.

Wind on flood defences

In the 'Wind on flood defences' category, you can apply for a subsidy for wind turbines on a structure belonging to the Directorate-General for Public Works and Water Management. The wind turbines may also be in the protection zone of the flood defences. For a list of eligible flood defences, see Chapter 5 of Annex II of the '[Security of Primary Flood Defences Regulation 2017](#)'.

You may also apply for a subsidy for wind turbines in the protection zone of coastal flood defences. This relates to wind turbines on the waterside of flood defences bordering the North Sea, the Western Scheldt, the Eastern Scheldt, the Wadden Sea, the Dollard, the Ems and the hard and soft Maasvlakte 2 seawalls.

Wind turbines placed on flood defences that do not fall into the 'Wind on flood defences' category come under the 'Onshore wind' category. The 'SDE++ [Wind on flood defences](#)' map provides an overview of inland and coastal flood defences.

Wind on lakes

For the 'Wind on lakes' category, the wind turbines' foundations must be in the water of a lake at least one square kilometre in size. The foundations must be completely underwater. The centre of the foundations must be at least 25 metres from the water's edge. This ruling applies, for example, to the IJsselmeer lake and the lakes in the Dutch province of Zeeland.

Replacement of wind turbines

When replacing wind turbines, you can apply for a subsidy only if:

- Both the rated output and the target output for each wind turbine are at least 1 MW greater than for the turbine to be replaced; or
- At the time of replacement, the wind turbine to be replaced has been in use at the location for at least 15 years and was commissioned at least 13 years before the subsidy application.

Wind report and Windviewer

When applying for an SDE++ subsidy for wind energy over 100 kW, please attach a wind report as an annex to the [feasibility study](#). The wind report should include a wind energy yield calculation prepared by an organisation with expertise in the area of wind energy yield calculations. The average wind speed used in the wind report should be calculated based on local wind data over a period of at least 10 consecutive years. That average wind speed may not exceed the average wind speed for the location concerned as stated in the [Windviewer](#). The Windviewer provides the average wind speed for every location in the Netherlands at every height from 20 to 260 metres.

For small wind turbines with an output of less than 100 kW, you do not have to hand in a wind report setup by an expert.. A simple energy yield calculation from your supplier will suffice. Include the result of that calculation in your application.

Permits

You will usually require 1 or more permits for the construction of a wind turbine. These must already have been issued by the competent authority when you submit your subsidy application. The '[Required permits](#)' page tells you which permits you might require.

Solar PV

You can apply for a subsidy for photovoltaic solar panels (solar PV). Eligible solar panels are those with a peak output of ≥ 15 kWp and a connection to the grid with a total maximum transmission value of more than 3*80 A (a large-scale connection).

New features of the SDE++ scheme in 2022

1. A separate category for floating solar PV greater than or equal to 15 kWp and less than 1 MWp. There are also separate categories for onshore solar and sun tracking on land for systems producing 15 MWp and over.
2. For all building-mounted solar PV systems, the application must include a declaration about the load-bearing capacity of the building. RVO has placed a [tool](#) for this declaration on its website.
3. Production facilities > 1 MWp may have a contracted additional feed-in capacity of up to 50% of the peak output of the solar panels. This does not apply to solar tracking systems.

For solar PV, the following ten categories will be open for applications:

- ≥ 15 kWp and < 1 MWp, building-mounted
- ≥ 1 MWp, building-mounted
- ≥ 15 kWp and < 1 MWp, floating
- ≥ 1 MWp, floating
- ≥ 15 kWp and < 1 MWp, onshore
- ≥ 1 MWp and < 15 MWp, onshore
- ≥ 15 MWp, onshore
- ≥ 1 MWp and < 15 MWp, sun tracking on land
- ≥ 15 MWp, sun tracking on land
- ≥ 1 MWp, sun tracking on water

Implementation period

Systems must be commissioned within the following timeframes:

- Solar PV < 1 MWp: 2 years
- Solar PV ≥ 1 MWp, building-mounted systems: 3 years
- Solar PV ≥ 1 MWp, ground-mounted and floating systems: 4 years

Feasibility study with detailed drawing

If you are applying for an SDE++ subsidy for Solar PV, you must supply a [feasibility study](#). When submitting a subsidy application, with your feasibility study you must always include a detailed scale drawing accurately depicting the solar PV system that is the subject of your application. Unclear maps or photos are no longer sufficient. If other systems are or will be installed at the site in question, please clearly indicate this fact. The drawing must also show the orientation of the system. For

building-mounted solar PV systems, calculate the available roof surface area, taking into account skylights and climate control systems on the roof.

For solar PV categories with an output of less than 1 MW, you can suffice for your feasibility study by answering a number of supplementary questions about feasibility in the eLoket portal. However, you still need to submit a detailed scale drawing accurately depicting the solar PV system that is the subject of your application.

Load-bearing capacity of the roof structure

If you intend to install your production system on the roof or façade of a building, you must include the [Load-bearing capacity of the roof structure](#) form with your application. This form requires a constructor to make a declaration about the load-bearing capacity of the roof or façade according to the Building Decree 2012. You must have the investigation carried out and signed off by a constructor.

‘Constructor’ means someone who can perform the necessary calculations. During the assessment of your project, RVO may ask you to send the executed calculations. If you have a constructor in your organisation who can perform the calculations, they are allowed to execute the calculations and sign the declaration.

The reason why this requirement is introduced is that the rate of completion of building-mounted projects is below expectations. One of the main reasons is that after the subsidy is granted, it is often discovered that the roof is unsuitable, and the cost of making the roof suitable is too high.

Permits

In a number of situations, you will require one or more permits for the installation of solar panels. These must be issued by the competent authority before you submit your subsidy application. The [‘Required permits’](#) page tells you which permits you might require.

Large-scale energy connection

The ‘Solar PV’ category applies solely to systems connected to the electricity grid via a large-scale energy connection. This is a connection to the electricity grid with a total maximum transmission value of more than $3 * 80$ A. It is also possible to connect your system to the grid using multiple large-scale energy connections.

Or you could connect your production facility to the electricity grid using the large-scale energy connection of an adjacent section, although your system must of course be installed on the site for which the subsidy is granted. If you intend to construct a production system at two adjacent sites, or if your site has multiple street numbers, describe the situation clearly in your subsidy application.

Limit on additional contracted feed-in capacity

New in 2022, a maximum additional contracted feed-in capacity for the production facility applies for projects with a total nominal capacity 1 MWp or higher. The maximum is set to 50% of the peak output of the solar Projects are compensated for the limited loss of yield through a lower number of [full-load hours](#) and a higher base rate. The application form will include additional questions about the connection and the contracted feed-in capacity.

This change enables more renewable energy projects at the same grid capacity. The requirement does not apply to the categories for solar tracking PV systems.

Grid supply and non-grid supply

For the ‘Solar PV’ categories, there is a distinction between ‘grid supply’ and ‘non-grid supply’ (internal use). Different base energy prices and correction rates apply to each type of supply. You will derive a greater financial benefit if you use the generated electricity internally, because you do not have to pay energy tax, the sustainable energy surcharge (ODE) or transmission costs. Accordingly, electricity generated for ‘internal use’ is subject to a higher correction rate. The procedure is as follows:

- In your subsidy application, indicate how much of the electricity you produce will be used for ‘non-grid supply’ (internal use)
- We will base the awarded subsidy on the base energy price for ‘grid supply’ electricity.
- We will make advance payments every autumn based on the distribution of ‘grid supply’ and ‘non-grid supply’ over a

recent 12-month period. To calculate the first advance payment, we will use the ‘grid supply’ and ‘non-grid supply’ percentages you specify in the application form.

Grid congestion

If you are implementing a Solar PV project at a location where little or no feed-in supply is possible, please include an explanation with your application showing the technical adjustments you intend to make to accommodate this. If those technical adjustments mean that the output of the facility will be capped, temporarily or otherwise, please indicate when submitting your subsidy application how this influences the financial feasibility of your project. The financial return will be affected if the facility’s production capacity is reduced. Also in this situation, you must include a transmission capacity indication from your grid operator with your subsidy application.

Solar tracking systems

With solar tracking systems, the panels automatically turn to follow the sun, enabling you to achieve higher energy production. Solar tracking systems have higher investment costs than standard systems, but they also have a higher number of [full-load hours](#) that are eligible for the subsidy. For this reason, the base rates and correction rates are the same as for standard systems.

A [feasibility study](#) is required for solar tracking systems. In addition, you must provide an energy yield calculation. We will use this to establish the maximum number of full-load hours.

Solar farms with a mix of fixed and solar tracking solar panels

If you want to submit a subsidy application for a solar farm where not all of the solar panels track the sun, you will have to submit two separate applications: one for the panels that track the sun and one for those that do not. You only have to calculate the energy yield for the application for the solar tracking panels. It isn’t possible to change categories once you’ve submitted the subsidy application.

Double-sided solar panels (bifacial solar panels)

If you want to use double-sided solar panels for your project, you can apply for a subsidy for a higher output (in kWp). In the Netherlands, the annual output from these kinds of panels is up to 15% higher than that of a system with single-sided PV modules. Please attach an explanation to your subsidy application showing how you calculated the output. If available, substantiate your explanation with a data sheet for the solar panel concerned.

Solar PV calculation example

This example is based on a building-mounted solar PV system with 40% grid supply and 60% non-grid supply, with an output of 1 MWp.

Category: Solar PV ≥ 1 MWp, building-mounted

Maximum application amount in Phase 1	€0.0643/kWh
Maximum application amount in Phase 2	€0.0654/kWh
GO value solar PV grid supply	€0.0020/kWh
2022 provisional correction rate for grid supply*	$0.0354 + 0.0020 = €0.0374/\text{kWh}$
2022 provisional correction rate for non-grid supply	€0.0716/kWh

Provisional 2022 SDE++ subsidy for the maximum application amount in Phase 1:

Grid supply	$6.43 - 3.74 = 2.69 \text{ € cents/kWh} = €26.90/\text{MWh}$
Non-grid supply**	$6.43 - 7.16 = 0.00 \text{ € cents/kWh} = €0.00/\text{MWh}$

Provisional 2022 SDE++ subsidy for the maximum application amount in Phase 2:

Grid supply	$6.54 - 3.74 = 2.80 \text{ € cents/kWh} = €28.00/\text{MWh}$
Non-grid supply**	$6.54 - 7.16 = 0.00 \text{ € cents/kWh} = €0.00/\text{MWh}$
Maximum number of full-load hours eligible for the subsidy	850 full-load hours
Total rated output	1 MWp
Maximum annual production eligible for the subsidy for a facility with a 1 MWp output	$1 * 850 = 850 \text{ MWh}$

Provisional 2022 SDE++ subsidy for the maximum application amount in Phase 1:

Grid supply: $(40\% * 850) * €26.90 =$	€9,146
Non-grid supply: $(60\% * 850) * €0 =$	€0
Total	€9,146

Provisional 2022 SDE++ subsidy for the maximum application amount in Phase 2:

Grid supply: $(40\% * 850) * €28.00 =$	€9,520
Non-grid supply: $(60\% * 850) * €0.00 =$	€0
Total	€9,520

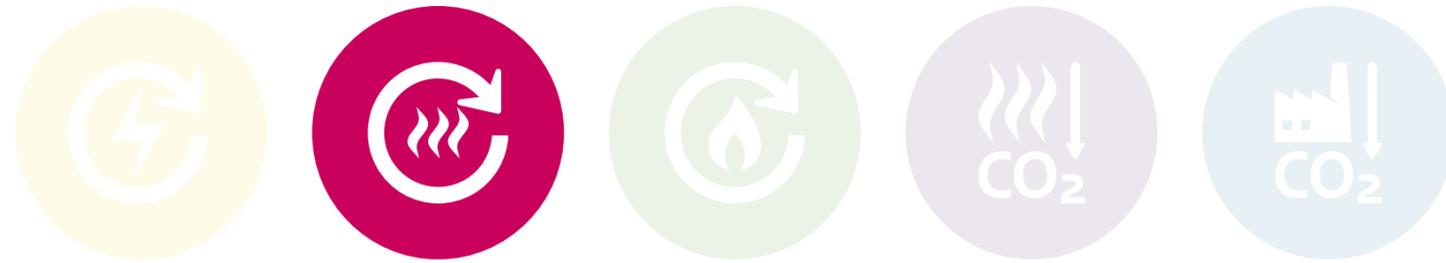
* The GO value will also be taken into account when calculating the provisional correction rate for this category.

** The provisional correction rate for 2022 is higher than the base rate for this category. If this is also the case for the final correction rate, you will not receive a subsidy for this year for the portion of your electricity production that you do not supply to the grid. The SDE++ subsidy cannot be a negative amount. This means that no payment will be due from you should this situation arise.

SDE++ 2022 phasing and rates for renewable electricity	Maximum phase rate/base rate					Base energy price		2022 provisional correction rate		Maximum full-load hours hours/year	Contracting period years	Implementation period years	Subsidy term years
	Phase 1 €/kWh	Phase 2 €/kWh	Phase 3 €/kWh	Phase 4 €/kWh	Phase 5 €/kWh	(For Solar PV grid supply) €/kWh	Solar PV non-grid supply €/kWh	(For Solar PV grid supply and wind including the value of GOs) €/kWh	Solar PV non-grid supply €/kWh				
Category													
Water													
Hydropower, fall height < 50 cm (including wave energy and energy from free-flowing water)	0.0547	0.0560	0.0599	0.0677	0.0852	0.0308		0.0566		3,700	1.5	4	15
Hydropower, fall height ≥ 50 cm	0.0547	0.05595	0.05985	0.06765	0.0852	0.0308		0.0566		5700	1.5	4	15
Hydropower, fall height ≥ 50 cm, renovation	0.0547	0.05595	0.05985	0.06765	0.0852	0.0308		0.0566		2600	1.5	4	15
Osmosis	0.0547	0.05595	0.05985	0.06765	0.0852	0.0308		0.0566		8000	1.5	4	15
Wind													
Onshore wind, ≥ 8.5 m/s	0.0389	0.0393	0.0393	0.0393	0.0393	0.0211		0.0464		P50	1.5	4	15
Onshore wind, ≥ 8 and < 8.5 m/s	0.0389	0.0400	0.0410	0.0410	0.0410	0.0211		0.0464		P50	1.5	4	15
Onshore wind, ≥ 7.5 and < 8.0 m/s	0.0389	0.0400	0.0433	0.0441	0.0441	0.0211		0.0464		P50	1.5	4	15
Onshore wind, ≥ 7.0 and < 7.5 m/s	0.0389	0.0400	0.0433	0.0482	0.0482	0.0211		0.0464		P50	1.5	4	15
Onshore wind, ≥ 6.75 and < 7.0 m/s	0.0389	0.0400	0.0433	0.0500	0.0509	0.0211		0.0464		P50	1.5	4	15
Onshore wind, < 6.75 m/s	0.0389	0.0400	0.0433	0.0500	0.0554	0.0211		0.0464		P50	1.5	4	15
Onshore wind, height-restricted, ≥ 8.5 m/s	0.0389	0.0400	0.0433	0.0455	0.0455	0.0211		0.0464		P50	1.5	4	15
Onshore wind, height-restricted, ≥ 8 and < 8.5 m/s	0.0389	0.0400	0.0433	0.0481	0.0481	0.0211		0.0464		P50	1.5	4	15
Onshore wind, height-restricted, ≥ 7.5 and < 8.0 m/s	0.0389	0.0400	0.0433	0.0500	0.0523	0.0211		0.0464		P50	1.5	4	15
Onshore wind, height-restricted, ≥ 7.0 and < 7.5 m/s	0.0389	0.0400	0.0433	0.0500	0.0574	0.0211		0.0464		P50	1.5	4	15
Onshore wind, height-restricted, ≥ 6.75 and < 7.0 m/s	0.0389	0.0400	0.0433	0.0500	0.0610	0.0211		0.0464		P50	1.5	4	15
Onshore wind, height-restricted, < 6.75 m/s	0.0389	0.0400	0.0433	0.0500	0.0649	0.0211		0.0464		P50	1.5	4	15
Wind on flood defences, ≥ 8.5 m/s	0.0389	0.0400	0.0425	0.0425	0.0425	0.0211		0.0464		P50	1.5	4	15
Wind on flood defences, ≥ 8 and < 8.5 m/s	0.0389	0.0400	0.0433	0.0444	0.0444	0.0211		0.0464		P50	1.5	4	15
Wind on flood defences, ≥ 7.5 and < 8.0 m/s	0.0389	0.0400	0.0433	0.0475	0.0475	0.0211		0.0464		P50	1.5	4	15
Wind on flood defences, ≥ 7.0 and < 7.5 m/s	0.0389	0.0400	0.0433	0.0500	0.0518	0.0211		0.0464		P50	1.5	4	15
Wind on flood defences, ≥ 6.75 and < 7.0 m/s	0.0389	0.0400	0.0433	0.0500	0.0554	0.0211		0.0464		P50	1.5	4	15
Wind on flood defences, < 6.75 m/s	0.0389	0.0400	0.0433	0.0500	0.0599	0.0211		0.0464		P50	1.5	4	15
Wind on lakes ≥ 1 km ²	0.0389	0.0400	0.0433	0.0500	0.0592	0.0211		0.0464		P50	1.5	4	15

SDE++ 2022 phasing and rates for renewable electricity	Maximum phase rate/base rate					Base energy price		2022 provisional correction rate		Maximum full-load hours hours/year	Contracting period years	Implementation period years	Subsidy term years
	Phase 1 €/kWh	Phase 2 €/kWh	Phase 3 €/kWh	Phase 4 €/kWh	Phase 5 €/kWh	(For Solar PV grid supply) €/kWh	Solar PV non-grid supply €/kWh	(For Solar PV grid supply and wind including the value of GOs) €/kWh	Solar PV non-grid supply €/kWh				
Category													
Solar													
Solar PV ≥ 15 kWp and < 1 MWp connection > 3 * 80 A, building-mounted	0.0705	0.0705	0.0705	0.0705	0.0705	0.0237	0.0698	0.0374	0.0815	900	-	2	15
Solar PV ≥ 1 MWp, building-mounted	0.0643	0.0654	0.0670	0.0670	0.0670	0.0237	0.0599	0.0374	0.0716	850	1.5	3	15
Solar PV ≥ 15 kWp and < 1 MWp connection > 3 * 80 A, floating	0.0656	0.0667	0.0699	0.0705	0.0705	0.0237	0.0698	0.0374	0.0815	950	-	2	15
Solar PV ≥ 1 MWp, floating	0.0461	0.0472	0.0504	0.0569	0.0668	0.0237	0.0599	0.0374	0.0716	890	1.5	4	15
Solar PV ≥ 15 kWp and < 1 MWp connection > 3 * 80 A, onshore	0.0656	0.0667	0.0677	0.0677	0.0677	0.0237	0.0698	0.0374	0.0815	950	-	2	15
Solar PV ≥ 1 MWp and < 15 MWp, onshore	0.0461	0.0472	0.0504	0.0567	0.0567	0.0237	0.0599	0.0374	0.0716	890	1.5	4	15
Solar PV ≥ 15 MWp, onshore	0.0425	0.0436	0.0468	0.0533	0.0538	0.0237	0.0599	0.0374	0.0716	890	1.5	4	15
Solar PV ≥ 1 MWp and < 15 MWp, solar tracking on land	0.0461	0.0472	0.0504	0.0551	0.0551	0.0237	0.0599	0.0374	0.0716	1045	1.5	4	15
Solar PV ≥ 15 MWp, solar tracking on land	0.0425	0.0436	0.0468	0.0524	0.0524	0.0237	0.0599	0.0374	0.0716	1045	1.5	4	15
Solar PV ≥ 1 MWp, solar tracking on water	0.0460	0.0471	0.0502	0.0566	0.0646	0.0237	0.0599	0.0374	0.0716	1190	1.5	4	15

Renewable heat



Renewable heat

The SDE++ ‘Renewable heat’ category is divided into the following technologies:

‘Biomass (fermentation and combustion)’, ‘Composting’, ‘Geothermal heat (deep and ultra-deep)’ and ‘Solar thermal’. This section explains the general conditions for the production of renewable heat in the 2022 round of the SDE++ scheme and the specific application conditions that apply to each technology. The table ‘SDE++ 2022 phasing and rates for renewable heat’ at the end of this section contains an overview of the categories, associated phase amounts, full-load hours and other key figures.

Transmission capacity indication for combined heat and power (CHP at a sewage treatment plant) and CHP from biomass fermentation

If you’re submitting an application in a ‘CHP from biomass fermentation’ category or for CHP at a sewage treatment plant, you must include an indication of the grid operator’s transmission capacity for the feed-in of electricity. This is to show that sufficient transmission capacity is available at the location to which your application relates. The transmission capacity indication must be issued in relation to the application round in which you are applying for a subsidy.

Negative electricity prices for CHP from biomass fermentation and sewage treatment plants

If the price of electricity is negative, you will not receive an SDE++ subsidy for the feed-in of renewable electricity. You can find more information about the conditions on the [SDE++ website](#). The SDE++ website also has a list of dates on which the electricity prices were negative.

Emissions Trading System (ETS)

A provision relating to the ETS has been included in the SDE++ scheme. If your facility benefits from the ETS, we will factor this ETS benefit into the correction rate. This situation may change during the production period. Then it is possible to adjust the correction during the production period.

Biomass fermentation

All-purpose fermentation

In the ‘All-purpose fermentation’ subcategory, you can submit a subsidy application for almost any type of biomass. This includes manure co-fermentation for the production of heat, heat and electricity (CHP) or renewable gas. This is subject to the condition that the biogas yield from the incoming biomass stream must be at least 25 Nm³ natural gas equivalent per tonne. For combined heat and power (CHP), the rated output is determined by adding the electrical and thermal outputs.

Manure mono-fermentation

Manure mono-fermentation is used for the production of heat, heat and electricity (CHP) or renewable gas. The input must consist exclusively of livestock manure, with no co-products. There are two output categories for manure mono-fermentation: ‘≤ 400 kW’ and ‘> 400 kW’. For combined heat and power (CHP), the rated output is determined by adding the electrical and thermal outputs.

All-purpose fermentation and Manure mono-fermentation service life extension

The ‘All-purpose fermentation service life extension’ and ‘Manure mono-fermentation service life extension’ categories are for SDE projects nearing the end of their subsidy periods. Due to operating expenses and renovation expenses these projects usually still have an unprofitable component. You may submit an application if your current subsidy grant decision expires within three years. This may give you some temporary certainty around the future of your production facility.

Combined applications

You can combine applications for production facilities in the manure mono-fermentation and all-purpose fermentation categories. This may be useful if you want to implement the project in collaboration with other applicants, but only want to continue with your project if all of your partners’ applications are also approved. If the subsidy applications received on a single day exceed the available budget, we will rank the applications by subsidy intensity, in euros per tonne of CO₂

reduction. In the case of combined applications, the highest amount of the applications in the combination will apply. If it becomes necessary to draw lots, the combined applications will be treated as a single application.

Improved sludge fermentation in sewage treatment plants

The SDE++ scheme supports improved sludge fermentation for the production of renewable heat or electricity in sewage treatment plants. This subcategory does not relate to a specific technology, resulting in more opportunities to apply with innovative technologies. Moreover, sewage treatment plants vary widely in terms of size and type. For an SDE++ application, you need to show that you can increase the existing biogas production by at least 25%. The facility components responsible for the increased biogas production must be new.

Biomass combustion

The end products of renewable heat and renewable electricity are subsidised. You can apply for an SDE++ subsidy in one of nine ‘Biomass combustion’ categories.

Woody biomass for high-value heat only

Since 2021, no subsidies have been or will be granted if woody biomass (e.g. wood cuttings and chips) is used for low-value heat. Subsidies will only be granted if woody biomass is used for high-value heat of > 100°C. The 100°C requirement applies to the consumer side – the ‘consumer’ being the first user of the heat.

For the production of heat or heat and electricity from biomass, the following categories are open for application:

- Solid or liquid biomass boilers with a thermal output of between 0.5 and 5 MWth
- Liquid biomass boilers with an output of ≥ 0.5 MWth and ≤ 100 MWh
- Large solid or liquid biomass boilers with a thermal output of ≥ 5 MWth
- B-grade wood boilers with an output ≥ 5 MWth
- Service life extension for solid or liquid biomass boilers with a maximum output of < 5 MWth that have previously received an SDE subsidy
- Service life extension for solid or liquid biomass boilers with a minimum output of ≥ 5 MWth that have previously received an SDE subsidy
- Steam boilers burning sustainable wood pellets with a minimum output of ≥ 5 MWth
- Burners using sustainable wood pellets for industrial applications, with an output of ≥ 5 MWth (existing components may be used for this category). An upper limit of 100 MW electrical output applies here;
- Large boilers burning sustainable wood pellets for the built environment with an output of ≥ 10 MWth

Heat or CHP

For all nine categories, generating both heat and electricity is permitted. The base rate and correction rate are calculated on the basis of supplying heat. Accordingly, for these categories we no longer set requirements for the minimum electricity yield of the production facility. If you want to produce electricity, you may use an existing steam turbine. The [Guarantees of Origin](#) and Certificates of Origin Regulation states that heat that is used to generate electricity cannot be considered as ‘[usefully employed heat](#)’.

Liquid biomass boilers, ≥ 0.5 MWth

For the ‘Liquid biomass boilers, ≥ 0.5 MWth’ category, you can submit a subsidy application for a production facility for which you have previously received an SDE subsidy.

It seems that there are facilities that, due to changing circumstances, can now operate for more [full-load hours](#) than was previously possible. The base rate for this type of facility does not take account of the cost price of a boiler, to avoid the risk of over-incentivisation. In addition, in every production year you must fully use the previous grant before you receive any subsidy money under the later grant. You must demonstrate the sustainability of the liquid biomass every year in a report.

Service life extension

‘Service life extension’ categories have been opened for facilities in the categories of combustion of biomass (waste flows) for the generation of electricity and heat.

The ‘Service life extension’ categories are for SDE projects that are nearing the end of their subsidy periods.

Generally speaking, due to operating costs these projects still have an unprofitable component. That is why service life extension categories have been opened for these facilities. You may submit an application if your current subsidy grant decision expires within three years. In addition to a service life extension category for facilities with an output of ≥ 5 MWth, in 2022 a service life extension category has also been opened for plants with an output of < 5 MWth.

Fuel criteria

B-grade wood is excluded for most boilers. Therefore, we take into consideration the higher price for clean wood, when calculating the base rate for these facilities

Conversely, for ‘B-grade wood boilers’, the calculation of the base rate is based on the lower price paid for B-grade wood. This means the base rate for these boilers is lower.

You can also burn other types of biomass in a ‘B-grade wood boiler’. If you’ve applied for a category specifically intended for boilers using sustainable wood pellets as fuel, you may generate up to 15% of the energy production using A-grade wood pellets and up to 25% using waste flows from biomass refining. In the SDE++ scheme, “biorefining” is considered to be a process in which the primary product replaces a fossil raw material. For this reason, lignin produced by the paper industry does not meet the criteria, but lignin released in the production of sugar from wood does. If the sugar is used to make bioplastics, the lignin is considered to be a waste flow from biorefining.

If you’re using one of the following technologies: ‘Solid or liquid biomass boilers’, ‘Wood pellet steam boilers’, ‘B-grade wood boilers’, ‘Service life extension for solid or liquid biomass boilers’ or ‘Wood pellet boilers for district heating’, at least 97% of the [energy value](#) of the fuel used must be biogenic. This excludes the possibility of boilers being used for the combustion of waste or selected streams of waste, or the co-firing of natural gas.

Liquid biomass may be used in all biomass combustion facilities, but the sustainability of the liquid biomass must be demonstrated.

Sustainability criteria for biomass

The biomass used must meet sustainability criteria. Different criteria apply to the following categories:

- Wood pellet steam boilers, ≥ 5 MW
- Wood pellet burners, ≥ 5 MWth and ≤ 100 MWe
- Wood pellet boilers for district heating

Production facilities in these three categories must comply with the Regulation on the conformity assessment of solid biomass for energy applications.

For the other technologies using solid, liquid or gaseous biomass, your plant must comply with the RED II sustainability criteria if the output is higher than the set limits.

You can read more about these criteria on our website, on the [SDE+ sustainability criteria for biomass in pellet plants](#) or [SDE++ RED II sustainability criteria for biomass](#) pages.

You can use certificates from sustainability schemes approved by the European Commission for RED II to demonstrate the sustainability of your biomass. The European Commission has published its approval of sustainability schemes for RED II.

Composting

Composting releases very low-value heat. This low-value heat can be used to heat buildings or horticultural greenhouses. Next to, mushroom compost, other biomass streams can be composted in this category, from 2022. Biomass as defined in the NTA 8003: 2017 is permitted in this category. An exception is manure (numbers 300 to 329 in the NTA 8003: 2017), which is not permitted in this category. No sustainability criteria have

been set for composting, because it is assumed that production facilities will never exceed the output threshold of 20 MW.

Permits

Usually, you will require one or more permits for a biomass facility. These must be issued by the competent authority before you submit your subsidy application. The [‘Required permits’](#) page tells you which permits you might require.

Solar thermal

You can submit an application for an SDE++ subsidy under the ‘Solar thermal’ category. This category applies to systems exclusively using ‘covered’ collectors or solar tracking concentrating collectors. They must have a total thermal output of ≥ 140 kW. In your subsidy application, indicate the aperture surface area or the illuminated surface area of the mirrors or lenses that concentrates sunlight.

There are two output classes for solar thermal. Because larger systems are more cost efficient, a lower base rate applies for this category. The base energy price and correction rate also differ for small and large facilities.

Categories

- ≥ 140 kWth and < 1 MWth
- ≥ 1 MWth

Smaller systems may be eligible for the [Sustainable Energy Investment Grant](#) (ISDE).

The thermal output of the facility in kW is equal to the total aperture surface area of the covered collectors or the illuminated surface area of the mirrors or lenses for concentrating sunlight in square metres multiplied by a factor of 0.7. For a system to be eligible for a subsidy, the light-absorbing surface must form an integrated whole with the translucent layer. The translucent layer provides insulation, such as a glass sheet or tube.

The greenhouse glazing is a translucent layer and PVT also has a translucent layer, but neither of these forms an integrated whole with the light-absorbing surface. For this reason, neither is eligible for a subsidy in the ‘Solar thermal’ category. However, if you have PVT panels, you could apply for a subsidy for PVT systems within the ‘PVT panels with a heat pump’ category. This category is explained in the section on [low-carbon heat](#) technologies.

Implementation period

The implementation period for solar thermal is three years.

Feasibility study with detailed drawing

If you are applying for an SDE++ subsidy for solar thermal, you must supply a [feasibility study](#). Your feasibility study must always include a detailed scale drawing accurately depicting

the solar thermal system that is the subject of your application. If other systems are or will be installed at the site in question, please clearly indicate this fact. The drawing must also show the orientation of the system. If your system will be installed on a roof, calculate the available roof surface area, taking into account skylights and climate control systems on the roof.

Load-bearing capacity of the roof structure

If you intend to install your production system on the roof or façade of a building, you must include the [Load-bearing capacity of the roof structure](#) form with your application. This form requires the constructor to make a declaration about the load-bearing capacity of the roof or façade according to the Building Decree 2012. You must have the investigation carried out and signed off by a constructor.

‘Constructor’ means someone who can perform the necessary calculations. During the assessment of your project, RVO may ask you to send the executed calculations. If you have a constructor in your organisation who can perform the calculations, they are allowed to execute the calculations and sign the declaration.

Permits

In a number of situations, you will require one or more permits for the installation of solar collectors. These must be issued by the competent authority before you submit your subsidy application. The [Required permits](#) page tells you which permits you might require.

Geothermal heat

Geothermal heat is eligible for an SDE++ subsidy. We make a distinction between geothermal energy used for the production of renewable heat and geothermal energy used for the production of low-carbon heat.

Shallow and deep geothermal heat with a heat pump as a component of the production facility both fall into the category of low-carbon heat.

Both renewable heat and low-carbon heat include a number of subcategories:

Geothermal heat (deep and ultra-deep)

- Geothermal heat with a minimum depth of 1,500 metres and an output of:
 1. ≤ 12 MWth
 2. > 12 MWth and ≤ 20 MWth or
 3. > 20 MWth
- Geothermal heat with a minimum depth of 4,000 metres
- Geothermal heat with a minimum depth of 1,500 metres, where existing oil or gas wells are used for one or both wells in the doublet, and with an output of:
 1. ≤ 12 MWth
 2. > 12 MWth and ≤ 20 MWth or
 3. > 20 MWth
- Geothermal heat involving expansion of a production facility with at least one additional well, with a minimum depth of 1,500 metres
- Geothermal heat with a minimum depth of 1,500 metres, where the heat will be used in the built environment, with at least 5,000 full-load hours

- Geothermal heat with a minimum depth of 1,500 metres, where the heat will be used in the built environment, with at least 3,500 full-load hours

Low-carbon geothermal heat

- Geothermal heat with a minimum depth of 500 metres and a maximum depth of 1,500 metres, where the heat is upgraded using a heat pump with a COP value of at least 3.0, with 3,500 full-load hours
- Geothermal heat with a minimum depth of 500 metres and a maximum depth of 1,500 metres, where the heat is upgraded using a heat pump with a COP value of at least 3.0 and will be used in the built environment, with 6,000 full-load hours
- Geothermal heat with a minimum depth of 1,500 metres, where the heat is upgraded using a heat pump with a COP value of at least 3.0, all heat produced is used in a heating system with a supply temperature on the consumer side of at least 90°C during the heating season, and the heat is used for heating in the built environment, 6,000 full-load hours. ‘Consumer’ refers to the first user of the heat.

For these three categories, the compression heat pump must have a rated thermal output of at least 500 kWth.

Implementation period

In the 2022 round of the SDE++ scheme, the geothermal heat categories for heating in the built environment have an extended implementation period of six years, instead of four years.

The other geothermal heat categories in the 2022 round of the SDE++ scheme have a implementation period of five years (previously four years).

Geological report

Geothermal projects require a geological survey.

Attach your geological report to your subsidy application. The TNO report [‘Specifications for geological surveys for geothermal projects – SDE+ and RNES reporting requirements’](#) sets out the minimum requirements that must be met by the geological survey underpinning your SDE++ subsidy application. You can find more information on the [SDE++ website](#).

DoubletCalc calculation

TNO facilitates the geological survey. TNO has made the software package and DoubletCalc user guide available on the [Netherlands oil and gas portal \(NLOG\)](#). You can use DoubletCalc to calculate the P50 output. The user guide explains how to calculate the P50 output.

For the SDE++ scheme, the [rated output](#) for geothermal heat must be determined with a probability of at least 50%.

Permits

One or more permits are generally required for a geothermal facility. These must be issued by the competent authority before you submit your subsidy application. The [‘Required permits’](#) page tells you which permits you might require.

SDE++ 2022 phasing and rates for renewable heat and CHP	Maximum phase rate/base rate					Base energy price €/kWh	2022 provisional correction rate €/kWh	2022 provisional ETS value €/kWh	Maximum full-load hours hours/year	Contracting period years	Implementation period years	Subsidy term years
	Phase 1 €/kWh	Phase 2 €/kWh	Phase 3 €/kWh	Phase 4 €/kWh	Phase 5 €/kWh							
Biomass cogeneration of electricity and heat												
All-purpose fermentation, combined generation	0.0535	0.0557	0.0623	0.0749	0.0749	0.0271	0.0427	0.0048	7625	1.5	4	12
All-purpose fermentation, service life extension, cogeneration	0.0535	0.0557	0.0623	0.0635	0.0635	0.0271	0.0427	0.0048	7625	1.5	4	12
Manure mono-fermentation, combined generation ≤ 400 kW	0.0831	0.0868	0.0980	0.1204	0.1671	0.0459	0.0645	0.0034	4989	1.5	4	12
Manure mono-fermentation, service life extension, cogeneration ≤ 400 kW	0.0831	0.0868	0.0980	0.1204	0.1222	0.0459	0.0645	0.0034	4989	1.5	4	12
Manure mono-fermentation, combined generation, > 400 kW	0.0664	0.0701	0.0812	0.0977	0.0977	0.0287	0.0487	0.0027	6060	1.5	4	12
Sewage treatment plant improved sludge fermentation, combined generation	0.0571	0.0593	0.0659	0.0791	0.0936	0.0300	0.0479	0.0037	5728	1.5	4	12
Biomass heat												
All-purpose fermentation, heat	0.0470	0.0493	0.0560	0.0672	0.0672	0.0235	0.0295	0.0093	7000	1.5	4	12
All-purpose fermentation, service life extension, heat	0.0470	0.0493	0.0560	0.0609	0.0609	0.0235	0.0295	0.0093	7000	1.5	4	12
Manure mono-fermentation, heat ≤ 400 kW	0.0569	0.0607	0.0721	0.0948	0.1143	0.0235	0.0295	0.0093	6500	1.5	4	12
Manure mono-fermentation, service life extension, heat ≤ 400 kW	0.0569	0.0607	0.0721	0.0822	0.0822	0.0235	0.0295	0.0093	6500	1.5	4	12
Manure mono-fermentation, heat > 400 kW	0.0569	0.0607	0.0721	0.0821	0.0821	0.0235	0.0295	0.0093	6000	1.5	4	12
Sewage treatment plant improved sludge fermentation, heat	0.0470	0.0493	0.0560	0.0685	0.0685	0.0235	0.0295	0.0093	7000	1.5	4	12
Composting plant, heat	0.0462	0.0462	0.0462	0.0462	0.0462	0.0235	0.0295	0.0093	5200	1.5	4	12
Biomass heat (or the cogeneration of electricity and heat)												
Liquid biomass boilers	0.0471	0.0494	0.0563	0.0657	0.0657	0.0235	0.0295	0.0093	7000	1.5	4	12
Small solid or liquid biomass boilers	0.0475	0.0498	0.0568	0.0618	0.0618	0.0235	0.0295	0.0093	3000	1.5	4	12
Small solid or liquid biomass boilers, service life extension	0.0342	0.0342	0.0342	0.0342	0.0342	0.0235	0.0295	0.0093	3000	1.5	4	12

SDE++ 2022 phasing and rates for renewable heat and CHP	Maximum phase rate/base rate					Base energy price	2022 provisional correction rate	2022 provisional ETS value	Maximum full-load hours	Contracting period	Implementation period	Subsidy term
	Phase 1 €/kWh	Phase 2 €/kWh	Phase 3 €/kWh	Phase 4 €/kWh	Phase 5 €/kWh	€/kWh	€/kWh	€/kWh	hours/year	years	years	years
Large solid or liquid biomass boilers (4,500 full-load hours)	0.0367	0.0390	0.0461	0.0529	0.0529	0.0143	0.0191	0.0093	4500	1.5	4	12
Large solid or liquid biomass boilers (5,000 full-load hours)	0.0367	0.0390	0.0461	0.0520	0.0520	0.0143	0.0191	0.0093	5000	1.5	4	12
Large solid or liquid biomass boilers (5,500 full-load hours)	0.0367	0.0390	0.0461	0.0510	0.0510	0.0143	0.0191	0.0093	5500	1.5	4	12
Large solid or liquid biomass boilers (6,000 full-load hours)	0.0367	0.0390	0.0461	0.0503	0.0503	0.0143	0.0191	0.0093	6000	1.5	4	12
Large solid or liquid biomass boilers (6,500 full-load hours)	0.0367	0.0390	0.0461	0.0496	0.0496	0.0143	0.0191	0.0093	6500	1.5	4	12
Large solid or liquid biomass boilers (7,000 full-load hours)	0.0367	0.0390	0.0461	0.0493	0.0493	0.0143	0.0191	0.0093	7000	1.5	4	12
Large solid or liquid biomass boilers (7,500 full-load hours)	0.0367	0.0390	0.0461	0.0489	0.0489	0.0143	0.0191	0.0093	7500	1.5	4	12
Large solid or liquid biomass boilers (8,000 full-load hours)	0.0367	0.0390	0.0461	0.0485	0.0485	0.0143	0.0191	0.0093	8000	1.5	4	12
Large solid or liquid biomass boilers (8,500 full-load hours)	0.0367	0.0390	0.0461	0.0480	0.0480	0.0143	0.0191	0.0093	8500	1.5	4	12
Large solid or liquid biomass boilers, service life extension	0.0367	0.0385	0.0385	0.0385	0.0385	0.0143	0.0191	0.0093	8000	1.5	4	12
Large B-grade wood boilers	0.0289	0.0289	0.0289	0.0289	0.0289	0.0143	0.0191	0.0093	7500	1.5	4	12
Large wood pellet boilers for the built environment	0.0316	0.0339	0.0408	0.0547	0.0697	0.0111	0.0148	0.0093	6000	1.5	4	12
Large wood pellet steam boilers	0.0364	0.0387	0.0456	0.0595	0.0685	0.0143	0.0191	0.0093	8500	1.5	4	12
Direct use (burner) of wood pellets for industrial applications	0.0441	0.0464	0.0521	0.0521	0.0521	0.0212	0.0265	0.0093	3000	1.5	4	12
Geothermal heat												
Deep geothermal heat < 12 MWth (6,000 full-load hours)	0.0451	0.0494	0.0620	0.0620	0.0620	0.0111	0.0148	0.0093	6000	2.5	5	15

SDE++ 2022 phasing and rates for renewable heat and CHP	Maximum phase rate/base rate					Base energy price	2022 provisional correction rate	2022 provisional ETS value	Maximum full-load hours	Contracting period	Implementation period	Subsidy term
	Phase 1 €/kWh	Phase 2 €/kWh	Phase 3 €/kWh	Phase 4 €/kWh	Phase 5 €/kWh	€/kWh	€/kWh	€/kWh	hours/year	years	years	years
Deep geothermal heat ≥ 12 and < 20 MWth (6,000 full-load hours)	0.0437	0.0437	0.0437	0.0437	0.0437	0.0111	0.0148	0.0093	6000	2.5	5	15
Deep geothermal heat ≥ 20 MWth (6,000 full-load hours)	0.0417	0.0417	0.0417	0.0417	0.0417	0.0111	0.0148	0.0093	6000	2.5	5	15
Deep geothermal heat, conversion of existing oil and gas wells, < 12 MWth, (6,000 full-load hours)	0.0451	0.0494	0.0620	0.0620	0.0620	0.0111	0.0148	0.0093	6000	2.5	5	15
Deep geothermal heat, conversion of existing oil and gas wells, ≥ 12 and < 20 MWth (6,000 full-load hours)	0.0437	0.0437	0.0437	0.0437	0.0437	0.0111	0.0148	0.0093	6000	2.5	5	15
Deep geothermal heat, conversion of existing oil and gas wells, ≥ 20 MWth, base load (6,000 full-load hours)	0.0417	0.0417	0.0417	0.0417	0.0417	0.0111	0.0148	0.0093	6000	2.5	5	15
Deep geothermal heat, heating in the built environment (3,500 full-load hours)	0.0448	0.0491	0.0621	0.0882	0.1072	0.0111	0.0148	0.0093	3500	3.0	6	15
Deep geothermal heat, heating in the built environment (5,000 full-load hours)	0.0451	0.0494	0.0626	0.0888	0.0889	0.0111	0.0148	0.0093	5000	3.0	6	15
Deep geothermal heat, expansion of production facility by at least one extra well (6000 full-load hours)	0.0310	0.0310	0.0310	0.0310	0.0310	0.0111	0.0148	0.0093	6000	2.5	5	15
Ultra-deep geothermal heat (7000 full-load hours)	0.0452	0.0496	0.0628	0.0681	0.0681	0.0111	0.0148	0.0093	7000	2.5	5	15
Solar heat												
Solar thermal energy, ≥ 140 kWth and < 1 MWth	0.0523	0.0546	0.0613	0.0749	0.0949	0.0288	0.0348	0.0093	600	1.5	3	15
Solar thermal energy, ≥ 1 MWth	0.0470	0.0493	0.0560	0.0696	0.0808	0.0235	0.0295	0.0093	600	1.5	3	15

Renewable gas



Renewable gas

The SDE++ ‘Renewable gas’ category is divided into the following technologies: ‘biomass fermentation’ and ‘biomass gasification’.

This section explains about the general conditions for the production of renewable gas in the 2022 round of the SDE++ scheme and the specific application conditions that apply to each technology. The table ‘SDE++ 2022 phasing and rates for renewable gas’ at the end of this section contains an overview of the categories, associated phase amounts, full-load hours and other key figures.

A condition in the SDE++ scheme is that the gas produced must meet the quality requirements of the gas network operator. In addition, you must actually feed the gas into a gas network.

Biomass fermentation

All-purpose fermentation

You can submit a subsidy application under the ‘All-purpose fermentation’ category for nearly all types of biomass, including co-fermentation of manure. This is subject to the condition that the biogas yield from the incoming biomass stream must be at least 25 Nm³ natural gas equivalent per tonne.

Manure mono-fermentation

Manure mono-fermentation can be used to produce renewable gas. The input must consist exclusively of livestock

manure, with no co-products. There are two output categories for manure mono-fermentation: ‘≤ 400 kW’ and ‘> 400 kW’.

All-purpose fermentation and Manure mono-fermentation service life extension

The ‘All-purpose fermentation service life extension’ and ‘Manure mono-fermentation service life extension’ categories are for SDE projects nearing the end of their subsidy periods. Due to operating expenses and renovation expenses these projects usually still have an unprofitable component. Based on market interest, PBL has issued an opinion on the conversion of a CHP plant to renewable gas. This kind of upgrading system would require a substantial investment. Accordingly, this SDE++ category is only open for the conversion of CHP plants to renewable gas. You may submit an application if your current subsidy grant decision will expire within three years. This may give you some temporary certainty around the future of your plant.

Sewage treatment plants

The SDE++ scheme supports improved sludge fermentation for the production of renewable heat electricity and heat (CHP) or renewable gas in sewage treatment plants. This subcategory does not relate to a specific technology, which means there are more opportunities to apply for innovative technologies. Moreover, sewage treatment plants vary widely in terms of size and type. For an SDE++ application, you need to show that you can increase the existing biogas production by at least 25%.

The facility components responsible for the increased biogas production must be new.

Another subcategory is ‘Existing sludge fermentation at sewage treatment plants with reprocessing into renewable gas’. This subcategory is for sludge fermentation systems without increased production.

The gas reprocessing facility must be new. This subcategory is designed for projects to upgrade biogas to renewable gas, which can then be fed into the natural gas network.

Biomass gasification

Two categories are open for the production of renewable gas from biomass gasification. Biosyngas is not eligible for the subsidy. This is because biosyngas must first be converted to methane before it can be fed into the gas network.

- Biomass gasification, excluding B-grade wood
- Biomass gasification including gasification of B-grade wood

Fuel criteria

When calculating the base rate for ‘Gasification, excluding B-grade wood’, we take account of the higher price for clean wood.

Conversely, for ‘Gasification of B-grade wood’, the calculation of the base rate is based on the lower price paid for B-grade wood. This results in a lower base rate for this category. You can also use other types of biomass under the ‘Gasification of B-grade wood’ category.

Sustainability criteria for biomass

If your production facility feeds ≥ 2 MW of renewable gas into the natural gas network, the RED II sustainability criteria will apply to your facility. These criteria are described on our website on the [SDE++ RED II sustainability criteria for biomass](#) page.

Permits

Usually, you will require one or more permits for a biomass facility. These must be issued by the competent authority before you submit your subsidy application. The '[Required permits](#)' page tells you which permits you might require.

Combined applications

You can combine applications for production facilities that are part of a renewable gas hub. This may be useful if you want to implement the project in collaboration with other applicants, but only if all of your partners' applications are also approved. If the subsidy applications received on a single day exceed the available budget, we will rank the applications by subsidy intensity, in euros per tonne of CO₂ reduction. In the case of combined applications, the highest amount of the applications in the combination will apply. If it becomes necessary to draw lots, the combined applications will be treated as a single application.

<i>SDE++ 2022 phasing and rates for renewable gas</i>	Maximum phase rate/base rate					Base energy price	2022 provisional correction rate	Maximum full-load hours	Contracting period	Implementation period	Subsidy term
Category	Phase 1 €/kWh	Phase 2 €/kWh	Phase 3 €/kWh	Phase 4 €/kWh	Phase 5 €/kWh	€/kWh	€/kWh	hours/year	years	years	years
Renewable gas (fed into the gas network)											
All-purpose fermentation, gas	0.0333	0.0351	0.0406	0.0516	0.0701	0.0143	0.0191	8000	1.5	4	12
Manure mono-fermentation > 400 kW, gas	0.0432	0.0466	0.0567	0.0768	0.0777	0.0143	0.0191	8000	1.5	4	12
Manure mono-fermentation ≤ 400 kW, gas	0.0432	0.0466	0.0567	0.0768	0.1111	0.0143	0.0191	8000	1.5	4	12
All-purpose fermentation, service life extension, gas (new gas upgrading system)	0.0333	0.0351	0.0406	0.0516	0.0608	0.0143	0.0191	8000	1.5	4	12
All-purpose fermentation, service life extension, gas	0.0333	0.0351	0.0406	0.0516	0.0578	0.0143	0.0191	8000	1.5	4	12
Manure mono-fermentation, service life extension, ≤ 400 kW, gas (new gas upgrading system)	0.0432	0.0466	0.0567	0.0768	0.0974	0.0143	0.0191	8000	1.5	4	12
Manure mono-fermentation, service life extension, ≤ 400 kW, gas	0.0432	0.0466	0.0567	0.0768	0.0911	0.0143	0.0191	8000	1.5	4	12
Sewage treatment plant improved sludge fermentation, gas	0.0333	0.0351	0.0406	0.0516	0.0763	0.0143	0.0191	8000	1.5	4	12
Sewage treatment plant existing sludge fermentation (new gas upgrading system)	0.0320	0.0320	0.0320	0.0320	0.0320	0.0143	0.0191	8000	1.5	4	12
Biomass gasification (including B-grade wood)	0.0337	0.0356	0.0413	0.0526	0.0683	0.0143	0.0191	7500	1.5	4	12
Biomass gasification (excluding B-grade wood)	0.0333	0.0351	0.0406	0.0516	0.0763	0.0143	0.0191	7500	1.5	4	12

Low-carbon heat



Low-carbon heat

In 2022, the 'Low-carbon heat' SDE++ category is divided into the following technologies:

'Aquathermal', 'Daylight greenhouses', 'PVT panels with a heat pump', 'Electric boilers', '(Shallow) geothermal heat', 'Industrial heat pumps', 'Use of waste heat' and 'Hybrid glass furnaces'.

This section explains you about the general conditions for the production of low-carbon heat in the 2022 round of the SDE++ scheme and the specific application conditions that apply to each technology. The table 'SDE++ 2022 phasing and rates for low-carbon heat' at the end of this section contains an overview of the categories, associated phase amounts, full-load hours and other key figures.

Low-carbon heat is heat that doesn't origin, or only partially origins, from a renewable source, but that has lower CO₂ emissions than a gas-fired facility. The SDE++ scheme contains a number of specific options to reduce CO₂ emissions.

The heat that is eligible for the subsidy is heat that is not origin, or only partially origins, from a renewable source..

Consequently, when determining the produced heat, the system of measurement and certification as described in the [Guarantees of Origin and Certificates of Origin Regulation cannot be used](#). For that reason, extra provisions were included in the General Implementing Regulation. These

provisions explain how we establish what is '[usefully employed heat](#)'. They also contain requirements for establishing the suitability of the production facility, the installation and classification of meters and how the measurement report should be drafted.

Emissions Trading System (ETS)

Does your facility benefits from the ETS?

Then the ETS benefit will be factored into the correction rate. This situation may change during the production period. Then it is possible to adjust this correction during the production period.

Aquathermal

The SDE++ scheme includes technologies that extract heat from water for heating in the built environment or for direct supply to businesses. The temperature of the heat is increased using a heat pump.

Thermal energy from surface water

This type of system extracts heat from surface water or seawater. In the 2022 round of the SDE++ scheme, you can apply for thermal energy from surface water with and without heat storage. 'Heat storage' means storing the heat in a seasonal storage system. The heat is taken out of the seasonal storage system during the heating season.

The supply of cooling is no longer excluded.

Allowing the supply of cooling will have a positive effect on the

business case. That is why the base rates have been adjusted. You will only receive a subsidy for the supply of heat. The supply of cooling does not have to be metered.

Four categories are open:

- Heating exclusively in the built environment, with seasonal storage for heat, base load (6,000 hours)
- Heating exclusively in the built environment, base load (6,000 hours)
- Heating exclusively in the built environment, with seasonal storage, no base load (3,500 hours)
- Direct use, with seasonal storage (3,500 hours)

The same technical preconditions apply to these categories. To be eligible for a subsidy, your system must meet the following criteria:

- The heat pump must deliver a thermal output of at least 0.5 MWth and have a COP value of at least 3.0

The categories with 6,000 full-load hours are intended for production facilities that feed into a major heating network in which the heat pump can operate with a base load. The category for the built environment with 3,500 full-load hours is for production facilities in which the heat pump does not operate with a base load. There is also a category for direct use. This allows heat to be supplied directly to a consumer. For example, the heat may be used in greenhouse horticulture.

Thermal energy from waste water or drinking water

This type of system extracts heat from waste water or drinking water. A heat pump increases the temperature. The system is subject to technical preconditions.

To be eligible for a subsidy, your system must meet the following criteria:

- The heat pump must deliver a thermal output of at least 0.5 MWth and have a COP value of at least 3.0
- You must use the heat exclusively for heating in the built environment
- The system may not supply cooling

Daylight greenhouses

Some crops in horticultural greenhouses prefer less direct sunlight. In these cases, you can trap some of the incoming sunlight using a solar tracking thermal system. You can then store the heat in a seasonal storage system. The system uses almost the entire greenhouse roof to capture heat. The heat is taken out of the seasonal storage system during the heating season. You can use a heat pump to increase the temperature, then use the heat to heat the greenhouse. The system is subject to certain technical preconditions.

Feasibility study with detailed drawing

If you are applying for an SDE++ subsidy for daylight greenhouses, you must supply a [feasibility study](#). When submitting a subsidy application, with your feasibility study you must always include a detailed scale drawing accurately depicting the daylight greenhouse that is the subject of your application.

Thermal energy from surface water calculation example

This example assumes a production facility for the production of heat extracted from surface water and upgraded using a heat pump with a nominal thermal output of 2 MWth that operates for 3,500 hours per year and uses seasonal storage. This example is based on a production facility that is not part of an ETS plant. Accordingly, this example does not include an ETS value in the provisional correction rate.

Category: Thermal energy from surface water with seasonal storage, direct use

Maximum application amount in Phase 4	€0.0484/kWh
Maximum application amount in Phase 5	€0.0642/kWh
2022 provisional correction rate	€0.0148/kWh
Provisional 2022 SDE++ subsidy for the maximum application amount in Phase 4:	$4.84 - 1.48 = 3.36$ € cents/kWh = €33.60/MWh
Provisional 2022 SDE++ subsidy for the maximum application amount in Phase 5:	$6.42 - 1.48 = 4.94$ € cents/kWh = €49.40/MWh
Maximum number of full-load hours eligible for the subsidy	3,500 full-load hours
Total rated output	2 MWth
Maximum annual production eligible for a subsidy for a facility with a 2 MWth output	$2 * 3,500 = 7,000$ MWh
Provisional 2022 SDE++ subsidy for the maximum application amount in Phase 4:	$7,000 * €33.60 = €235,200$
Provisional 2022 SDE++ subsidy for the maximum application amount in Phase 5:	$7,000 * €49.40 = €345,800$

To be eligible for a subsidy, you must meet the following criteria:

- The solar tracking collector system must form an integral part of a new horticultural greenhouse
- The power output of the solar collector must be at least four times the power output of the heat pump to be installed. This will ensure enough heat generation by the solar collector to completely fill the seasonal storage system
- You cannot use the seasonal storage system for cooling. Generally speaking, systems that include cooling do not have an unprofitable component
- The heat pump must have a thermal output of at least 0.5 MWth and a COP value of at least 5.0

PVT panels with a heat pump

Under the SDE++ scheme, you can apply for a subsidy for the production of low-carbon heat in a solar thermal system that uses solar collectors, simultaneously produces heat and electricity, and uses a heat pump to increase the temperature of the heat. The heat must be used for heating in the built environment.

The surface area of the photovoltaic thermal collectors in the production system must be at least 1.2 m² per kWth of the heat pump. The heat pump to which the collectors are connected must have an output of at least 500 kWth and a COP of at least 3.0.

This category only applies to photovoltaic thermal panels; ordinary uncovered solar heat collectors are excluded from the scheme.

Feasibility study with detailed drawing

If you are applying for an SDE++ subsidy for PVT panels with a heat pump, you must supply a [feasibility study](#). When submitting a subsidy application, with your feasibility study you must always include a detailed scale drawing accurately depicting the PVT system that is the subject of your application. If other systems are or will be installed at the site in question, please clearly indicate this fact. The drawing must also show the orientation of the system. If your system will be installed on a roof, calculate the available roof surface area, taking into account skylights and climate control systems on the roof.

Load-bearing capacity of the roof structure

If you intend to install your system on the roof or façade of a building, you must include the '[Load-bearing capacity of the roof structure](#)' form with your application. This form requires the constructor to make a declaration about the load-bearing capacity of the roof structure according to the Building Decree 2012. The investigation must be carried out and signed off by a constructor. 'Constructor' means someone who can perform the necessary calculations. During the assessment of your project, RVO may ask you to send the executed calculations. If you have a constructor in your organisation who can perform the calculations, they are allowed to execute the calculations and sign the declaration.

Electric boilers

With support from an SDE++ subsidy, you can generate heat for businesses using an electric boiler instead of a gas boiler. You can also employ hybrid boilers that use both gas and electricity to supply heat. The boiler must be new; the

conversion of a gas boiler already present at the site to a hybrid boiler is not permitted. For hybrid boilers, both the heat and the electricity used must be measured. You will receive a subsidy for the heat generated from electricity only.

The system is subject to certain technical preconditions. To be eligible for a subsidy, you must meet the following criteria:

- The electric boiler must have a thermal output of at least 5 MWth
- The heating system that the heat is fed into must have a supply temperature on the consumer side of at least 100°C during the heating season, or it will be classified as a steam system. Consumer refers to the first user of the heat. There are no conditions on the heat outside of the heating season. This condition allows for broader use of heat than just in the industry. At the same time, it prevents electric boilers from being used in situations where a heat pump would be preferable due to its higher COP value.
- The capacity of the connection to the electricity grid must be at least as high as the output of the electric boiler
- The combined output of the electric boilers already present at the site and those that are yet to be installed must not be higher than the thermal output of the boilers present at the site that are fired with fossil fuels and the maximum thermal output that they can supply simultaneously.

Production hours and full-load hours

To ensure that switching on an electric boiler does not result in more emissions than switching on a gas-fired boiler, the number of production hours is capped at 7,000 hours.

This number cannot be exceeded even if you bank your underproduction. In any given year, if you are unable to achieve the number of [full-load hours](#) (4,300), you can [bank](#) the shortfall and make it up in subsequent years.

From this round onwards, banking of overproduction is no longer excluded.

Geothermal heat (shallow and deep)

You can find information about the ‘Geothermal heat (shallow and deep)’ category, in which a heat pump is used, under the ‘Geothermal heat’ category in the [‘Renewable heat’](#) section.

Use of waste heat

Industrial processes, data centres and other businesses can produce [waste heat](#). The temperature of this heat is too low for the business itself to use it. Through the SDE++ scheme, we want to make it possible for this heat to be used elsewhere. It could also be supplied to a district heating network. The supply of steam is excluded from this category, as it does not involve an unprofitable component. To be eligible for an SDE++ subsidy, the waste heat must be transported from the production site to a different location.

There are two possible scenarios:

Without a heat pump

The temperature of the waste heat is sufficient for other users. There are differentiated subsidy rates, depending on the length of the transport pipeline per unit of output. The system is subject to certain technical preconditions. To be eligible for a subsidy, you must meet the following criteria:

- The output connection must have a thermal capacity of at least 2 MWth
- The length of the transport pipeline must be at least 0.1 km/MWh

With a heat pump

The temperature of the waste heat is too low to be directly usable by other users. A heat pump can be used to increase the temperature. The system is subject to certain technical preconditions. To be eligible for a subsidy, you must meet the following criteria:

- The output connection must have a thermal capacity of at least 2 MWth
- The heat pump must be new, deliver a thermal output of at least 500 kWth and have a COP value of at least 3.0
- The length of the transport pipeline must be at least 0.1 km/MWh

The party with waste heat available, sets up the output connection and uses the heat transport network, is the party that should apply for a subsidy. If multiple parties are involved, they should join together and form a project entity or partnership for the purposes of the subsidy application. The SDE++ scheme focuses on the output connection for waste heat from a heat source, including the facilities required to supply the waste heat to the consumer (business or district heating network). The distribution network is therefore not covered by the SDE++ scheme.

Industrial heat pumps

Industrial enterprises can also use low-temperature heat themselves by using an electric heat pump to increase the temperature. Through the SDE++ scheme we’re enabling this unusable heat to be upgraded to a higher level, making it usable for industrial applications.

Greenhouse horticulture is not considered to be an industrial application. Under this category, you can also make steam usable so it can be reinjected into a process. The heat produced must be used at the same site. In addition, the facility may not be used to supply cooling.

In the 2022 round of the SDE++ scheme, we distinguish between the categories based on full-load hours (3,000 hours or 8,000 hours). Until now, the SDE++ scheme only had categories for industrial heat pumps with 8,000 full-load hours. The new categories for 3,000 full-load hours, facilitates facilities that operate for less hours and thus cannot achieve 8,000 full-load hours still have the opportunity to get a subsidy. The categories for 3,000 full-load hours have a higher base rate. To prevent over-incentivisation, for these categories the number of [production hours](#) per year is capped at 4,000 hours.

In addition to differentiation based on full-load hours, we distinguish between the following two situations:

With a closed-loop heat pump

The system is subject to certain technical preconditions. To be eligible for a subsidy, you must meet the following criteria:

- The heat pump must have a thermal output of at least 0.5 MWth and a COP value of at least 2.3

With an open-loop heat pump

The system is subject to certain technical preconditions. To be eligible for a subsidy, you must meet the following criteria:

- The heat pump must have a thermal output of at least 0.5 MWth, a minimum COP value of 2.3 and a maximum COP value of 12.0. This upper limit has been added because it is not clear whether projects with a higher COP value require support.

Permits

Facilities usually require one or more permits. These must be issued by the competent authority before you submit your subsidy application. The [‘Required permits’](#) page tells you which permits you might require.

Hybrid glass furnaces

With support from the SDE++ scheme, you can generate heat in a hybrid glass furnace using electricity. The furnace must be new; the conversion of a furnace already present at the site is not permitted. Because heat is difficult to measure in glass furnaces, the electricity consumed must be measured instead. The subsidy is paid based on the electricity used to generate heat.

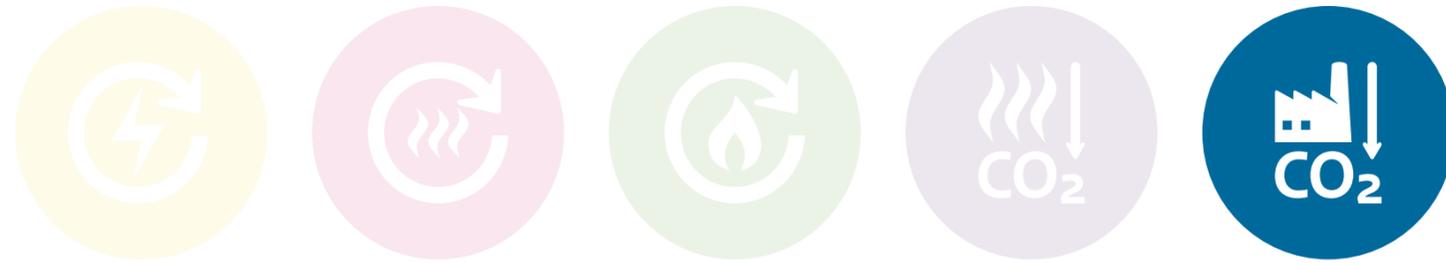
The system is subject to certain technical preconditions. To be eligible for a subsidy, you must meet the following criteria:

- The hybrid glass furnace must have an electrical connection capacity of at least 500 kW
- The electrical capacity of the hybrid glass furnace must be at least 80% of the rated thermal output of the furnace.

SDE++ 2022 phasing and rates for low-carbon heat	Maximum phase rate/base rate					Floor price or base price €/kWh	2022 provisional correction rate €/kWh	2022 provisional ETS value €/kWh	Maximum full-load hours hours/year	Contracting period years	Implementation period years	Subsidy term years
	Phase 1 €/kWh	Phase 2 €/kWh	Phase 3 €/kWh	Phase 4 €/kWh	Phase 5 €/kWh							
Geothermal heat												
Shallow geothermal heat with a heat pump, heating in the built environment (3,500 full-load hours)	0.0414	0.0452	0.0567	0.0796	0.1160	0.0111	0.0148	0.0093	3500	3.0	6	15
Shallow geothermal heat with a heat pump (6,000 full-load hours)	0.0414	0.0452	0.0567	0.0768	0.0768	0.0111	0.0148	0.0093	6000	2.5	5	15
Deep geothermal heat with a heat pump, heating in the built environment (6,000 full-load hours)	0.0412	0.0450	0.0563	0.0790	0.0978	0.0111	0.0148	0.0093	6000	3.0	6	15
Water												
Aquathermal, thermal energy from surface water with seasonal storage, heating in the built environment (3,500 full-load hours)	0.0285	0.0303	0.0358	0.0468	0.0715	0.0111	0.0148	0.0093	3500	1.5	4	15
Aquathermal, thermal energy from surface water with seasonal storage, heating in the built environment (6000 full-load hours)	0.0285	0.0303	0.0358	0.0468	0.0715	0.0111	0.0148	0.0093	6000	1.5	4	15
Aquathermal, thermal energy from surface water, heating in the built environment (6,000 full-load hours)	0.0289	0.0308	0.0364	0.0478	0.0547	0.0111	0.0148	0.0093	6000	1.5	4	15
Aquathermal, thermal energy from surface water with seasonal storage, direct use (3,500 full-load hours)	0.0291	0.0311	0.0369	0.0484	0.0642	0.0111	0.0148	0.0093	3500	1.5	4	15
Aquathermal, thermal energy from drinking water and waste water (6,000 full-load hours)	0.0288	0.0307	0.0364	0.0477	0.0731	0.0111	0.0148	0.0093	6000	1.5	4	15
Solar												
Solar PVT systems with heat pump	0.0441	0.0441	0.0441	0.0441	0.0441	0.0288	0.0348	0.0093	3500	1.5	4	15
Daylight greenhouses	0.0342	0.0362	0.0421	0.0540	0.0771	0.0143	0.0191	0.0093	3850	1.5	4	15
Electrification												
Closed-loop industrial heat pump systems (3,000 full-load hours)	0.0337	0.0356	0.0412	0.0526	0.0778	0.0143	0.0191	0.0093	3000	1.5	4	12
Closed-loop industrial heat pump systems (8,000 full-load hours)	0.0337	0.0356	0.0381	0.0381	0.0381	0.0143	0.0191	0.0093	8000	1.5	4	12

SDE++ 2022 phasing and rates for low-carbon heat	Maximum phase rate/base rate					Floor price or base price €/kWh	2022 provision- al correction rate €/kWh	2022 provisional ETS value €/kWh	Maximum full-load hours hours/year	Contract- ing period years	Imple- mentation period years	Subsidy term years
	Phase 1 €/kWh	Phase 2 €/kWh	Phase 3 €/kWh	Phase 4 €/kWh	Phase 5 €/kWh							
Open-loop industrial heat pump systems (3,000 full-load hours)	0.0349	0.0370	0.0432	0.0556	0.0836	0.0143	0.0191	0.0093	3000	1.5	4	12
Open-loop industrial heat pump systems (8,000 full-load hours)	0.0349	0.0370	0.0395	0.0395	0.0395	0.0143	0.0191	0.0093	8000	1.5	4	12
Large-scale electric boilers	0.0361	0.0384	0.0451	0.0587	0.0604	0.0143	0.0191	0.0093	4300	1.5	4	15
Hybrid glass furnaces	0.0524	0.0536	0.0574	0.0651	0.0821	0.0294	0.0441	0.0101	8760	1.5	4	15
Use of waste heat												
Use of waste heat with a heat pump, length-to-output ratio ≥ 0.10 and < 0.20 km/MWth	0.0287	0.0306	0.0362	0.0474	0.0501	0.0111	0.0148	0.0093	5500	1.5	4	15
Use of waste heat with a heat pump, length-to-output ratio ≥ 0.20 and < 0.30 km/MWth	0.0287	0.0306	0.0362	0.0473	0.0535	0.0111	0.0148	0.0093	5500	1.5	4	15
Use of waste heat with a heat pump, length-to-output ratio ≥ 0.30 and < 0.40 km/MWth	0.0287	0.0306	0.0361	0.0473	0.0570	0.0111	0.0148	0.0093	5500	1.5	4	15
Use of waste heat with a heat pump, length-to-output ratio ≥ 0.40 km/MWth	0.0287	0.0305	0.0361	0.0473	0.0604	0.0111	0.0148	0.0093	5500	1.5	4	15
Use of waste heat (without a heat pump), length-to-output ratio ≥ 0.10 and < 0.20 km/MWth	0.0141	0.0141	0.0141	0.0141	0.0141	0.0111	0.0148	0.0093	5500	1.5	4	15
Use of waste heat (without a heat pump), length-to-output ratio ≥ 0.20 and < 0.30 km/MWth	0.0181	0.0181	0.0181	0.0181	0.0181	0.0111	0.0148	0.0093	5500	1.5	4	15
Use of waste heat (without a heat pump), length-to-output ratio ≥ 0.30 and < 0.40 km/MWth	0.0221	0.0221	0.0221	0.0221	0.0221	0.0111	0.0148	0.0093	5500	1.5	4	15
Use of waste heat (without a heat pump), length-to-output ratio ≥ 0.40 km/MWth	0.0261	0.0261	0.0261	0.0261	0.0261	0.0111	0.0148	0.0093	5500	1.5	4	15

Low-carbon production



Low-carbon production

The 'Low-carbon production' SDE++ category is divided into the following technologies: 'Electrolytic hydrogen', 'CO₂ capture and storage', 'CO₂ capture and use in greenhouse horticulture' and 'Advanced renewable fuels'. This section explains you about the general conditions for low-carbon production in the 2022 round of the SDE++ scheme and the specific application conditions that apply to each technology. The table 'SDE++ 2022 phasing and rates for low-carbon production' at the end of this section contains an overview of the categories, associated phase amounts, full-load hours and other key figures.

Electrolytic hydrogen, grid-connected

At the moment, most hydrogen is still produced in a furnace using natural gas, because this method is cost-efficient. But using electrolysis powered by renewable electricity for the production of hydrogen reduces CO₂ emissions. Such a system is eligible for a subsidy if its hydrogen production capacity is at least 0.5 MW.

Production hours and full-load hours

To ensure that switching on a grid-connected electrolyser does not result in more emissions than switching on an SMR, the number of production hours is capped at 5,000 hours. This number cannot be exceeded even if you [bank](#) your underproduction. In any given year, if you are unable to make

the number of [full-load hours](#) (4,200), you can bank the shortfall and make it up in subsequent years. From this round onwards, banking of overproduction is no longer excluded.

Electricity consumption

It is deemed that a hydrogen production facility will only be used if there is excess renewable electricity available. At other times, power consumption must be kept to a minimum to prevent greenhouse gas emissions. Accordingly, in your application you must show that the facility, while in standby mode, is capable of using only 1% electricity compared to the maximum capacity of the facility.

Electrolytic hydrogen, direct line

In addition to the grid-connected systems described above, it is now possible under the SDE++ scheme to produce hydrogen from electrolysis using electricity supplied via a direct line from a solar or wind farm.

A system is eligible for a subsidy if its hydrogen production capacity is at least 0.5 MW. Because the electricity is always sustainably produced, the [full-load hours](#) (6,154) are higher than for grid-connected systems. You can receive a subsidy if your facility is operating and at the same time sufficient renewable electricity is being generated and supplied via the direct line. If you want to produce hydrogen all year round, the solar or wind farm must have sufficient overcapacity. No subsidy may or will be granted for the renewable electricity used.

Electricity consumption

It is deemed that a hydrogen production facility will only be used if there is excess renewable electricity. At other times, power consumption must be kept to a minimum to prevent greenhouse gas emissions. Accordingly, in your application you must show that the facility is capable of using only 1% electricity compared to the energy output of the facility during operation.

CO₂ capture and storage (CCS)

CCS is a CO₂-reducing interim solution for businesses which, in the short term, cannot make their processes carbon-neutral in any other way. The reasons may be both technical and financial. The captured CO₂ is stored in empty gas fields under the sea. If you would like to receive support from the SDE++ scheme for CCS, as a producer you have to capture the CO₂ yourself. The scheme is only open to storage in gas fields in the Netherlands and the Dutch part of the continental shelf.

Base amounts and production limits

In the spring of 2022, the Minister has commissioned an external study into the transport and storage tariff of CCS. Based on this review the base amounts for CCS are raised in comparison to the primary publication of the Allocation Regulations for SDE categories (published on May 4, 2022). On the page ['laws and regulations'](#) you can find the most up-to-date publications. Due to the raised tariff for transport and storage the production limit for 2022 for the industry has been adjusted to 5.3 Mt per year. This amount is converted to

79.5 million ton carbon dioxide because CCS subsidies are granted over a period of 15 years. The adjustment of the production limit is necessary as it is otherwise possible that relatively few other techniques will be eligible for subsidy within the SDE++ 2022 application round. CCS remains sufficiently stimulated.

The production limit for the electricity sector remains unchanged and is 3 Mt per year. Based on the Standard Industrial Classification (SBI) codes a distinction is made between the production limits for the industry and for the electricity sector.

If more CCS applications, than the CCS production limits allow, are received on a single day, we will rank the CCS applications by subsidy intensity.

ETS or non-ETS company

If the site where the capture facility will be installed benefits from the Emissions Trading System (ETS), this ETS benefit will be factored into the correction rate. For non-ETS companies, such as WIPs, that want to carry out CCS, the correction rate is 0. For this reason, separate categories have been opened for ETS and non-ETS companies.

Combination with CCU

For producers who want to carry out both CCS and CCU with a single capture facility, the scheme is open to applications for CCS/CCU combinations. PBL calculates the base rates and some combinations will result in over-subsidization. That is why not all combinations are possible.. The permitted combinations are shown in the tables [CO₂ capture and storage \(CCS\) for ETS](#)

[companies](#) and [CO₂ capture and storage \(CCS\) for non-ETS companies](#). Combinations are possible if you apply for CCS and CCU in the same application round or if you have already been granted a subsidy for CCU in a previous application round.

Combining subsidies for CCS with a single capture facility

It is possible to combine different grant decisions for CCS from different application rounds into a single CO₂ capture facility. PBL calculates the base rates and some combinations will result in over-subsidization. That is why not all Fas are possible. Combining subsidies in this way is limited to CCS categories involving a new capture facility with 8,000 full-load hours. The subsidy in respect to the various grant decisions is paid out annually in the order of the issued decisions.

Permits

Different submission requirements apply for CCS. The [‘Required permits’](#) page tells you which permits you might require. The permits relate to the new components of your facility that need to be installed: the capture and (where applicable) liquefaction facility.

Transport and storage capacity declaration and report

If you will not be taking care of the transport and storage yourself, your subsidy application for CCS must include one or more declarations about the available capacity. The declarations must be issued by the party or parties who will be responsible for the transport or permanent storage of the captured CO₂. This ensures us that the capacity you are applying for can actually be stored. To substantiate your project, use the ‘Transport and storage capacity declaration template’, which you can find on the [SDE++ website](#). The party

that fills in the ‘Transport and storage capacity declaration template’ must also present a report about the storage capacity it is offering. This report will be assessed by TNO-AGE. The ‘Transport and storage declaration required information report template’ for CCS has a mandatory section structure. The report must be no more than 80 pages.

CO₂ capture and storage (CCS) for ETS companies

Process		Capture facility		Transport in gaseous form by pipeline, compressor must be new			Transport in liquid form (by ship/lorry)					
		Existing/new	Full-load hours	MRAC article	Base rate	PBL variant	CCU combo MRAC article	Liquefaction facility	MRAC article	Base rate	PBL variant	CCU combo MRAC article
Existing	Process	Undefined	4000	85.1.a.1	148.6825	1A	CCU liquid and gas 89.1.a, c-g	Undefined	85.1.a.3	131.5674	1B	CCU liquid 89.1.a, c-g
				85.1.b.1		2A			85.1.a.2	174.2395	1C	CCU gas 89.1.a, c-g
New	Combustion process	New	8000	85.1.c.1	97.9525	3A	Not possible	New	85.1.b.2	133.1080	2B	Not possible
Existing				85.1.f.1	125.0354	7A			85.1.c.2	156.9544	3B	
Existing				85.1.e.1	106.2463	5A			85.1.f.2	141.8014	7B	
New				85.1.g.1	157.9840	8A			85.1.e.2	189.1134	5B	
New				85.1.d.1	141.8856	4A			85.1.g.2	171.3721	8B	
New	Conversion of waste gases to hydrogen							85.1.d.2	192.3477	4B		

CO₂ capture and storage (CCS) for non-ETS companies

Process		Capture facility		Transport in gaseous form by pipeline, compressor must be new			Transport in liquid form (by ship/lorry)					
		Existing/new	Full-load hours	MRAC article	Base rate	PBL variant	CCU combo MRAC article	Liquefaction facility	MRAC article	Base rate	PBL variant	CCU combo MRAC article
Existing	Process	Undefined	4000	87.1.a.1	148.6825	1A	CCU liquid and gas 89.1.a, c-g	Undefined	87.1.a.3	131.5674	1B	CCU liquid 89.1.a, c-g
				87.1.b.1	97.9525	2A			87.1.a.2	174.2395	1C	CCU gas 89.1.a, c-g
New	Combustion process	New	8000	87.1.c.1	125.0354	3A	Not possible	New	Not possible	133.1080	2B	Not possible
Existing				87.1.g.1	106.2463	7A			87.1.c.2	156.9544	3B	
Existing				87.1.e.1	157.9840	5A			87.1.g.2	141.8014	7B	
New				87.1.h.1	141.8856	8A			87.1.e.2	189.1134	5B	
New				87.1.d.1	158.4041	4A			87.1.h.2	171.3721	8B	
Existing	Waste incineration plant								192.3477	4B		
				87.1.f.1	172.2732	6A			87.1.f.2	207.5591	6B	

Combustion process = These categories are only open for post-combustion CO₂ capture (applications for CO₂ capture in processes such as SMR, ATR and POX cannot be submitted in these categories)

MRAC = Ministerial regulation designating the categories for the 2022 round of the SDE++ scheme

PBL = Variant as identified by the PBL in the calculations for the 2022 SDE++ base rates

Implementation agreement and bank guarantee

If you are applying for a subsidy for a new capture facility or liquefaction facility or for a subsidy of more than €400 million the following additional conditions apply:

- Within two weeks after the subsidy grant decision is issued, you must sign an implementation agreement with the government.
- Within four weeks after the subsidy grant decision is issued, you must supply a bank guarantee.

Progress requirements

Owing to the scale of this type of project, a longer contracting period (3 years) and implementation period (6 years) apply to this category. To enable progress to be monitored, within one year of the subsidy being granted a full permit application for the storage fields must be submitted to the Ministry of Economic Affairs and Climate Policy. In addition, within three years of the subsidy being granted you must send the full permit obtained under the Environmental Permitting (General Provisions) Act (Wabo) for the capture facility, and, where applicable, the liquefaction facility, to RVO.

If these milestones are not met, the subsidy may be withdrawn and the bank guarantee may be cashed in.

Determining production

The values measured during production must be sent to RVO each month. An annual declaration must be prepared at the end of each calendar year to show that the captured CO₂ was actually stored.

CO₂ capture and use in greenhouse horticulture (CCU)

In addition to storage of CO₂, it is also possible to obtain a subsidy for using captured CO₂ in greenhouse horticulture. Because the emission factor is calculated on the basis of avoiding ‘summer heating’, only the use of CO₂ in greenhouse horticulture is eligible for a subsidy.

In the [feasibility study](#), provide a comprehensive explanation on how you plan to arrange the sale of the CO₂ to greenhouse horticulture companies. The ‘CO₂ capture and use in greenhouse horticulture (CCU)’ table, shows the distinction between situations.

Combination with CCS

For producers who want to carry out both CCS and CCU with a single capture facility, the scheme is open to applications for CCS/CCU combinations. PBL calculates the base rates and some combinations will result in over-subsidization. That is why not all combinations are possible. The table below shows the possible combinations if you want to combine CCS and CCU and submit an application in the same application round.

Implementation agreement and bank guarantee

If you are applying for a subsidy for a new capture facility or liquefaction facility or for a subsidy of more than €400 million, the following additional conditions apply:

- Within two weeks after the subsidy grant decision is issued, you must sign an implementation agreement with the government.
- Within four weeks after the subsidy grant decision is issued, you must supply a bank guarantee.

For the capture of CO₂ from biomass plants, you do not have to sign an implementation agreement or supply a bank guarantee for a grant decision under €400 million.

Permit requirements

Different submission requirements apply for CCU. The ‘[Required permits](#)’ page tells you which permits you might require. The permits relate to the new components of your facility that need to be installed: the capture and (where applicable) liquefaction facility.

Progress requirements

Owing to the scale of this type of project, a longer contracting period (3 years) and implementation period (6 years) apply to this category. In addition, within three years of the subsidy being granted you must send the full permit obtained under the Wabo for the capture facility, and, where applicable, the liquefaction facility, to RVO.

CCU calculation example

This example is based on a new post-combustion CO₂ capture facility for an existing waste incineration plant, with the CO₂ being transported in gaseous form, with a capacity of 25 tonnes CO₂/hour, and with the CO₂ being supplied for use in greenhouse horticulture.

Category: CCU – New post-combustion CO₂ capture in an existing waste incineration plant, transport in gaseous form

Maximum application amount in Phase 1	€114.7464/tonne CO ₂
Maximum application amount in Phase 2	€121.4957/tonne CO ₂
2022 provisional correction rate	€52.2510/tonne CO ₂
Provisional 2022 SDE++ subsidy for the maximum application amount in Phase 1:	€114.7464 – €52.2510 = €62.4954/tonne CO ₂
Provisional 2022 SDE++ subsidy for the maximum application amount in Phase 2:	€121.4957 – €52.2510 = €69.2447/tonne CO ₂
Maximum number of full-load hours eligible for the subsidy	4,000 full-load hours
Total capacity	25 tonnes CO ₂ /hour
Maximum annual production eligible for the subsidy for a facility with a capacity of 25 tonnes of CO ₂ /hour	4,000 * 25 = 100,000 tonnes CO ₂ /year
Provisional 2022 SDE++ subsidy for the maximum application amount in Phase 1:	100,000 * €62.4954 = €6,249,540
Provisional 2022 SDE++ subsidy for the maximum application amount in Phase 2:	100,000 * €69.2447 = €6,924,470

If these milestones are not met, the subsidy may be withdrawn and the bank guarantee may be cashed in.

Determining production

The values measured during production must be sent to RVO each month. An annual declaration must be prepared at the end of each calendar year to show that the captured CO₂ was actually supplied to the greenhouse horticulture sector.

CO₂ capture and use in greenhouse horticulture (CCU)

Process		Capture facility		Transport in gaseous form by pipeline								Transport in liquid form (by ship/lorry)						
				New or existing transport pipeline				Transport pipeline must be new or being expanded, compressor must be new				Liquefaction facility must be new						
		Existing/new	Full-load hours	Compressor	MRAC article	Base rate	PBL variant	CCS com-bo MRAC article	MRAC article	Base rate	PBL variant	CCS com-bo MRAC article	MRAC article	Base rate	PBL variant	CCS com-bo MRAC article		
Existing	Process	Undefined	4,000	New	Not open			2A		Not open			2B		89.1.b	84.8423	2C	
					89.1.a.1	88.1004	1A	85.1.a.1, 2 or 87.1.a.1, 2	89.1.a.2	102.0525	1B	85.1.a.1, 2 or 87.1.a.1, 2	89.1.a.3	135.8253	1C	85.1.a.1, 3 or 87.1.a.1, 3		
New		89.1.C.1			56.2011	3A	85.1.a.1, 2 or 87.1.a.1, 2	89.1.c.2	70.1532	3B	85.1.a.1, 2 or 87.1.a.1, 2	89.1.c.3	111.1811	3C	85.1.a.1, 3 or 87.1.a.1, 3			
Existing	Combustion process	New			New	89.1.d.1	145.6955	4A	85.1.a.1, 2 or 87.1.a.1, 2	89.1.d.2	159.6476	4B	85.1.a.1, 2 or 87.1.a.1, 2	89.1.d.3	195.4933	4C	85.1.a.1, 3 or 87.1.a.1, 3	
New							89.1.e.1	114.5953	5A	85.1.a.1, 2 or 87.1.a.1, 2	89.1.e.2	128.5474	5B	85.1.a.1, 2 or 87.1.a.1, 2	89.1.e.3	162.1859	5C	85.1.a.1, 3 or 87.1.a.1, 3
Existing	Waste incineration plant						New	89.1.f.1	166.3267	6A	85.1.a.1, 2 or 87.1.a.1, 2	89.1.f.2	180.2788	6B	85.1.a.1, 2 or 87.1.a.1, 2	89.1.f.3	220.3396	6C
Undefined	Biomass combustion plant			Undefined		89.1.g.1		112.8433	7A	85.1.a.1, 2 or 87.1.a.1, 2					89.1.g.2	146.6503	7B	85.1.a.1, 3 or 87.1.a.1, 3

Combustion process = These categories are only open for post-combustion CO₂ capture (applications for CO₂ capture in processes such as SMR, ATR and POX cannot be submitted in these categories)

MRAC = Ministerial regulation designating the categories for the 2022 round of the SDE++ scheme

PBL = Variant as identified by the PBL in the calculations for the 2022 SDE++ base rates

Advanced renewable fuels

The Climate Agreement includes agreements about giving additional stimulation to the production of advanced renewable transport fuels. In the SDE++ scheme, €200 million has been set aside for this purpose. To ensure money will still be available for future projects, the budget for this round has been capped at €100 million, which translates to 7.1 billion kWh over the subsidy period. The correction rate for these categories consists of the average market price of the fuel plus the average income from trading renewable energy units (HBEs). Both are set annually by PBL. The fuel produced is eligible for a subsidy only if double-counting HBEs are issued and it must be shown that the fuel will be used for road transport and inland shipping in the Netherlands.

Based on market consultation, five categories have been calculated and included in this application round of the SDE++ scheme:

- Bioethanol from solid lignocellulosic biomass
- Biomethanol from solid lignocellulosic biomass
- Diesel and petrol substitutes from lignocellulosic biomass
- Bio-LNG from manure mono-fermentation
- Bio-LNG from all-purpose fermentation

Permitted types of biomass

Biomass can be used only if it meets the requirements of Annex IX, Part A of the Renewable Energy Directive. The fermentation categories are aligned with the existing definitions and scope of raw materials for all-purpose and manure mono-fermentation in the SDE++ scheme. For lignocellulosic biomass, the biomass used must consist of solid lignocellulosic biomass comprising no more than 50% B-grade wood.

Permits

Facilities usually require one or more permits. These must be issued by the competent authority before you submit your subsidy application. The [‘Required permits’](#) page tells you which permits you might require.

Determining production

The values measured during production must be sent to RVO each month. An annual declaration must be prepared at the end of each calendar year to show that the produced fuel was released onto the Dutch market and used for road transport or inland shipping. Information from the NEa Register can be used to produce this report.

SDE++ 2022 phasing and rates for low-carbon production	Maximum phase rate/base rate					Base green-house gas amount €/product unit*	2022 provisional correction rate (including HBE-Gs) €/product unit*	2022 provisional ETS value €/product unit*	Maximum full-load hours hours/year	Contracting period years	Implementation period years	Subsidy term years
	Phase 1 €/kWh	Phase 2 €/kWh	Phase 3 €/kWh	Phase 4 €/kWh	Phase 5 €/kWh							
Electrification												
Electrolytic hydrogen, grid-connected	0.0489	0.0512	0.0580	0.0718	0.1027	0.0251	0.0311	0.0000	4200	1.5	4	15
Electrolytic hydrogen, direct line from solar or wind farm	0.0489	0.0512	0.0580	0.0718	0.1027	0.0251	0.0311	0.0000	6154	1.5	4	15
Advanced renewable transport fuels (gas, petrol and diesel substitutes)												
Bioethanol from lignocellulosic biomass	0.0820	0.0849	0.0934	0.1106	0.1229	0.0423	0.1588	0.0000	8000	1.5	4	15
Biomethanol from lignocellulosic biomass	0.0797	0.0822	0.0897	0.1047	0.1070	0.0423	0.1588	0.0000	8000	1.5	4	15
Bio-LNG from manure mono-fermentation	0.0527	0.0566	0.0685	0.0923	0.0940	0.0190	0.1179	0.0000	8000	1.5	4	12
Bio-LNG from all-purpose fermentation	0.0427	0.0451	0.0524	0.0669	0.0873	0.0190	0.1179	0.0000	8000	1.5	4	12
Diesel and petrol substitutes from solid lignocellulosic biomass	0.0795	0.0823	0.0907	0.1038	0.1038	0.0409	0.1542	0.0000	8000	1.5	4	15
CO₂ capture and storage (CCS) with transport in gaseous form, ETS company												
CCS – Partial CO ₂ storage in existing plants, transport in gaseous form	119.4518	128.5169	148.6825	148.6825	148.6825	40.3523	0.0000	41.3852	4000	3.0	6	15
CCS – Full CO ₂ storage in existing plants, transport in gaseous form	97.9525	97.9525	97.9525	97.9525	97.9525	40.3523	0.0000	41.3852	8000	3.0	6	15
CCS – New pre-combustion CO ₂ capture, existing plant, transport in gaseous form	119.4518	125.0354	125.0354	125.0354	125.0354	40.3523	0.0000	41.3852	8000	3.0	6	15
CCS – New pre-combustion CO ₂ capture in hydrogen production from waste gases for hydrogen firing, transport in gaseous form	119.0034	127.9996	154.9880	158.4041	158.4041	40.3523	0.0000	41.3852	8000	3.0	6	15
CCS – New post-combustion CO ₂ capture, existing plant, transport in gaseous form	114.2075	122.4658	147.2407	157.9840	157.9840	40.3523	0.0000	41.3852	8000	3.0	6	15
CCS – New pre-combustion CO ₂ capture, new plant, transport in gaseous form	106.2463	106.2463	106.2463	106.2463	106.2463	40.3523	0.0000	41.3852	8000	3.0	6	15
CCS – New post-combustion CO ₂ capture, new plant, transport in gaseous form	115.2358	123.6523	141.8856	141.8856	141.8856	40.3523	0.0000	41.3852	8000	3.0	6	15

SDE++ 2022 phasing and rates for low-carbon production		Maximum phase rate/base rate					Base green-house gas amount	2022 provisional correction rate (including HBE-Gs)	2022 provisional ETS value	Maximum full-load hours	Contracting period	Implementation period	Subsidy term
Category	Phase 1 €/kWh	Phase 2 €/kWh	Phase 3 €/kWh	Phase 4 €/kWh	Phase 5 €/kWh	€/product unit*	€/product unit*	€/product unit*	hours/year	years	years	years	
CO₂ capture and storage (CCS) with transport in liquid form, ETS company													
CCS – Partial CO ₂ storage in existing plants, transport in liquid form, new liquefaction facility	119.1391	128.1562	155.2072	174.2395	174.2395	40.3523	0.0000	41.3852	4000	3.0	6	15	
CCS – Partial CO ₂ storage in existing plants, transport in liquid form	119.1391	128.1562	131.5674	131.5674	131.5674	40.3523	0.0000	41.3852	4000	3.0	6	15	
CCS – Full CO ₂ storage in existing plants, transport in liquid form, new liquefaction facility	119.1391	128.1562	133.1080	133.1080	133.1080	40.3523	0.0000	41.3852	8000	3.0	6	15	
CCS – New pre-combustion CO ₂ capture, existing plant, transport in liquid form, new liquefaction facility	119.1391	128.1562	155.2072	156.9544	156.9544	40.3523	0.0000	41.3852	8000	3.0	6	15	
CCS – New pre-combustion CO ₂ capture in hydrogen production from waste gases for hydrogen firing, transport in liquid form, new liquefaction facility	118.6908	127.6388	154.4829	192.3477	192.3477	40.3523	0.0000	41.3852	8000	3.0	6	15	
CCS – New post-combustion CO ₂ capture, existing plant, transport in liquid form, new liquefaction facility	113.8948	122.1050	146.7356	189.1134	189.1134	40.3523	0.0000	41.3852	8000	3.0	6	15	
CCS – New pre-combustion CO ₂ capture, new plant, transport in liquid form, new liquefaction facility	119.5358	128.6138	141.8014	141.8014	141.8014	40.3523	0.0000	41.3852	8000	3.0	6	15	
CCS – New post-combustion CO ₂ capture, new plant, transport in liquid form, new liquefaction facility	114.9231	123.2915	148.3967	171.3721	171.3721	40.3523	0.0000	41.3852	8000	3.0	6	15	
CO₂ capture and storage (CCS) with transport in gaseous form, non-ETS company													
CCS – Partial CO ₂ storage in existing plants, non-ETS company, transport in gaseous form	58.9233	67.9884	95.1838	148.6825	148.6825	0.0000	0.0000	0.0000	4000	3.0	6	15	
CCS – Full CO ₂ storage in existing plants, non-ETS company, transport in gaseous form	58.9233	67.9884	95.1838	97.9525	97.9525	0.0000	0.0000	0.0000	8000	3.0	6	15	
CCS – New pre-combustion CO ₂ capture, existing plant, non-ETS company, transport in gaseous form	58.9233	67.9884	95.1838	125.0354	125.0354	0.0000	0.0000	0.0000	8000	3.0	6	15	

SDE++ 2022 phasing and rates for low-carbon production	Maximum phase rate/base rate					Base green-house gas amount	2022 provisional correction rate (including HBE-Gs)	2022 provisional ETS value	Maximum full-load hours	Contracting period	Implementation period	Subsidy term
	Phase 1 €/kWh	Phase 2 €/kWh	Phase 3 €/kWh	Phase 4 €/kWh	Phase 5 €/kWh	€/product unit*	€/product unit*	€/product unit*	hours/year	years	years	years
CCS – New pre-combustion CO ₂ capture in hydrogen production from waste gases for hydrogen firing, non-ETS company, transport in gaseous form	58.4749	67.4711	94.4595	148.4363	158.4041	0.0000	0.0000	0.0000	8000	3.0	6	15
CCS – New post-combustion CO ₂ capture, existing plant, non-ETS company, transport in gaseous form	53.6790	61.9373	86.7122	136.2620	157.9840	0.0000	0.0000	0.0000	8000	3.0	6	15
CCS – New post-combustion CO ₂ capture, existing waste incineration plant, non-ETS company, transport in gaseous form	48.4199	55.8692	78.2168	122.9121	172.2732	0.0000	0.0000	0.0000	8000	3.0	6	15
CCS – New pre-combustion CO ₂ capture, new plant, non-ETS company, transport in gaseous form	59.3199	68.4461	95.8245	106.2463	106.2463	0.0000	0.0000	0.0000	8000	3.0	6	15
CCS – New post-combustion CO ₂ capture, new plant, non-ETS company, transport in gaseous form	54.7073	63.1238	88.3733	138.8723	141.8856	0.0000	0.0000	0.0000	8000	3.0	6	15
CO₂ capture and storage (CCS) with transport in liquid form, non-ETS company												
CCS – Partial CO ₂ storage in existing plants, non-ETS company, transport in liquid form, new liquefaction facility	58.6106	67.6277	94.6787	148.7808	174.2395	0.0000	0.0000	0.0000	4000	3.0	6	15
CCS – Partial CO ₂ storage in existing plants, non-ETS company, transport in liquid form	58.6106	67.6277	94.6787	131.5674	131.5674	0.0000	0.0000	0.0000	4000	3.0	6	15
CCS – Full CO ₂ storage in existing plants, non-ETS company, transport in liquid form, new liquefaction facility	58.6106	67.6277	94.6787	133.1080	133.1080	0.0000	0.0000	0.0000	8000	3.0	6	15
CCS – New pre-combustion CO ₂ capture, existing plant, non-ETS company, transport in liquid form, new liquefaction facility	58.6106	67.6277	94.6787	148.7808	156.9544	0.0000	0.0000	0.0000	8000	3.0	6	15
CCS – New pre-combustion CO ₂ capture in hydrogen production from waste gases for hydrogen firing, non-ETS company, transport in liquid form, new liquefaction facility	58.1623	67.1103	93.9544	147.6427	192.3477	0.0000	0.0000	0.0000	8000	3.0	6	15
CCS – New post-combustion CO ₂ capture, existing plant, non-ETS company, transport in liquid form, new liquefaction facility	53.3663	61.5765	86.2071	135.4683	189.1134	0.0000	0.0000	0.0000	8000	3.0	6	15

SDE++ 2022 phasing and rates for low-carbon production												
Category	Maximum phase rate/base rate					Base green-house gas amount	2022 provisional correction rate (including HBE-Gs)	2022 provisional ETS value	Maximum full-load hours	Contracting period	Implementation period	Subsidy term
	Phase 1 €/kWh	Phase 2 €/kWh	Phase 3 €/kWh	Phase 4 €/kWh	Phase 5 €/kWh	€/product unit*	€/product unit*	€/product unit*	hours/year	years	years	years
CCS – New post-combustion CO ₂ capture, existing waste incineration plant, non-ETS company, transport in liquid form, new liquefaction facility	48.1073	55.5084	77.7118	122.1185	207.5591	0.0000	0.0000	0.0000	8000	3.0	6	15
CCS – New pre-combustion CO ₂ capture, new plant, non-ETS company, transport in liquid form, new liquefaction facility	59.0073	68.0853	95.3194	141.8014	141.8014	0.0000	0.0000	0.0000	8000	3.0	6	15
CCS – New post-combustion CO ₂ capture, new plant, non-ETS company, transport in liquid form, new liquefaction facility	54.3946	62.7630	87.8682	138.0786	171.3721	0.0000	0.0000	0.0000	8000	3.0	6	15
CO₂ capture and use (CCU), transport in gaseous/gaseous form												
CCU – New pre-combustion CO ₂ capture, existing plant, transport in gaseous form	88.1004	88.1004	88.1004	88.1004	88.1004	52.2510	52.2510	0.0000	4000	3.0	6	15
CCU – New pre-combustion CO ₂ capture, existing plant, transport in gaseous form, new transport pipeline	102.0525	102.0525	102.0525	102.0525	102.0525	52.2510	52.2510	0.0000	4000	3.0	6	15
CCU – New pre-combustion CO ₂ capture, new plant, transport in gaseous form	56.2011	56.2011	56.2011	56.2011	56.2011	52.2510	52.2510	0.0000	4000	3.0	6	15
CCU – New pre-combustion CO ₂ capture, new plant, transport in gaseous form, new transport pipeline	70.1532	70.1532	70.1532	70.1532	70.1532	52.2510	52.2510	0.0000	4000	3.0	6	15
CCU – New post-combustion CO ₂ capture, existing plant, transport in gaseous form	120.0055	127.5638	145.6955	145.6955	145.6955	52.2510	52.2510	0.0000	4000	3.0	6	15
CCU – New post-combustion CO ₂ capture, existing plant, transport in gaseous form, new transport pipeline	120.0055	127.5638	150.2387	159.6476	159.6476	52.2510	52.2510	0.0000	4000	3.0	6	15
CCU – New post-combustion CO ₂ capture, new plant, transport in gaseous form	114.5953	114.5953	114.5953	114.5953	114.5953	52.2510	52.2510	0.0000	4000	3.0	6	15
CCU – New post-combustion CO ₂ capture, new plant, transport in gaseous form, new transport pipeline	121.0338	128.5474	128.5474	128.5474	128.5474	52.2510	52.2510	0.0000	4000	3.0	6	15

SDE++ 2022 phasing and rates for low-carbon production	Maximum phase rate/base rate					Base greenhouse gas amount €/product unit*	2022 provisional correction rate (including HBE-Gs) €/product unit*	2022 provisional ETS value €/product unit*	Maximum full-load hours hours/year	Contracting period years	Implementation period years	Subsidy term years
	Phase 1 €/kWh	Phase 2 €/kWh	Phase 3 €/kWh	Phase 4 €/kWh	Phase 5 €/kWh							
CCU – New post-combustion CO ₂ capture in an existing waste incineration plant, transport in gaseous form	114.7464	121.4957	141.7433	166.3267	166.3267	52.2510	52.2510	0.0000	4000	3.0	6	15
CCU – New post-combustion CO ₂ capture in an existing waste incineration plant, transport in gaseous form, new transport pipeline	114.7464	121.4957	141.7433	180.2788	180.2788	52.2510	52.2510	0.0000	4000	3.0	6	15
CCU – New post-combustion CO ₂ capture in a horticultural biomass facility, in gaseous form	106.1462	112.8433	112.8433	112.8433	112.8433	37.2510	37.2510	0.0000	4000	3.0	6	15
CO₂ capture and use (CCU), transport in liquid/liquid form												
CCU – New pre-combustion CO ₂ capture, existing plant, transport in liquid form, new liquefaction facility	124.9445	133.2626	135.8253	135.8253	135.8253	52.2510	52.2510	0.0000	4000	3.0	6	15
Additional CCU – Existing CO ₂ capture, existing plant, transport in liquid form, new liquefaction facility	84.8423	84.8423	84.8423	84.8423	84.8423	52.2510	52.2510	0.0000	4000	3.0	6	15
CCU – New pre-combustion CO ₂ capture, new plant, transport in liquid form, new liquefaction facility	111.1811	111.1811	111.1811	111.1811	111.1811	52.2510	52.2510	0.0000	4000	3.0	6	15
CCU – New post-combustion CO ₂ capture, existing plant, transport in liquid form, new liquefaction facility	119.6928	127.2030	149.7336	194.7948	195.4933	52.2510	52.2510	0.0000	4000	3.0	6	15
CCU – New post-combustion CO ₂ capture, new plant, transport in liquid form, new liquefaction facility	120.7211	128.3895	151.3947	162.1859	162.1859	52.2510	52.2510	0.0000	4000	3.0	6	15
CCU – New post-combustion CO ₂ capture in an existing waste incineration plant, transport in liquid form, new liquefaction facility	114.4338	121.1349	141.2383	181.4450	220.3396	52.2510	52.2510	0.0000	4000	3.0	6	15
CCU – New post-combustion CO ₂ capture in a horticultural biomass facility, in liquid form, new liquefaction facility	104.8365	112.3688	134.9657	146.6503	146.6503	37.2510	37.2510	0.0000	4000	3.0	6	15

* For CCS and CCU the product unit is tonnes CO₂, for all other categories it is kWh.

Applying for an SDE++ subsidy

If you'd like to take advantage of the SDE++ scheme in 2022, applying for a subsidy is quick and easy via RVO's online portal, eLoket.

The 2022 round of the SDE++ scheme is open from 9 am on 28 June until 5 pm on 6 October.

Applications will be accepted in five phases. The phase amount will increase for each phase.

Application process

Prepare your project thoroughly before you submit an application.

You must attach all of the documents required for your category. These documents can differ between the categories. If you are missing any of the required documents, you cannot submit an application. You can read more about the required documents on [this](#) page.

Submitting via the online portal

Use your eHerkenning ID to log in to the online application environment. You will need at least a Level 3 eHerkenning ID, with Level eH3 RVO services authorisation. If you don't have an eHerkenning ID, make sure you apply for on time. Be aware of the delivery time between 1 and 5 working days.

Individuals can log in using the DigiD for citizens. The ['Applications'](#) page on the SDE++ website explains how to submit an application for a subsidy.

Documents to attach to your application

There are several required documents that you must include with your application. These documents will be different depending on the category for which you are submitting a subsidy application. They may include a feasibility study, a site owner consent form and the required permits. If your application is missing a required document, it is incomplete. This has consequences for your date of submission and thus for the ranking of your project. It is therefore important that you send all required documents at the same time as your application. The various documents that you may need to include with your application are explained below. You can find more information about the documents required for each category in the ‘Feasibility study guide’ and in the ‘Renewable electricity’, ‘Renewable heat (CHP)’, ‘Renewable gas’, ‘Low-carbon heat’ and ‘Low-carbon production’ sections.

Feasibility study

You must attach a [feasibility study](#) to your application, unless you are applying under one of the ‘Solar PV with output of less than 1MW’ categories.

Compulsory elements of the feasibility study include: a clear financial plan, proof of your equity capital, a statement of operations and a detailed timeframe for the commissioning of the production facility.

The study must also include a technical description of the production facility and an energy or product yield calculation. For more complex facilities, you must also include a process diagram. Equity capital figures must be substantiated with documents demonstrating that the necessary resources (financial and otherwise) are available, or will be available at the time the investment is made. These documents may include annual financial statements or a balance sheet. The feasibility study must also include proof of equity capital to cover the total value of the projects for which you are applying for an SDE++ subsidy in 2022.

For the sake of completeness, your application must include information on the following:

- Total equity capital
- The amount of equity capital to be contributed by third parties or shareholders.

If the intended percentage of equity capital in the overall investment is less than 20%, a declaration from your financial backers is also required to explain the equity capital held by these parties. Depending on the project, we may request additional information.

Tip: Use the ‘[SDE++ feasibility study guide](#)’ and the ‘[SDE++ feasibility study template](#)’.

Transmission capacity indication from the grid operator

If you’re applying for a subsidy to produce renewable electricity, you must include an indication of the grid operator’s transmission capacity. This is to show that sufficient transmission capacity is available for the location to which your application relates. Ask your grid operator to prepare the transmission capacity indication for you. Because transmission capacity in the electricity grid can change, the transmission capacity indication must be issued specifically for the 2022 round of the SDE++ scheme. A transmission capacity indication requested for a previous round of the SDE++ or SDE+ scheme is not sufficient. If you don’t know who your grid operator is, check the ‘[EAN code book](#)’.

Site owner consent form

If the subsidy applicant is not the owner of the site intended for the production facility, the owner’s permission is required. Ask the owner to complete and sign the ‘[Site owner consent form](#)’. In this form, the site owner gives permission for you to install and operate the production facility.

If there are multiple owners, all of them must complete a permission declaration. This applies to all categories.

NB: The subsidy applicant or the person who fills in the declaration template must actually be registered in the Land Register as the owner or long leaseholder of the site.

Required permits

Usually, you will require one or more permits to build a production facility. These must be issued by the competent authority before you submit your subsidy application. If you need a permit to build your production facility, the permit is a required document that must be included with your subsidy application.

This requirement was included in the Stimulation of Sustainable Energy Production and Climate Transition (SDEK) Decree to ensure greater certainty about the timely completion of the project for which you are submitting a subsidy application.

The following permits may be required:

- Environmental permit. If you are planning to install your production facility or system in or on a building that is being constructed, you will need a permit under the Environmental Permitting (General Provisions) Act (Wabo). You may also need a permit for the environmental part of the project, for example if you want to use manure and co-products in a fermentation plant. Attach a copy of the permit you have obtained to your subsidy application. To find out more about environmental permits, visit the Environmental Service Desk.

- Water permit. If you need a permit under the Water Act for your production facility, attach the permit to your subsidy application. To find out more about water permits, visit the [Environmental Service Desk](#).
- Permit required under the Public Works Management Act (Wbr). If the production facility is to be built on or around public works of the Directorate-General for Public Works and Water Management, such as roads, motorways, viaducts, tunnels, bridges or dykes, your facility will probably require a Wbr permit. If you need one of these, attach the permit to your subsidy application. To find out more about Wbr permits, visit the [Rijkswaterstaat](#) website.
- Nature Conservation Act (*Wet natuurbescherming* – Wnb). You must attach a Wnb permit to your SDE++ application, if such a permit is required. A permit or exemption under the Wnb is an increasingly important precondition for ensuring renewable energy projects are implemented on time. This applies to projects with a substantial nitrogen discharge during the operating phase, such as biomass projects. To find out more about Wnb permits, visit the [Bii12.nl](#) website.

Generally speaking, the permits for the main components of the production facility must be granted. For other components, such as underground cables or pipes, fencing, etc., it is not necessary to include all the required permits and partial permits with your subsidy application.

The [Required permits](#) table shows which permits are required for each category.

Required permits table

	Category	Wabo permit****		Wbr permit*	Wnb permit	Water permit*	Mining permit*****	
		Application	Permit					
Renewable energy	Wind and hydropower		x	x		x		
	Solar PV ≥ 15 kWp and < 1 MWp, building-mounted		x*					
	Solar PV ≥ 15 kWp and < 1 MWp, ground-mounted and floating systems		x	x		x		
	Solar PV ≥ 1 MWp, building-mounted (including carports)		x*					
	Solar PV ≥ 1 MWp, ground-mounted and floating systems		x	x		x		
	Biomass		x		x			
	Solar thermal energy		x*	x		x		
	Geothermal heat							x
Other low-carbon technologies	Shallow geothermal heat with a heat pump							x
	Aquathermal (thermal energy from surface water, waste water and drinking water)		x			x		
	PVT panels with a heat pump		x	x		x		
	Daylight greenhouses		x			x**		
	Electric boilers and industrial heat pumps		x					
	Use of waste heat		x					
	Electrolytic hydrogen production		x					
	Hybrid glass furnaces		x					
	CO ₂ capture and storage (CCS)	x***	x***					
	CO ₂ capture and use (CCU)	x***	x***					
	Advanced renewable fuels		x			x		

* Where applicable, but always required for installation in or on a new building.

** In connection with seasonal storage.

*** Complete application for a Wabo permit for at least the environmental part, and the Wabo permit if present.

**** In the case of a building right acquired through a public tendering procedure for government-owned land or the roof of a government-owned building, a draft Wabo permit must be attached.

***** Exploration permit for a new project or extraction permit for the expansion of an existing project.

Note: If the facility is to be installed in a building that is being constructed or renovated, the Wabo permit must be included with the subsidy application.

Note: Permits and partial permits for laying cables (including underground cables) or installing fencing, railings or above-ground or underground pipes do not have to be included with your subsidy application.

SDE++ grant decisions

Implementation agreement and bank guarantee

If you have received a subsidy grant decision for a CCS or CCU project with a new capture facility or liquefaction facility, or your grant decision relates to a subsidy of €400 million or more for your project, you should note that the decision is subject to the following conditions:

- Within two weeks after the subsidy grant decision is issued, you must send RVO a signed implementation agreement. You can find the implementation agreement on the website under '[Realisation phase](#)'. The implementation agreement is also set out in Annex 1 of the 'Regulation designating the 2022 SDE++ categories'.
- The bank guarantee associated with the implementation agreement must be sent to RVO within four weeks after the subsidy grant decision is issued. The bank guarantee template is also set out in Annex 1 of the 'Regulation designating the 2022 SDE++ categories', and is on the website.

For the capture of CO₂ from biomass plants for use in greenhouse horticulture, you do not have to sign an implementation agreement or supply a bank guarantee for a grant decision under €400 million.

You can find more information in the '[Implementation agreement FAQ](#)' section on the website.

Receiving your SDE++ subsidy

Once you've been granted an SDE++ subsidy, you must complete several further steps before you can actually receive it.

- After receiving your subsidy grant decision, you must send RVO details of your agreements with contractors within 18 months. For geothermal heat, CCS and CCU projects, this timeframe is extended to 3 years. The documents you provide must describe the components of the production facility and the contracts issued for the construction of the facility. For the 'Solar PV ≥ 15 kWp and < 1 MWp' categories, you do not need to send contractor agreement details within the 2-year implementation period
- You must carry out the project in accordance with your application, and the production facility must be commissioned within the set timeframe
- You must register with a certifying authority such as CertiQ (for renewable electricity and heat) or Vertogas (for renewable gas). For low-carbon heat and low-carbon production, you must register with a metering company using the 'Request for assessment regarding suitability of a production facility' form. You can find this form at miin.rvo.nl/sde
- You must register as a producer with the grid operator (or in the case of heat, CCS or CCU, with the metering company)

Once these steps have been completed, you will receive monthly advance payments. Every year, we make a retrospective correction based on the actual energy or CO₂ price and the certified meter readings received by RVO. You can find more information on the [SDE++ website](#).

Environmental Guidelines

The European Environmental Guidelines set a limit on the financial support for environmental protection projects. If you are or will be receiving other forms of government support for your project in addition to the SDE++ subsidy, you may receive more support than permitted under the Guidelines. The support situation of your project can be determined through an Environmental Guidelines assessment. This assessment will always be performed for the 'Service life extension for the production of renewable electricity', 'Industrial heat pumps with 3,000 full-load hours', 'Waste heat', 'Electric boilers', 'Electrolytic hydrogen', 'CCS' and 'CCU' categories, even if you are not receiving any forms of stimulation in addition to the SDE++ subsidy. You can read more about the Environmental Guidelines assessment [here](#).

<i>Ranking and phases by maximum base rate for 2022 SDE++ categories</i>	Subsidy intensity* €/product unit** A=(B-C)/D	Base rate €/product unit** B	Long-term price €/product unit** C	Emission factor kg CO ₂ /product unit** D
Phase 1 – From 9 am, 28 June to 5 pm, 11 July				
CCU – New pre-combustion CO ₂ capture, new plant, transport in gaseous form	-17.418	56.2011	70.8765	842.5236
Use of waste heat, transport pipeline ≥ 0.10 and < 0.20 km/MWth	-11.082	0.0141	0.0166	0.2256
CCU – New pre-combustion CO ₂ capture, new plant, transport in gaseous form, new transport pipeline	-0.858	70.1532	70.8765	842.5236
Use of waste heat, transport pipeline ≥ 0.20 and < 0.30 km/MWth	6.655	0.0181	0.0166	0.2254
Small solid or liquid biomass boilers, service life extension	8.085	0.0342	0.0323	0.2350
Additional CCU – Existing CO ₂ capture, existing plant, transport in liquid form, new liquefaction facility	16.790	84.8423	70.8765	831.8150
CCU – New pre-combustion CO ₂ capture, existing plant, transport in gaseous form	20.587	88.1004	70.8765	836.6250
Use of waste heat, transport pipeline ≥ 0.30 and < 0.40 km/MWth	24.423	0.0221	0.0166	0.2252
Large B-grade wood boilers	32.300	0.0289	0.0214	0.2322
Deep geothermal heat, expansion of production facility by at least one extra well (6000 full-load hours)	32.712	0.0310	0.0166	0.4402
Solar PVT systems	32.928	0.0441	0.0376	0.1974
CCU – New pre-combustion CO ₂ capture, existing plant, transport in gaseous form, new transport pipeline	37.264	102.0525	70.8765	836.6250
CCS – Full CO ₂ storage in existing plants, transport in gaseous form	41.284	97.9525	60.5285	906.5120
Use of waste heat, transport pipeline ≥ 0.40 km/MWth	42.241	0.0261	0.0166	0.2249
Solar PV ≥ 15 kWp and < 1 MWp connection > 3 * 80 A, building-mounted	46.425	0.0705	0.0655	0.1077
CCU – New pre-combustion CO ₂ capture, new plant, transport in liquid form, new liquefaction facility	48.113	111.1811	70.8765	837.7136
CCS – New pre-combustion CO ₂ capture, new plant, transport in gaseous form	50.095	106.2463	60.5285	912.6140
CCU – New post-combustion CO ₂ capture, new plant, transport in gaseous form	56.656	114.5953	70.8765	771.6500
Deep geothermal heat ≥ 20 MWth (6,000 full-load hours)	57.110	0.0417	0.0166	0.4395
Deep geothermal heat, conversion of existing oil and gas wells, ≥ 20 MWth, base load (6,000 full-load hours)	57.110	0.0417	0.0166	0.4395
Sewage treatment plant existing sludge fermentation (new gas upgrading system)	57.923	0.0320	0.0214	0.1830
Deep geothermal heat ≥ 12 and < 20 MWth (6,000 full-load hours)	61.493	0.0437	0.0166	0.4407
Deep geothermal heat, conversion of existing oil and gas wells, ≥ 12 and < 20 MWth (6,000 full-load hours)	61.493	0.0437	0.0166	0.4407
Composting plant, heat	61.504	0.0462	0.0323	0.2260

<i>Ranking and phases by maximum base rate for 2022 SDE++ categories</i>	Subsidy intensity* €/product unit** A=(B-C)/D	Base rate €/product unit** B	Long-term price €/product unit** C	Emission factor kg CO ₂ /product unit** D
Phase 2 – From 5 pm, 11 July to 5 pm, 29 August				
Onshore wind, ≥ 8.5 m/s	68.654	0.0393	0.0317	0.1107
CCS – New pre-combustion CO ₂ capture, existing plant, transport in gaseous form	71.159	125.0354	60.5285	906.5120
Large solid or liquid biomass boilers, service life extension	72.766	0.0385	0.0214	0.2350
CCU – New post-combustion CO ₂ capture in a horticultural biomass facility, in gaseous form	73.660	112.8433	55.8765	773.3800
CCU – New post-combustion CO ₂ capture, new plant, transport in gaseous form, new transport pipeline	74.737	128.5474	70.8765	771.6500
Phase 3 – From 5 pm, 29 August to 5 pm, 12 September				
CCU – New pre-combustion CO ₂ capture, existing plant, transport in liquid form, new liquefaction facility	78.081	135.8253	70.8765	831.8150
CCS – Partial CO ₂ storage in existing plants, transport in liquid form	78.783	131.5674	60.5285	901.7020
CCS – Full CO ₂ storage in existing plants, transport in liquid form, new liquefaction facility	80.492	133.1080	60.5285	901.7020
Onshore wind, ≥ 8 and < 8.5 m/s	84.011	0.0410	0.0317	0.1107
Solar PV ≥ 15 kWp and < 1 MWp connection > 3 * 80 A, onshore	84.572	0.0677	0.0586	0.1076
Open-loop industrial heat pump systems (8,000 hours)	87.271	0.0395	0.0214	0.2074
Closed-loop industrial heat pump systems (8,000 hours)	88.407	0.0381	0.0214	0.1889
CCS – New pre-combustion CO ₂ capture, new plant, transport in liquid form, new liquefaction facility	89.527	141.8014	60.5285	907.8040
Solar PV ≥ 1 MWp, building-mounted	90.065	0.0670	0.0573	0.1077
CCS – New post-combustion CO ₂ capture, new plant, transport in gaseous form	96.664	141.8856	60.5285	841.6500
CCS – Partial CO ₂ storage in existing plants, transport in gaseous form	97.245	148.6825	60.5285	906.5120
Wind on flood defences, ≥ 8.5 m/s	97.561	0.0425	0.0317	0.1107
CCU – New post-combustion CO ₂ capture, existing plant, transport in gaseous form	98.989	145.6955	70.8765	755.8300
Direct use (burner) of wood pellets for industrial applications	99.653	0.0521	0.0291	0.2308
Deep geothermal heat < 12 MWth (6,000 full-load hours)	103.724	0.0620	0.0166	0.4377
Deep geothermal heat, conversion of existing oil and gas wells, < 12 MWth, (6,000 full-load hours)	103.724	0.0620	0.0166	0.4377
Phase 4 – From 5 pm, 12 September to 5 pm, 26 September				
CCS – New pre-combustion CO ₂ capture, existing plant, transport in liquid form, new liquefaction facility	106.938	156.9544	60.5285	901.7020
CCS – Full CO ₂ storage in existing plants, non-ETS company, transport in gaseous form	108.054	97.9525	0.0000	906.5120
CCS – New pre-combustion CO ₂ capture in hydrogen production from waste gases for hydrogen firing, transport in gaseous form	108.797	158.4041	60.5285	899.6140

<i>Ranking and phases by maximum base rate for 2022 SDE++ categories</i>	Subsidy intensity* €/product unit** A=(B-C)/D	Base rate €/product unit** B	Long-term price €/product unit** C	Emission factor kg CO ₂ /product unit** D
All-purpose fermentation, service life extension, cogeneration	110.357	0.0635	0.0391	0.2211
Solar PV ≥ 15 kWp and < 1 MWp connection > 3 * 80 A, floating	110.595	0.0705	0.0586	0.1076
Onshore wind, ≥ 7.5 and < 8.0 m/s	112.014	0.0441	0.0317	0.1107
Large solid or liquid biomass boilers (8,500 full-load hours)	113.191	0.0480	0.0214	0.2350
Wind on flood defences, ≥ 8 and < 8.5 m/s	114.724	0.0444	0.0317	0.1107
Large solid or liquid biomass boilers (8,000 full-load hours)	115.319	0.0485	0.0214	0.2350
CCS – New pre-combustion CO ₂ capture, new plant, non-ETS company, transport in gaseous form	116.420	106.2463	0.0000	912.6140
Ultra-deep geothermal heat, base load	116.966	0.0681	0.0166	0.4403
Large solid or liquid biomass boilers (7,500 full-load hours)	117.021	0.0489	0.0214	0.2350
CCU – New post-combustion CO ₂ capture, existing plant, transport in gaseous form, new transport pipeline	117.449	159.6476	70.8765	755.8300
CCS – New post-combustion CO ₂ capture, existing plant, transport in gaseous form	118.009	157.9840	60.5285	825.8300
Large solid or liquid biomass boilers (7,000 full-load hours)	118.723	0.0493	0.0214	0.2350
CCU – New post-combustion CO ₂ capture, new plant, transport in liquid form, new liquefaction facility	119.072	162.1859	70.8765	766.8400
Large solid or liquid biomass boilers (6,500 full-load hours)	120.000	0.0496	0.0214	0.2350
CCU – New post-combustion CO ₂ capture in a horticultural biomass facility, in liquid form, new liquefaction facility	120.513	146.6503	55.8765	753.2300
Large solid or liquid biomass boilers (6,000 full-load hours)	122.979	0.0503	0.0214	0.2350
Onshore wind, height-restricted, ≥ 8.5 m/s	124.661	0.0455	0.0317	0.1107
Large solid or liquid biomass boilers (5,500 full-load hours)	125.957	0.0510	0.0214	0.2350
CCS – Partial CO ₂ storage in existing plants, transport in liquid form, new liquefaction facility	126.107	174.2395	60.5285	901.7020
Small solid or liquid biomass boilers	126.392	0.0618	0.0323	0.2334
All-purpose fermentation, service life extension, heat	126.549	0.0609	0.0323	0.2260
Large solid or liquid biomass boilers (5,000 full-load hours)	130.213	0.0520	0.0214	0.2350
Manure mono-fermentation, heat > 400 kW	131.468	0.0821	0.0323	0.3788
Manure mono-fermentation, service life extension, heat ≤ 400 kW	131.732	0.0822	0.0323	0.3788
CCS – New post-combustion CO ₂ capture, new plant, transport in liquid form, new liquefaction facility	132.455	171.3721	60.5285	836.8400
Large solid or liquid biomass boilers (4,500 full-load hours)	134.043	0.0529	0.0214	0.2350
CCS – New pre-combustion CO ₂ capture, existing plant, non-ETS company, transport in gaseous form	137.930	125.0354	0.0000	906.5120

<i>Ranking and phases by maximum base rate for 2022 SDE++ categories</i>	Subsidy intensity* €/product unit** A=(B-C)/D	Base rate €/product unit** B	Long-term price €/product unit** C	Emission factor kg CO ₂ /product unit** D
CCU – New post-combustion CO ₂ capture in an existing waste incineration plant, transport in gaseous form	141.424	166.3267	70.8765	674.9220
Wind on flood defences, ≥ 7.5 and < 8.0 m/s	142.728	0.0475	0.0317	0.1107
CCS – Partial CO ₂ storage in existing plants, non-ETS company, transport in liquid form	145.910	131.5674	0.0000	901.7020
Liquid biomass boilers	146.427	0.0657	0.0323	0.2281
CCS – New pre-combustion CO ₂ capture in hydrogen production from waste gases for hydrogen firing, transport in liquid form, new liquefaction facility	147.316	192.3477	60.5285	894.8040
CCS – Full CO ₂ storage in existing plants, non-ETS company, transport in liquid form, new liquefaction facility	147.619	133.1080	0.0000	901.7020
Onshore wind, height-restricted, ≥ 8 and < 8.5 m/s	148.148	0.0481	0.0317	0.1107
Solar PV ≥ 1 MWp and < 15 MWp, solar-tracking on land	148.837	0.0551	0.0391	0.1075
Onshore wind, ≥ 7.0 and < 7.5 m/s	149.051	0.0482	0.0317	0.1107
Manure mono-fermentation, combined generation, > 400 kW	149.314	0.0977	0.0422	0.3717
Advanced renewable transport fuels, diesel and petrol substitutes from solid lignocellulosic biomass	151.894	0.1038	0.0613	0.2798
All-purpose fermentation, heat	154.425	0.0672	0.0323	0.2260
CCS – New pre-combustion CO ₂ capture, new plant, non-ETS company, transport in liquid form, new liquefaction facility	156.203	141.8014	0.0000	907.8040
CCS – New post-combustion CO ₂ capture, existing plant, transport in liquid form, new liquefaction facility	156.616	189.1134	60.5285	821.0200
Solar PV ≥ 15 MWp, solar-tracking on land	157.209	0.0524	0.0355	0.1075
Shallow geothermal heat with a heat pump (6,000 full-load hours)	157.715	0.0768	0.0166	0.3817
Sewage treatment plant improved sludge fermentation, heat	160.177	0.0685	0.0323	0.2260
All-purpose fermentation, combined generation	161.918	0.0749	0.0391	0.2211
CCU – New post-combustion CO ₂ capture in an existing waste incineration plant, transport in gaseous form, new transport pipeline	162.096	180.2788	70.8765	674.9220
Solar PV ≥ 1 MWp and < 15 MWp, onshore	163.569	0.0567	0.0391	0.1076
CCS – Partial CO ₂ storage in existing plants, non-ETS company, transport in gaseous form	164.016	148.6825	0.0000	906.5120
Phase 5 – From 5 pm, 26 September to 5 pm, 6 October				
Deep geothermal heat, medium load, heating in the built environment	165.182	0.0889	0.0166	0.4377
CCU – New post-combustion CO ₂ capture, existing plant, transport in liquid form, new liquefaction facility	165.930	195.4933	70.8765	751.0200
Manure mono-fermentation > 400 kW, gas	167.659	0.0777	0.0214	0.3358

<i>Ranking and phases by maximum base rate for 2022 SDE++ categories</i>	Subsidy intensity* €/product unit** A=(B-C)/D	Base rate €/product unit** B	Long-term price €/product unit** C	Emission factor kg CO ₂ /product unit** D
CCS – New post-combustion CO ₂ capture, new plant, non-ETS company, transport in gaseous form	168.580	141.8856	0.0000	841.6500
Advanced renewable transport fuels, bio-LNG from manure mono-fermentation	169.273	0.0940	0.0269	0.3964
Manure mono-fermentation, service life extension, cogeneration ≤ 400 kW	169.933	0.1222	0.0589	0.3725
Solar PV ≥ 15 MWp, onshore	170.074	0.0538	0.0355	0.1076
Electric boilers	172.566	0.0604	0.0214	0.2260
Onshore wind, ≥ 6.75 and < 7.0 m/s	173.442	0.0509	0.0317	0.1107
CCS – New pre-combustion CO ₂ capture, existing plant, non-ETS company, transport in liquid form, new liquefaction facility	174.065	156.9544	0.0000	901.7020
Advanced renewable transport fuels, biomethanol from solid lignocellulosic biomass	174.400	0.1070	0.0634	0.2500
CCS – New pre-combustion CO ₂ capture in hydrogen production from waste gases for hydrogen firing, non-ETS company, transport in gaseous form	176.080	158.4041	0.0000	899.6140
Use of waste heat with a heat pump, transport pipeline ≥ 0.10 and < 0.20 km/MWth	179.528	0.0501	0.0166	0.1866
Wind on flood defences, ≥ 7.0 and < 7.5 m/s	181.572	0.0518	0.0317	0.1107
Onshore wind, height-restricted, ≥ 7.5 and < 8.0 m/s	186.089	0.0523	0.0317	0.1107
CCS – New post-combustion CO ₂ capture, existing plant, non-ETS company, transport in gaseous form	191.303	157.9840	0.0000	825.8300
CCS – Partial CO ₂ storage in existing plants, non-ETS company, transport in liquid form, new liquefaction facility	193.234	174.2395	0.0000	901.7020
Use of waste heat with a heat pump, transport pipeline ≥ 0.20 and < 0.30 km/MWth	198.068	0.0535	0.0166	0.1863
All-purpose fermentation, service life extension, gas	198.907	0.0578	0.0214	0.1830
Aquathermal, thermal energy from surface water, heating in the built environment (6,000 full-load hours)	201.801	0.0547	0.0166	0.1888
Large wood pellet steam boilers	204.073	0.0685	0.0214	0.2308
CCS – New post-combustion CO ₂ capture, new plant, non-ETS company, transport in liquid form, new liquefaction facility	204.785	171.3721	0.0000	836.8400
Manure mono-fermentation, service life extension, ≤ 400 kW, gas	207.564	0.0911	0.0214	0.3358
Advanced renewable transport fuels, bioethanol from solid lignocellulosic biomass	208.042	0.1229	0.0634	0.2860
Deep geothermal heat, heating in the built environment (3,500 full-load hours)	208.852	0.1072	0.0166	0.4338
Onshore wind, < 6.75 m/s	214.092	0.0554	0.0317	0.1107
Wind on flood defences, ≥ 6.75 and < 7.0 m/s	214.092	0.0554	0.0317	0.1107
Solar thermal, ≥ 1 MWth	214.602	0.0808	0.0323	0.2260

<i>Ranking and phases by maximum base rate for 2022 SDE++ categories</i>	Subsidy intensity* €/product unit** A=(B-C)/D	Base rate €/product unit** B	Long-term price €/product unit** C	Emission factor kg CO ₂ /product unit** D
Deep geothermal heat with a heat pump, heating in the built environment (6,000 full-load hours)	214.701	0.0978	0.0166	0.3782
CCS – New pre-combustion CO ₂ capture in hydrogen production from waste gases for hydrogen firing, non-ETS company, transport in liquid form, new liquefaction facility	214.961	192.3477	0.0000	894.8040
All-purpose fermentation, service life extension, gas (new gas upgrading system)	215.301	0.0608	0.0214	0.1830
Manure mono-fermentation, heat ≤ 400 kW	216.473	0.1143	0.0323	0.3788
Use of waste heat with a heat pump, transport pipeline ≥ 0.30 and < 0.40 km/MWth	217.088	0.0570	0.0166	0.1861
CCU – New post-combustion CO ₂ capture in an existing waste incineration plant, transport in liquid form, new liquefaction facility	223.042	220.3396	70.8765	670.1120
Manure mono-fermentation, service life extension, ≤ 400 kW, gas (new gas upgrading system)	226.325	0.0974	0.0214	0.3358
Large wood pellet boilers for the built environment	230.069	0.0697	0.0166	0.2308
CCS – New post-combustion CO ₂ capture, existing plant, non-ETS company, transport in liquid form, new liquefaction facility	230.340	189.1134	0.0000	821.0200
Sewage treatment plant improved sludge fermentation, combined generation	230.909	0.0936	0.0428	0.2200
CCS – New post-combustion CO ₂ capture, existing waste incineration plant, non-ETS company, transport in gaseous form	231.263	172.2732	0.0000	744.9220
Onshore wind, height-restricted, ≥ 7.0 and < 7.5 m/s	232.159	0.0574	0.0317	0.1107
Use of waste heat with a heat pump, transport pipeline ≥ 0.40 km/MWth	235.737	0.0604	0.0166	0.1858
Solar PV ≥ 1 MWp, solar-tracking on water	240.566	0.0646	0.0391	0.1060
Aquathermal, thermal energy from surface water with seasonal storage, direct use (3,500 full-load hours)	246.760	0.0642	0.0166	0.1929
Biomass gasification (including B-grade wood)	247.886	0.0683	0.0214	0.1892
Wind on lakes ≥ 1 km ²	248.419	0.0592	0.0317	0.1107
Advanced renewable transport fuels, bio-LNG from all-purpose fermentation	249.072	0.0873	0.0269	0.2425
Solar thermal, ≥ 140 kWth and < 1 MWth	253.540	0.0949	0.0376	0.2260
Wind on flood defences, < 6.75 m/s	254.743	0.0599	0.0317	0.1107
Solar PV ≥ 1 MWp, floating	257.435	0.0668	0.0391	0.1076
Shallow geothermal heat with a heat pump, heating in the built environment (3,500 full-load hours)	260.414	0.1160	0.0166	0.3817
Onshore wind, height-restricted, ≥ 6.75 and < 7.0 m/s	264.679	0.0610	0.0317	0.1107
All-purpose fermentation, gas	266.120	0.0701	0.0214	0.1830

Ranking and phases by maximum base rate for 2022 SDE++ categories	Subsidy intensity* €/product unit** A=(B-C)/D	Base rate €/product unit** B	Long-term price €/product unit** C	Emission factor kg CO₂/product unit** D
Manure mono-fermentation ≤ 400 kW, gas	267.123	0.1111	0.0214	0.3358
CCS – New post-combustion CO ₂ capture, existing waste incineration plant, non-ETS company, transport in liquid form, new liquefaction facility	280.443	207.5591	0.0000	740.1120
Daylight greenhouses	282.168	0.0771	0.0214	0.1974
Manure mono-fermentation, combined generation ≤ 400 kW	290.470	0.1671	0.0589	0.3725
Closed-loop industrial heat pump systems (3000 hours)	298.571	0.0778	0.0214	0.1889
Hybrid glass furnaces	299.213	0.0821	0.0441	0.1270
Aquathermal, thermal energy from surface water with seasonal storage, heating in the built environment (6000 full-load hours)	299.836	0.0715	0.0166	0.1831
Aquathermal, thermal energy from surface water with seasonal storage, heating in the built environment (3,500 full-load hours)	299.836	0.0715	0.0166	0.1831
Open-loop industrial heat pump systems (3000 hours)	299.904	0.0836	0.0214	0.2074
Onshore wind, height-restricted, < 6.75 m/s	299.910	0.0649	0.0317	0.1107
Hydropower, fall height < 50 cm	300.000	0.0852	0.0462	0.1300
Hydropower, fall height ≥ 50 cm	300.000	0.0852	0.0462	0.1300
Hydropower, fall height ≥ 50 cm, renovation	300.000	0.0852	0.0462	0.1300
Osmosis	300.000	0.0852	0.0462	0.1300
Electrolytic hydrogen, grid-connected	300.000	0.1027	0.0340	0.2290
Electrolytic hydrogen, direct line from solar or wind farm	300.000	0.1027	0.0340	0.2290
Sewage treatment plant improved sludge fermentation, gas	300.000	0.0763	0.0214	0.1830
Biomass gasification (excluding B-grade wood)	300.000	0.0763	0.0214	0.1830
Aquathermal, thermal energy from drinking water and waste water (6,000 full-load hours)***	300.213	0.0731	0.0166	0.1882

* If the application amount is less than the maximum base rate the subsidy intensity will be lower and you may be able to submit in an earlier phase.

** For CCS and CCU the product unit is tonnes CO₂, for all other categories it is kWh.

*** For this category, the base rate has been calculated at €300/tonne of CO₂ and rounded up to four decimal places; working backwards to the subsidy intensity, this works out at more than €300/tonne of CO₂.

Glossary

Banking

Banking is possible for most SDE++ applications. This means that any annual production that is eligible for subsidy and that you don't use can be carried forward to later years (forwards banking). In addition, production that is higher than the maximum annual production eligible for the subsidy can be transferred to a subsequent year (backwards banking). You can then use it if production is less in a later year. The latter form of banking is capped at 25% of the annual production eligible for a subsidy.

You can read more about banking on the [SDE++ website](#).

Emission factor

Avoided emissions related to the commissioning of the technology concerned. The [Ranking Table](#) shows the emission factors for each category.

Energy value

The amount of energy that can be extracted from a specific quantity of matter through combustion.

Long-term price

The unweighted average of the actual energy, product or ETS price over the subsidy period, based on price movements estimated by the International Energy Agency (IEA).

Subsidy period

The maximum period (in years) for which you can receive the subsidy.

Rated output

The maximum output of the production facility when used under nominal (design) conditions, guaranteed by the supplier for continuous use.

Usefully employed heat

The RVO only grants subsidies for heat if it meets the definition of 'usefully employed heat' in the Guarantees of Origin and Certificates of Origin Regulation or the General Implementing Regulation for the SDE++ scheme.

You can find information and an informative video about the Guarantees of Origin and Certificates of Origin Regulation on the [CertiQ website](#).

PBL

Netherlands Environmental Assessment Agency. You can read more about the PBL's role in the SDE++ scheme [here](#).

Production hours

Sum of the time periods in which a production facility is producing at partial load or at full capacity.

Waste heat

Unavoidable thermal energy generated by a factory as a by-product, which would be released unused into the air or water, and which at the time of the application is not being usefully employed.

Subsidy intensity

The subsidy amount in euros per tonne of CO₂ avoided.

The subsidy intensity determines the phase at which you can submit your subsidy application. It is also used to determine where your application will be ranked.

You can calculate the subsidy intensity as follows:
 $(\text{Application amount} - \text{Long-term price}) / \text{Emission factor}$.

Commissioning deadline

The last date of a set period (following the grant decision) within which your facility must start production.

Heating in the built environment

Supply to a district heating network or direct supply, for the purposes of space heating and domestic hot water supply in a building that is not a greenhouse.

Full-load hours

The maximum number of production hours at the rated output for each year for which you receive a subsidy.

Graduated scale for heat

A graduated scale for heat applies to the 'Large solid or liquid biomass boilers ≥ 5 MWth' category. Under this system, we calculate a base rate depending on the full-load hours.

CHP

Combined heat and power.

Guarantees of Origin

Guarantees of Origin are issued by [Vertogas](#) and CertiQ. For renewable gas, registration and certification via Vertogas is required. For renewable heat and renewable electricity, the route of registration and certification via [CertiQ](#) is required.

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See also the [SDE++ information video](#).

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