



# Technical support for RES policy development and implementation – Simplification of permission and administrative procedures for RES installations (RES Simplify)



The Netherlands

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## Executive summary

In the Netherlands, large renewable energy projects are usually subject to the influence of destination plans, drawn up by the provinces. Because of this competence of the regions to draw up destination plans for renewable energy projects, most of the onshore wind and ground-mounted PV projects take place on provincial level. When not clearly stipulated by the provincial destination plans, project developers are free to construct both onshore wind and rooftop and ground-mounted PV projects anywhere throughout the Netherlands, on the condition that they receive the necessary permits. For larger onshore wind projects, for which a national coordination scheme applies, the Dutch state is responsible. For smaller onshore wind projects, the competence lies with the municipalities.

The most important procedural step for onshore wind and rooftop and ground-mounted PV in the Netherlands is the administrative authorisation step. This step contains all of the permitting which has to be done in order to construct a project. First an EIA needs to take place, before the All-in-one Permit for Physical Aspects and the water and Nature Permit can be granted.

With regard to the Nature Permit and with regard to species conservation, the Netherlands is a clear frontrunner in Europe. The Nature Permit is granted based on a very extensive nature test, which can take years, and as such is also considered as a barrier, because of the lengthiness, while nature organisations and other parties consider these tests as a best practice. The participation grade on the other hand in the Netherlands is very high, because of the Regional Energy Strategies, which is both a best practice, but also results into an important barrier. On the one hand it creates less resistance by the public and local environment, but also creates a situation of unequal level playing field.

After receiving the necessary permits, a project developer has to arrange the grid connection, for which there is no official grid connection permit, yet a non-binding transport indication can be required. This transport indication is also necessary for the SDE++ application afterwards. Yet the transport indication is where most barriers for the process step of grid connection permit and legal-fiscal process occur. This is because of the non-binding characteristic and the lack of legal framework which clearly defines the roles between project developers and grid operators within this process.

Offshore wind in the Netherlands is supported through a competitive tendering system where all permits are granted to the winner and even the grid connection is taken care of. This process is preceded by an extensive EIA to decide where the exact location of the offshore wind farms will be. This practice basically serves as a best practice where all stakeholders are engaged in the process and nature research is performed, in order to reduce all possible negative effects of offshore wind in the Netherlands. Basically, almost no barriers are identified for offshore wind with regard to the administrative procedures.

Table 1 contains a traffic light assessment of the relevant process steps for the installation of onshore wind, rooftop and ground-mounted PV and offshore wind in the Netherlands.

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Table 1: Traffic light assessment of the relevant process steps

Process step	Site selection	Electricity production license	Application preparation process	Administrative authorisation	Grid connection permit	Corporate legal-fiscal	Other
Onshore wind	Minor barriers identified	Not relevant for target country	Not relevant for target country	Moderate barriers identified	Minor barriers identified	Minor barriers identified	Not relevant for target country
PV rooftop	Minor barriers identified	Not relevant for target country	Not relevant for target country	No barriers identified	No barriers identified	No barriers identified	Not relevant for target country
PV ground-mounted	Minor barriers identified	Not relevant for target country	Not relevant for target country	Moderate barriers identified	Minor barriers identified	Minor barriers identified	Not relevant for target country
Offshore wind	No barriers identified	Not relevant for target country	Not relevant for target country	No barriers identified	No barriers identified	No barriers identified	Not relevant for target country

<span style="color: green;">■</span> No barriers identified	<span style="color: red;">■</span> Moderate barriers identified
<span style="color: yellow;">■</span> Minor barriers identified	<span style="color: gray;">■</span> Not relevant for target country
<span style="color: magenta;">■</span> Severe barriers identified	<span style="color: black;">■</span> No projects implemented

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## 1. National RES targets and relevant RES technologies

The Dutch national government plans to have 14% of all energy used in the Netherlands originating from sustainable sources by 2020 and by 2030 at least 27%. In 2050, the energy supply must be completely CO<sub>2</sub> free. Within this strategy, offshore wind energy is of vital importance to achieve these goals (NECP, 2019).

In 2019, offshore wind energy already accounted for approximately 1 GW. In 2023, there will be at least 4.5 GW of power coming from offshore wind turbines in the Netherlands. Offshore wind will then supply 3.3% of all energy in the country. In the coalition agreement and the Climate Agreement (2019) it has been agreed to continue the successful policy of offshore wind energy. As a result, approximately 11 GW is expected to be generated by offshore wind farms by 2030. These will then supply 8.5% of all energy produced in the Netherlands and 40% of the current electricity consumption (Rijksoverheid, 2021).

In order to achieve its goals with regard to renewable energy production and the reduction of CO<sub>2</sub> emissions, the Dutch government is mainly looking in the direction of solar energy and onshore wind energy. One of the measures from the Climate Agreement is the planned generation of 35 TWh renewable energy on land by 2030, produced by onshore wind and rooftop and ground-mounted PV combined. Thirty regions in the Netherlands are working on detailed plans to achieve this goal, namely the Regional Energy Strategies (RES, 2021).

When looking at the planned generation targets for the Netherlands, these abovementioned technologies (offshore wind, onshore wind, rooftop and ground-mounted PV) are by far the most important technologies to reach their goals with regard to renewable electricity production. As of today, biomass is still a very important source of renewable energy in the Netherlands, however it is expected to decrease significantly. This is mainly due to the negative public opinion which exists heavily around biomass plants in the Netherlands. Other renewable energy sources are only used marginally now and in the future in the Netherlands and are therefore not further discussed (NECP, 2021).

Figure 1 displays the annual deployment of solar PV, and onshore and offshore wind between 2010 and 2019. The figure underlines that a constant deployment has taken place in the recent years, with an impressive growth of solar PV in 2018 and 2019.

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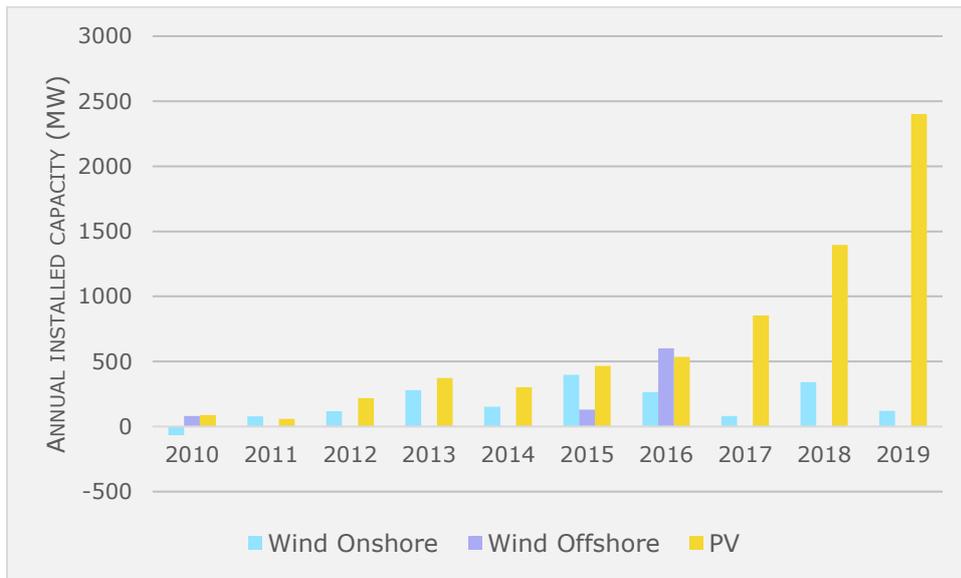


Figure 1: Annual installed capacity of PV and Wind onshore 2010-2019 (source: EurObserv'ER)

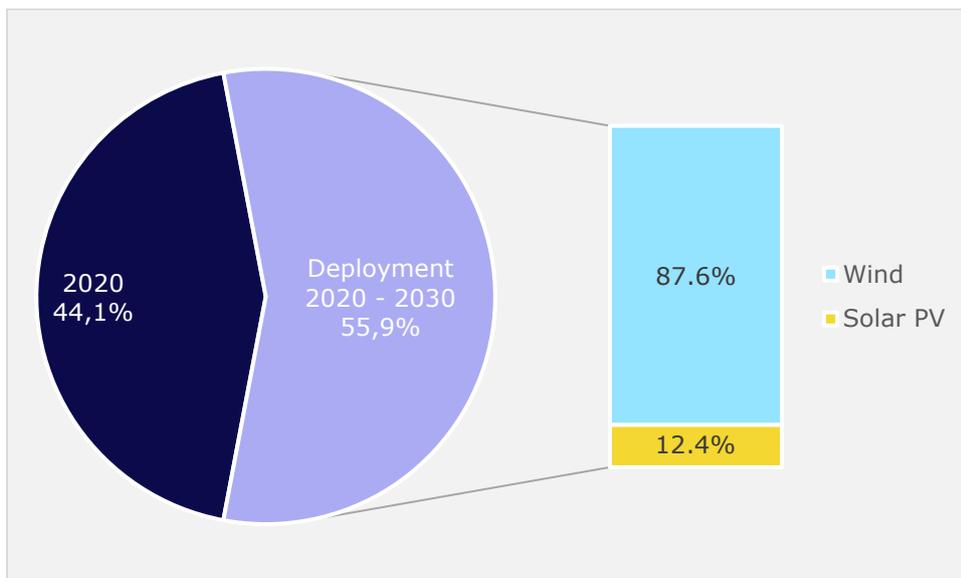


Figure 2: Planned deployment of RES-E 2020-2030 in relation to past deployment (source: NECP)

## 2. Administrative and grid connection procedure

### 2.1. Relevant process steps

Site selection in the Netherlands is the first important step and is usually bound to destination plans by the provinces or for larger projects by the Dutch state. Smaller onshore wind energy projects in theory can be constructed anywhere. After the site selection, a project must perform an EIA, before applying for the necessary permits, which are the All-in-one Permit for Physical Aspects, Nature Permit and Water Permit, all discussed in the administrative authorisation process step. The grid connection permit and corporate legal-fiscal process steps mainly discuss the grid connection process, the SDE++ application process and their interconnectedness.

## 2.1.1. Site selection

### Process flow

In the Netherlands, site selection is an important step for all RES installations and is often subject to conflict due to the general lack of open space throughout the Netherlands. The site selection is not strictly bound to legislation, except for offshore wind, where the sites are clearly defined in advance.

### Onshore wind

The site selection for onshore wind installations in the Netherlands does not follow a standardised procedure. Yet, since the introduction of the Spatial Planning Act in 2008, all provinces have the competency to draw up destination plans. This decentralisation of spatial planning has ensured that an important part of the implementation of wind energy takes place at provincial level (Pbl, 2019).

Depending on the province, the provincial destination plans may contain predefined geographical sites where wind energy projects are either to be installed or prohibited from installing. These destination plans are drawn up by the provincial coalition in a Provincial Spatial Regulation.

If not indicated explicitly in the provincial destination plans, it is possible to construct a wind energy project everywhere throughout the Netherlands. When an agreement is found between the land owner (usually a farmer or the state) and the project developer, the permitting procedure can be launched. Strictly legally speaking, when meeting all the conditions for a permit, wind project developers are allowed to construct anywhere (Harmsen, 2021).

Depending on the location of the project, other permits and legislation may also apply to the construction of a wind farm. These are on the one hand the Nature Conservation Act, which also includes species protection when a wind turbine is placed near or in a Natura 2000 area. The Water Act regulates the management of surface water and groundwater and applies when wind turbines are placed near a flood defence (Windenergie, 2021).

### Rooftop and ground-mounted PV

Site selection for rooftop and ground-mounted PV in the Netherlands takes place on the basis of a Solar Ladder, which was adopted by the Minister of Energy in August 2019. The Ladder determines the preferred order of location where solar energy can be installed and goes as follows (Sluiter, 2019):

- 1) Roofs and facades: There is a clear preference for solar panels on roofs and facades of buildings. Because of the buildings already present, the introduction of solar panels in these places will usually have a lesser influence on the characteristics or identity of an area.
- 2) Built-up area: For the same reason, unused areas in a built-up area are preferred thereafter.
- 3) Rural area: In order to meet the set energy targets, it may turn out that locations in rural areas are also required for the construction of ground-mounted PV installations. In that case, the preference is to look for smart combinations, like floating PV panels or agrophotovoltaics. Although nature and agricultural areas are not completely excluded, the preference is for land with a primary function other than agriculture or nature, such as water treatment plants, rubbish dumps, inland waterways or roadsides of railways and motorways.

In the Regional Energy Strategies, the so-called 'search areas' (*zoekgebieden*) for the installation of rooftop and ground-mounted PV will be designated. These are areas in which further research needs to be carried out where exactly ground-mounted PV installations can be installed. These search areas, however, are not established yet and will not become binding. It is more an agreement on which areas the provinces want to focus to construct rooftop and ground-mounted PV installations, in order to reach their regional targets. In the first version of the Regional Energy Strategies, mainly tests and goals were established, without the search areas being elaborated by all regions. The 2.0 version will also include these search areas and is expected to be finalised in the course of this year (Jaeger, 2021).

As in the case of onshore wind installations, in principle it is possible to construct rooftop and ground-mounted PV projects anywhere in the Netherlands, as long as an agreement is found between the land owner and the project developer and all conditions are met to apply for the necessary permits. Generally speaking, site selection is more straightforward for rooftop and ground-mounted PV than for onshore wind projects (Jaeger, 2021).

### **Offshore wind**

Offshore wind in the Netherlands is supported through a tendering system, where the locations of the offshore projects are predefined. The site selection by the Dutch national government takes place on the basis of a balancing process of all interests.

During the drawing up of the preparation and implementation plans for wind energy at sea, the Ministry of Energy takes other interests into account as much as possible. The North Sea is very busy environment, where activities like shipping, fishing, oil and gas extraction take place. There is also sand extraction and there are training areas for Defence and nature reserves. In some places the sea is also unsuitable for windmills, because it is too deep. In addition, a greater distance from the coast means longer, more expensive cables and higher maintenance costs (Rijksoverheid, 2021).

Affordability, energy yield and effects on nature, including other stakeholders mentioned are considered. In the creation of offshore wind farms, the national government involves stakeholders to think along and provide input, before deciding on the final site (Rijksoverheid, 2021).

### **Deadlines**

No deadlines were identified for this process step.

### **Detected barriers**

**Destination Plans.** The introduction of the destination plans for wind turbines is a competence of the Provincial Deputy and is therefore highly dependent on the provincial elections. As seen in some provinces in the Netherlands, the outcome of such provincial elections can decide whether wind energy is supported by the Provincial deputy, or in some cases even boycotted. This takes place through the implementation of the Destination Plans (Pbl, 2019).

**Social added value of site selection not considered.** Socially, the best locations for wind turbines are not considered, because in theory they can be placed anywhere, unless stipulated otherwise in the provincial spatial plans. Nowadays, however, there is a lot of criticism on this approach and resistance groups are urging legislators to map the best locations from a social and environmental point of view (Harmsen, 2021).

**Search areas for PV.** In the Regional Energy Strategies, search areas for the installation of rooftop and ground-mounted PV will be designated. There are certain regions with larger cities, these regions have more capacity to determine the search areas properly. Because of the differences between the regions, the quality of the search areas may strongly differ (Jaeger, 2021).

### **Identified good practice**

**Participative process for offshore wind.** Site selection for offshore wind energy in the Netherlands takes place through an extensive participative process. This participative process is a process which takes years in total to finish and takes into account the opinions of all stakeholders (Klok, 2021).

**Wozep.** Wozep is a long-term research programme launched in 2016 by the Ministry of Economic Affairs and Climate. It is an offshore wind ecological programme, which was established to expand the knowledge base about how wind farms affect protected species so that it will be possible to arrive at the best possible estimate of the ecological impact during the preparations for new road maps (proposed areas for wind farms in the years to come). So far, the research has generated important insights into how wind farms affect birds, bats and marine mammals. These findings are included in the determination of future locations for offshore wind in the Netherlands (WindopZee, 2020).

## **2.1.2. Electricity production licence**

### **Process flow**

There is no electricity production license in the Netherlands. Only for energy suppliers, a permit exists. Moreover, this license is only mandatory for suppliers who supply directly to small electricity consumers. These small electricity consumers are both corporate and private clients with an electricity connection of up to 3x80A. Renewable energy plants who sell their energy through Power Purchase Agreements (PPA) are therefore not covered by this scheme.

The energy supplier permit is done on corporate level and not on project level and is thus only required one time. In general, all large energy suppliers already have the necessary permit and operators of renewable energy installations sell their energy either through PPA's or through the large energy suppliers in the Netherlands (Jaeger, 2021).

### **Deadlines**

No deadlines were identified for this process step.

### **Detected barriers**

No barriers related to this process step were identified.

### **Identified good practice**

No good practice related to this process step was identified.

## 2.1.3. Administrative authorisation

### Process flow

The Administrative authorisation process step is the most important step in the Netherlands with regard to all of the discussed renewable energy technologies. Depending on the project and more specifically on the location, developers of renewable energy projects in the Netherlands have to apply for an All- In-One Permit for Physical Aspects (*omgevingsvergunning*).

This is the most important permit, laid down by the General Provisions Act Wabo. The Act enables members of the public and companies to use one transparent procedure to apply to one competent authority for permits for activities that impact on the physical environment. In addition to the All-In-One Permit for Physical Aspects, some projects require other permits, for example a Water Permit, a nature conservation permit and/or a permit from the Department of Waterways and Public Works, all depending on the exact location of the project (RWS, 2021).

For the development of offshore wind energy in the Netherlands, the government already foresees the necessary permits in the Offshore Site Decrees.

### Onshore wind

#### **Environmental Impact Assessment (EIA)**

In most cases, an EIA is required following decisions that enable the creation, change or expansion of a wind farm. This EIA is required before the actual application of the All-In-One Permit for Physical Aspects and the possible environmental permit. During the EIA, the effects on the environment are investigated.

For wind farms of 20 wind turbines or more, the initiator must perform an extensive EIA, while for all other cases, an EIA Pre-Assessment is required, based on the European EIA guideline (2011/92 / EU). This Pre-Assessment decides whether the project could have significant adverse effects on the environment or not. Based on this assessment, it is determined whether or not an extensive EIA is considered necessary (Infomil, 2021).

The EIA regulation is only applicable for wind energy projects with at least three wind turbines, since only then the project is considered as an activity referred to in the EIA Decree (REFEREREN).

In the Netherlands, the EIA is categorised either into an extensive or limited EIA. Furthermore, the EIA can result into a plan or project EIA. The EIA decree prescribes an extensive EIA procedure for plans and complex projects and a limited EIA procedure for simple projects. The extended procedure prescribes some extra steps that are not mandatory within the limited procedure. Which procedure applies depends on the decision subject to EIA.

The extensive procedure always applies when determining spatial plans. This includes establishing a structural vision, a provincial spatial plan or a government integration plan. The extensive procedure also applies if an appropriate assessment under the Nature Conservation Act is deemed necessary. The outcome of the extensive procedure is an EIA plan, if there is a spatial plan, or a project EIA if a permit granted for a specific project. Permits under the General Provisions Environmental Law Act (Wabo) and the Water Act, among other things, can be established through the limited procedure. The limited procedure always leads to a project EIA (Kaajan, 2013).

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For onshore wind, the EIA procedure is always extensive and either in the format of an EIA plan, when the wind energy park comes forth out of a destination plan, or in the format of a project EIA, when it concerns a single project. In the Netherlands, participation in wind energy development is very important (Harmsen, 2021). This sometimes results into an initiative combination of both EIA plan and project EIA into one combined IEA.

The municipality is the competent authority for wind farms up to 5 MW. For wind farms between 5 and 100 MW, the municipality is primarily the competent authority, but if a municipality does not take a decision and the developer of the wind farm turns to the province, the province can take over the role of a competent authority. The national government is the competent authority for wind farms of more than 100 MW (Harmsen, 2021).

For wind farms between 5 and 100 MW and above 100 MW normally the respective provincial and national coordination scheme is followed. With the application of these coordination schemes, planning decision-making and the granting of permits take place simultaneously. In that case, a provincial or national integration plan will be prepared, for which the extensive procedure applies (Kaajan, 2013).

The procedure for an extensive EIA goes as follows (Infomil, 2021):

- The applicant communicates his intention in writing to the competent authority.
- The intention to draw up a plan or to undertake an EIA activity and to go through the EIA procedure must be announced publicly in an appropriate manner. This notification is made by the competent authority.
- In the extensive EIA procedure, the competent authority consults in all cases the advisers and other administrative bodies about the scope and the level of detail of the EIA to be drawn up.
- According to the Environmental Management Act, the competent authority can ask various authorities for advice in the EIA procedure. In case of an extensive EIA, this consulting is even obligatory. The EIA Commission is one of these 'legal advisers'. The others are the Ministry of Infrastructure and Environment, the Ministry of Economic Affairs, Agriculture and Innovation and the Ministry of Education, Culture and Science. Other advisory boards are the transmission system operator (TSO) and distribution system operators (DSOs), Directorate-General for Aviation and Maritime Affairs and other organisations (Bosch and Van Rijn, 2013).
- After the consulting phase, the EIA study is drawn up. This determines the effects of the project on the environment. According to the European directives, these effects are possible significant environmental effects on biodiversity, population, human health, fauna, flora, soil, water, air, climate factors, material assets, cultural heritage, including architectural and archaeological heritage, landscape and the interaction between the above elements. This includes permanent, temporary, positive, negative, direct, indirect, secondary, cumulative and synergistic effects in the short, medium and long term (Infomil, 2021).
- In the extensive EIA procedure, the competent authority must obtain advice about the EIA from the national independent Commission for Environmental Impact Assessment (EIA Commission). To this end, the EIA is submitted to the EIA Committee no later than the moment the documents are made available for inspection. The EIA Committee assembles a working group consisting of a chairman, secretary and experts in the field of the expected environmental consequences. The final advice on the EIA is communicated to the competent authority and to the initiator (ibid.).
- In case the EIA concerns a plan or decision, it will only be adopted by the competent authority if the EIA procedure up to this step has been completed correctly and

completely and the information in the EIA can reasonably be used to form the basis for the final plan or decision (ibid.).

- Incorrect or incomplete EIA procedure can lead to the annulment of the decision to adopt the relevant plan or decision via the objection and appeal procedure (ibid.).
- The last phase of the extensive EIA is the obligatory evaluation and monitoring of the actual environmental consequences of the implementation of the proposed activity (ibid.).

### ***All-in-one Permit for Physical Aspects***

The All-in-one Permit for Physical Aspects is the one-stop shop. The General Provisions Act Wabo embodies two procedures for granting an All-in-one Permit for Physical Aspects, i.e., a standard procedure and an extended procedure. The standard procedure applies to the most common projects of a simple nature. The extended procedure is for projects with complex environmental or fire safety aspects. The two procedures have been aligned with the generic regulations of the General Administrative Law Act as far as possible and also contain some additions and amplifications.

The difference between the two procedures to obtain an All-in-one Permit for Physical Aspects only lies in the duration of the decision period by the responsible authority, which is much longer in case of the extended procedure (see deadlines below). With regard to onshore wind, the environmental permit is prepared using the regular procedure, in case no EIA is required after the EIA pre-assessment. In case the pre-assessment decides that an EIA is necessary, the onshore wind project is prepared through an extended procedure (Infomil, 2021).

The procedure of an All-in-one Permit for Physical Aspects starts by checking if there is a notification or permit requirement for the project. The project developer does this by specifying the location and the activities in the online Physical Aspects Desk. Afterwards the project developer needs to provide all the information to the competent authority, needed to determine whether an environmental permit and/or a Water Permit is receivable and whether the activities that fall under the notification requirement can be performed. The application/notification contains information about the application, the applicant and the location, a specification of the activities and appendices (Omgevingsloket, 2021).

If something is missing or incorrect in an application, the competent authority can request a supplement via the online Physical Aspects Desk. The decision period will then be suspended and the competent authority will inform the project developer of the period in which necessary information can be submitted. The decision period will start running again when either the additional information is submitted or when the set deadline for the submission of additional information expires (ibid.).

When an application goes through the extended procedure, before making a final decision the competent authority publishes a draft decision. This draft decision allows the project developer to react to the draft decision, by submitting an opinion within six weeks of publication of the draft decision. The six weeks of this period fall within the 6 months of the entire decision-making period (ibid.).

Ultimately, the final decision follows, after which an objection or appeal can be lodged by the project developer. After the decision has been announced, the developer has six weeks to lodge an objection or appeal in case of a negative decision to the competent authority. The developer can lodge an objection against a decision on an application that has been processed in accordance with the regular procedure. After lodging an objecting, the project developer still has the right to appeal to the administrative court in first

instance and even possibly appeal in second instance to the Council of State. In case of an extended procedure, the project developer can first submit opinions against the draft decision before appealing the decision (Omgevingsloket, 2021).

All stakeholders, who are able to show a certain relationship or connection with the project, can also appeal against the final decision of All-in-one Permit for Physical Aspects (see section 4 for more information).

### **Water Permit**

In the Netherlands, when performing activities in surface water or use groundwater, the project developer is often required to submit a notification. In some cases, he will need a Water Permit. For onshore wind energy this happens when onshore wind installations are placed on waterways or dikes. The procedure for obtaining this permit goes simultaneously with the procedure for the All-in-one Permit for Physical Aspects.

### **Nature Permit**

After performing the EIA and receiving the All-in-one Permit for Physical Aspects, many wind energy projects are subject to an additional permit, the Nature Permit. Whether a project requires the Nature Permit, depends on the results of the EIA performed. This is because within the EIA, a flora and fauna test / nature test are performed. Even for wind energy projects, not subject to an (extensive) EIA, a limited environmental test is performed. Based on these results, the responsible authority can decide whether an additional Nature Permit is required (Infomil, 2021).

The Nature Permit can be demanded on the basis of the conservation of Natura 2000 areas and on the basis of the species conservation. A Nature Permit is required from one competent authority, namely the province in which the plan area is located (Buwa, 2021). The procedure for the Nature Permit differs per province, but usually includes a participation step, where stakeholders can submit a specific question or complaint with regard to the draft permit. In addition, all stakeholders who submitted some form of feedback on the Nature Permit, have the right to lodge an objection against a positive decision (Provincie Drenthe, 2021).

### **Rooftop and ground-mounted PV**

In most cases rooftop PV installations are exempted from any permit. A rooftop PV project only requires an All-in-one Permit for Physical Aspects when one of the followings conditions are *not* met (Rijksoverheid, 2021):

- The panels are placed on a roof.
- The panels have an integrated inverter. If not, the inverter must be placed within the relevant building.
- If the panels are placed on a sloping roof, then the panels must not protrude and must remain within the roof surface on all sides.
- The panels must be placed in or directly on the roof surface.
- The angle of inclination of the panels must be the same as that of the roof surface on which the panels are mounted.
- If the solar panels are placed on a flat roof, the panels must remain at least as far from the roof edge as the height of the panels. For example, if the height of the panels is 50 centimetres, the distance to the roof edge(s) must also be at least 50 centimetres.
- Panels may not be placed on a monument or in a protected town or village view designated by the government without a permit.

If one of these above conditions is *not* met, the rooftop PV installation requires an All-in-one Permit for Physical Aspects, mainly with regard to the construction.

Ground-mounted PV installation on the other hand always requires an All-in-one Permit for Physical Aspects. This also applies to floating PV systems and installations that are part of a carport or on a monumental building (Rvo, 2021). Municipalities are the competent authority for granting the Permit for ground-mounted PV installations. For larger projects, with a capacity higher than 50 MW, the national coordination regulation can also apply.

As with onshore wind energy, PV installations located on waterways require a Water Permit. The procedure is contained in the procedure of the All-in-one Permit for Physical Aspects (Rvo, 2021). In theory, ground-mounted PV installations might also require a Nature Permit, but in practice this does not happen, because of the rather limited impact of these installations on nature and species (Jaeger, 2021).

### **Offshore wind**

Offshore wind in the Netherlands is developed through competitive tenders. The tenders are carried out for pre-defined wind farm zones. In these wind farm zones, the government decides on sites where wind farms can be constructed. Each zone can contain several sites. The Ministry of Economic Affairs and the Ministry of Infrastructure and Environment will take the so-called wind farm Site Decisions. The wind farm Site Decision is the necessary consent required to build a wind farm and specifies the location for the wind farm and the conditions under which it may be constructed and operated (Klok, 2021).

These conditions provide flexibility for the design of the wind farm. This gives commercial parties the best opportunities for choosing the best technical options within the natural and environmental framework to realise their project at the lowest possible costs. Wind farm Site Decisions are subject to an environmental impact assessment (EIA), which is commissioned by the Ministry of Economic Affairs and the Ministry of Infrastructure and Environment (RVO, 2021).

### ***Environmental Impact Assessment (EIA)***

The EIA necessary to draw up the offshore wind Site Decisions is based on the extensive EIA procedure, because it results into a plan EIA. The procedure follows the same procedure as described in the section on onshore wind (see above). The following elements are taken into account for the EIA of offshore wind projects (Commisiemer, 2021):

- The EIA Committee recommends working out at least two project design variants: one where the energy yield for the entire park is maximized and one where the locations of and mutual distance between the wind turbines are varied within the available area. The aim of this is to create as much environmental benefit as possible (for example for the prevention of bird victims or improving shipping safety).
- Mitigating measures to reduce or eliminate any effects on, for example, nature (birds and underwater life). This includes shutting down the turbines for birds and alternative foundations for pile driving that produce much less underwater noise.
- A quantitative description of the effects on birds, underwater life (including marine mammals) and shipping safety. Both the absolute effects for the entire park and the effects per unit of energy yield.
- Insight into the cumulative effects on birds, underwater life (including marine mammals) and shipping safety.

- The consequences of protected nature and the possible influence of the wind farm on characteristics and values of the North Sea and Wadden Sea.

Based on the finalisation of a positive EIA, the Site Decisions are drawn up. These Decisions form the basis for the permit approval for offshore wind farms, won through the competitive tendering system (Rvo, 2021).

### **Water Permit**

To make wind energy at sea possible, a separate law has been passed in the Netherlands - the Offshore Wind Act. Due to the adoption of the Offshore Wind Act, the water permit requirement under the Water Decree for the installation of wind turbines at sea was lifted. As a result, based on the Water Decree, only a notification for the installation of wind turbines is required - the notification for the use of *Rijkswaterstaat* property. *Rijkswaterstaat* is the executive agency of the Ministry of Infrastructure and Water Management. The Water Decree contains further conditions with regard to the notification, including the submission requirements and rules for operation (Infomil, 2021).

### **Deadlines**

#### **Environmental Impact Assessment (EIA)**

The EIA Decree provides for a deadline of six weeks for issuing the advice by the EIA Commission to the initiator, including consultation, which the competent authority may extend once by a maximum of six weeks (term of order).

After drawing up the EIA, the EIA Commission also has six weeks to communicate their advice to the responsible authority (art. 3.9 WABO).

#### **All-in-one Permit for Physical Aspects**

The deadline for the decision-making process under the standard procedure is 8 weeks, which may be extended once by further 6 weeks at most. Missed deadline will automatically result in issue of a permit (under the principle of *lex silencio positivo*). The All-in-one Permit will then be granted in conformity with the application (RWS, 2021).

The extended procedure requires the competent authority to decide on the permit within 6 months of receiving the application. This period is extendable once by a maximum of 6 weeks if the subject is highly complex or controversial. A permit will not be automatically granted if the period of 6 months (or the extended period) is exceeded. The All-in-one Permit granted under this procedure will take effect after the deadline for appeals has expired (RWS, 2021).

#### **Nature Permit**

The term to decide on the application for a Nature Permit is 13 weeks. The competent authority can extend this deadline once by further 7 weeks.

### **Detected barriers**

**EIA pre-assessment.** For an onshore wind project of one or two wind turbines there is never an obligation to carry out an EIA pre-assessment as these small projects are not defined in the activity categories of the EIA Decree. This is surprising, since it is not immediately clear why a wind farm of three turbines will have more or different effects than one or two turbines (Kaajan, 2013).

**Extensive nature assessment.** For large onshore wind projects, the nature assessment, which is part of the larger EIA and is required to obtain a Nature Permit, can be very extensive. The provincial deputy is competent for granting the Nature Permit, but

the deputy is re-elected every 4 years. Sometimes the whole procedure to perform the EIA and the nature assessment, can take more than 4 years, which can result into a situation where the new provincial deputy has another opinion on the matter. As a consequence, some projects finally are not granted the necessary permits (Harmsen, 2021).

**Monitoring of environmental effects.** Monitoring of environmental effects is obligatory after installing a wind energy turbine(s), as it is part of the Nature Permit. However, the monitoring takes place in a fragmented manner, where the results are not shared with a monitoring authority and the monitoring results are not collected nationally in order to obtain a larger picture of the environmental effects. A national monitoring agreement would be very beneficial to identify environmental effects more on macro level (Dotinga, 2021).

**Unequal level playing field because of participation initiatives.** As part of the participation initiative included in the Regional Energy Strategies, renewable energy projects have to strive to achieve a participation share of 50% of the local population. This level of participation can be obtained by, among other things, sharing the profits. However other facilities and energy producing facilities are not bound to this participation rule. This can have a negative influence on the level playing field between these energy producing facilities and renewable energy power plants (Jaeger, 2021).

### Identified good practice

**Environmental consideration is very large in the Netherlands.** In general, the environmental consideration in the permitting procedure for renewable energy projects in the Netherlands is very high. For example, if we look at the rules with regard to species conservation, we see that the Netherlands is a frontrunner on the consideration of such sensitive themes in the permitting procedures. Each species in the local environment of the project has to be mapped prior to the construction and all effects on every single species have to be identified (Dotinga, 2021).

**Participation level established by the Regional Energy Strategies.** As indicated above, the Regional Energy Strategies prescribe a participation level of 50% of the locals in the renewable energy projects. The project developer, together with the competent authority, draws up a participation plan for each wind project. Also for ground-mounted PV installations, similar participation plans are drafted. These plans describe who are the stakeholders and what questions, concerns and wishes they have, how and when they will be involved in the project and how they can participate (Harmsen, 2021).

There are many different forms of project participation. Local residents can share the profit of a renewable energy project through project certificates (shares). Participation can also be done by investing in bonds; a financial participation with risk. Through investment, participation is possible both before and after the construction of the wind farm or the solar park (Jaeger, 2021).

**Code of Conduct for ground-mounted PV and onshore wind.** In agreement with the stakeholders, the sector organisation HollandSolar has drawn up a Code of Conduct for ground-mounted PV installations. The sector is bound by the agreements included in this Code. The Code of Conduct was also co-signed by environmental organisations, which results into a situation of good understanding between developers of ground-mounted PV projects and opposing parties. The Code mainly concerns good management and good practice. It even foresees complaint procedures if the rules are not followed and has its own assessment committee consisting of representatives from the sector organisations

and environmental organisations. In general, everyone always agrees with the decisions made by the committee. This results into much less resistance and thus much less appealing procedures against ground-mounted PV projects (Jaeger, 2021).

For wind onshore there is also a Code of Conduct, approved by wind, residential, nature and environmental organisations. This Code of Conduct mainly focuses on forms of participation that increase the acceptance of the projects (Harmsen, 2021).

**Reduced sunk costs for offshore wind.** For offshore wind in the Netherlands, all necessary permits are already prepared beforehand by the Dutch government, based on an extensive plan EIA. This also includes all arrangements with regard to the grid connection. Because of this, there is barely no sunk cost for project developers who want to participate in the tenders, considering they do not need to perform any pre-research with regard to the site selection (Klok, 2021).

## 2.1.4. Grid connection permit

### Process flow

The connection process for renewable energy plants comprises the following steps (RES Legal, 2019):

- The plant operator applies to the grid operator for connection.
- The grid operator makes a connection offer (art. 24 (1) Electricity Act).
- The grid operator and the plant operator conclude an agreement on grid access and connection.
- If necessary, the grid is extended or reinforced (art. 28 in conjunction with art. 20 (1) Electricity Act).
- The plant is connected to the grid.

Power generation plants shall be connected within a reasonable period of time, i.e., within 18 weeks after the connection offer is made (art. 23 (3) Electricity Act).

Plants whose capacity exceeds 10 MW do not need be connected within this time scale (art. 23 (3) Electricity Act). The time scale for the connection of these plants is set out in the terms of the agreement concluded by the parties, in the so-called *transport indication*. This is a non-binding indication when the plant will be connected to the grid, in function of the grid capacity.

However, the deadline included in the transport indication is not legally binding and thus the grid operators have a certain monopoly of decision-making with regard to the grid connection. There is no grid connection permit as such for all renewable energy sources, except offshore wind, because in theory all renewable energy installations have to be connected to the grid.

For offshore wind the grid connection permit is provided by the Dutch government, based on the performed plan EIA. To promote offshore wind the TSO TenneT will construct five standardised platforms with a capacity of 700 MW each within the wind farm zones. They will each be connected to the national grid with two 220 kV export cables. As soon as a 380 kV subsea cables are available, the project developers can apply to reduce the number of required cables (Ogg, 2021).

## Detected barriers

**Transport indication.** Little can be negotiated in the process of applying for a transport indication. Even if a project developer makes a demand for half of its installation capacity, it is not always granted without a doubt. There is also no second possibility to apply for a transport indication, for example a project developer might apply for transport indication for 70% of its project capacity, but the application is refused. Then he cannot apply for 50% of the capacity anymore (Jaeger, 2021).

## Identified good practice

No good practice related to this process step was identified.

## 2.1.5. Corporate legal fiscal

### Process flow

The corporate legal fiscal procedure for onshore wind and ground mounted PV mainly concerns the SDE++ application procedure. For residential rooftop PV with a capacity lower than 15 kW, the financial support is mainly available through the net-metering subsidy scheme. However, this scheme is planned to be phased out in the upcoming years (PV-magazine, 2021).

The support under the net-metering scheme is granted automatically to residential PV holders by the electricity suppliers and is regulated in the Electricity Act. Most energy suppliers require that the residential PV installation is registered on [energieleveren.nl](http://energieleveren.nl), which is the official registration website of all grid operators for electricity production systems (Rvo,2021).

The SDE++ application process is as follows (Rvo, 2021):

- Before an application can be submitted, a project developer must first request eRecognition. This is the digital recognition of citizens and organisations that checks the official digital authorisation of a resident or organisation who wants to perform a public service online. After this, it is important that all relevant appendices are gathered. These appendices are enclosed with the application and include a transport indication from the grid operator, a grid connection feasibility study and the necessary permits (mentioned above).
- The application must be submitted via the eLoket. The eLoket is the official website of the Netherlands Enterprise Agency to apply for subsidies who fall under its competence. The Netherlands Enterprise Agency then assesses the completeness of the application conceptually and in terms of content. The Netherlands Enterprise Agency might also request additional information before deciding to grant the SDE++ subsidy or not (Rvo, 2021)

### Deadlines

According to the SDE Decree, a project developer receives a final decision on the granting of the SDE++ subsidy within 13 weeks of the application. This period can be extended once by a maximum of 13 weeks (Rvo, 2021).

## Detected barriers

**Transport indication.** It is mandatory to request the transport indication with the SDE++ application, because it is an obligatory to attach the transport indication to the

SDE++ application. However, there is no legislative framework regulating the issuing of the transport indications and thus no certainty over their issue. Therefore, the grid operator has a lot of power over the SDE++ subsidy granting, because without the transport indication, one cannot apply for the SDE++ subsidy. In addition, a grid operator is not bound to comply with the transport indication, which can cause the delays in the effective realisation of the project (Harmsen, 2021).

**Realisation periods for PV.** The realisation periods sometimes cause problems for PV projects, most often for rooftop PV. according to the SDE decree, in order to be eligible for the SDE++ subsidy, the PV project needs to be realised within 2 years from the moment of the granting decision. If within that timeframe the project is not realised, the project developer cannot apply for a SDE++ subsidy for one other year. To implement a rooftop PV project within 2 years is getting increasingly difficult, due to the grid operators who state that they have to wait longer than 2 years to reinforce the grid (Jaeger, 2021).

### Identified good practice

No good practice related to this process step was identified.

## 3. Use of IT systems

The online Physical Aspects Desk is the online platform which is used for all applications in the context of the All-in-one Permit for Physical Aspects. It is the main platform for the permitting procedure for onshore wind and ground-mounted PV. Whether the responsible authority in the permitting procedure is the municipality, the province or the national government, the online platform is accessible, both for the responsible authority and the project developer (Infomil, 2021).

In addition, the online platform is used by some provinces to apply for a Nature Permit as well. In general, the ease of use and effectiveness of the online platform is perceived very positive by the interviewees (Jaeger and Harmsen, 2021).

## 4. Complaint procedure

Both for the All-in-one Permit for Physical Aspects and the Nature Permit stakeholders are able to lodge an objection or even appeal to court.

After the decision has been announced of the granting of the All-in-one Permit for Physical Aspects, an interested party can lodge an objection or appeal against the decision taken within a period of six weeks. Only one body is responsible for the appeal procedure on the final decisions - the Council of State (Omgevingsloket, 2021).

In the Netherlands, appeal procedure is not really perceived problematic, because appealing parties have to prove a substantial interest in the project. An appeal is almost always filed when an onshore wind energy project receives the necessary permits. Usually this does not pose problems, because the project developers almost always win. The appeal procedure is not a bottleneck in itself, however, it takes a long time, especially because of the lack of personnel of the Council of State. The appeal procedure takes up to months and it can take up to another six months, in case of an appeal in last instance to the Council of State. In general, it is only possible to lodge an appeal once. The Council of State examines fairly rigorously whether an appealing party has the right to appeal (Harmsen, 2021).

## 5. Specific features to ease administrative procedure

Table 2 below provides information on the existing specific features to ease administrative procedures in the Netherlands

Table 2: Specific features to ease administrative procedures

Specific feature	Existing	Short description
Simultaneous procedures	yes	<p>The Spatial Planning Act (Wro) contains rules about the so-called coordination schemes. The coordination scheme must accelerate and improve the quality of decision-making and ensure transparency and clarity for citizens and businesses. The Spatial Planning Act determines that there is a municipal, provincial and national coordination scheme.</p> <p>With a coordination arrangement, the competent authority can run and coordinate all procedures for the various permits and the zoning plan or integration plan in parallel. All permits and exemptions are made available for inspection at the same time as the integration plan. This means that all decisions are made at one time and that the plan and the conditions attached to it can be assessed in its entirety. Anyone who wants can react to the plan by submitting an opinion.</p>
National contact points and one-stop-shops	yes	<p>The All-in-one Permit for Physical Aspects tries to cover all the necessary permits in one permit and procedure. It is a one-stop shop, through the online platform and there is only one responsible authority. Only the Nature Permit is an additional permit, sometimes required for onshore wind and ground-mounted PV projects.</p>
Application of 2+1 and 1+1 rules	no	
Simple notification procedure	no	
Pre-planning	no	
Pre-application consultation	no	
Project acceptance measures	yes	<p>The participation grade included in the Regional Energy Strategies and all of the participation initiatives are strong measures to increase the project acceptance. This in combination with the Codes of Conduct by both the wind energy sector and PV sector in the Netherlands, result into a high project acceptance.</p> <p>Stakeholder involvement is taken into account in the participation plans, drawn up by both the project developer and the responsible authority. These participation plans are both a responsibility of the project developer and the responsible authority.</p> <p>There are many different forms of project participation. Local residents can have a share in the profit of a renewable energy projects through project certificates (shares) (e.g., in the wind project). Participation can also be done by investing</p>

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		<p>in bonds; a financial participation with risk. Through investment, participation is possible both before and after the construction of the wind farm or the solar park.</p> <p>Another practice in the Netherlands is the installation of free solar PV panels for all local residents as part of a large ground-mounted PV project. Other possible initiatives might take place before the actual construction of the renewable energy projects and after. This participation regulation finds its origin in the Regional Energy Strategies.</p>
Measures to streamline litigation by third parties	no	
Other	no	

## 6. Indicators to measure the performance of the overall process

Table 3 below provides information on the indicators to measure the performance of the overall administrative and grid connection process in the Netherlands.

*Table 3: Performance indicators to assess administrative and grid connection processes*

Performance indicator	Description
Average response time by the competent authorities and TSO/DSO for grid connection procedures	The average response time is short (days to weeks depending on the issue) and not perceived problematic at all.
Process duration	<p>Total process duration of onshore wind projects usually takes up to 5 to 8 years. The EIA procedure can take up to 4 years or more, depending on the size of the project and project-specific conditions. The All-in-one Permit for Physical Aspects procedure usually takes up to 1 year for onshore wind. The appeal procedure takes up to a few months, but can be extended by another 6 months, totalling to a maximum of one year.</p> <p>Offshore in the Netherlands takes less time to develop, because after winning the tender, all of the necessary permits and administrative work are provided. As a consequence, the average process duration is 4 years for the construction of the offshore wind farms. The grid connection of offshore wind is also done within those 4 years.</p>
Project approval rates	N.A.
Costs of administrative processes	N.A.
Share of permits that are legally challenged	90%
Share of legal challenges that are overruled	Almost 100%

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Stakeholder interests	There is a possibility for stakeholders to comment on the draft decision in the extended procedure of the All-In-One Permit for Physical Aspects.
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## References

- Bosch and Van Rijn, 2017. *Ruimtelijk plan Amsterdam Noord*. Available at: [http://ftp.ruimtelijkeplannen.amsterdam.nl/DRO/plannen/NL.IMRO.0363.N1302PB.PSTD-/NL.IMRO.0363.N1302PBPSTD-VG01/b\\_NL.IMRO.0363.N1302PBPSTD-VG01\\_tb1.pdf](http://ftp.ruimtelijkeplannen.amsterdam.nl/DRO/plannen/NL.IMRO.0363.N1302PB.PSTD-/NL.IMRO.0363.N1302PBPSTD-VG01/b_NL.IMRO.0363.N1302PBPSTD-VG01_tb1.pdf) [Accessed 14 January 2021].
- Commissiener, 2021. Veelgestelde vragen - Commissiener.nl. Available at: <https://www.commissiener.nl/themas/energie/veelgesteldevragen> [Accessed 14 January 2021].
- Infomil, 2021a. Omgevingsvergunning Afwijken bestemmingsplan en m.e.r. Available at: <https://www.infomil.nl/onderwerpen/ruimte/ruimtelijke/milieu/omgevingsvergunning/#Formelemer-beoordelingsplicht> [Accessed 14 January 2021].
- Infomil, 2021b. Windturbine. Available at: <https://www.infomil.nl/onderwerpen/integrale/activiteitenbesluit/activiteiten/installaties/windturbine/> [Accessed 14 January 2021].
- Infomil, 2021c. Windturbines onder Activiteitenbesluit. Available at: <https://www.infomil.nl/onderwerpen/integrale/mer/overzicht/virtuele-map/windturbines/> [Accessed 14 January 2021].
- Lingewoud, B.V., 2021. Bureau Waardenburg: Wet natuurbescherming. Available at: <https://www.buwa.nl/wet-natuurbescherming.html> [Accessed 14 January 2021].
- Ministerie van Economische Zaken en Klimaat, 2020. Duurzame energie (9 December 2020). Available at: <https://www.rijksoverheid.nl/onderwerpen/duurzame-energie> [Accessed 14 January 2021].
- Ministerie van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer, 2021. Windenergie op zee (22 February 2021). Available at: <https://www.rijksoverheid.nl/onderwerpen/duurzame-energie/windenergie-op-zee> [Accessed 14 January 2021].
- Natuuronderzoek helpt bescherming dieren bij ontwikkeling windparken op de Noordzee, 2021. Available at: <https://windopzee.nl/onderwerpen-0/actueel/nieuws/nieuws/natuuronderzoek-helpt-bescherming-dieren/> [Accessed 14 January 2021].
- Ogg, F., 2018. *The Netherlands*. Available at: [http://www.wwindea.org/wp-content/uploads/2018/06/the\\_netherlands\\_full.pdf](http://www.wwindea.org/wp-content/uploads/2018/06/the_netherlands_full.pdf) [Accessed 14 January 2021].
- Omgevingsloket online - De stappen, 2021. Available at: <https://www.omgevingsloket.nl/Particulier/particulier/home/De-stappen/BehandelprocedureParticulier#/home/De-stappen/AanvraagParticulier> [Accessed 14 January 2021].
- PBL, 2019. *2019 Wind op land lessen en ervaringen*. Available at: <https://www.pbl.nl/sites/default/files/downloads/pbl-2019-wind-op-land-lossen-en-ervaringen-3379.pdf> [Accessed 14 January 2021].
- Provincie Drenthe, 2021. Natuurvergunning gebiedsbescherming (Natura 2000) aanvragen. Available at: <https://www.provincie.drenthe.nl/@125292/natuurvergunning/> [Accessed 14 January 2021].
- PV Magazine, 2019. Netherlands to maintain current net-metering conditions until 2023 (26 April 2019). Available at: <https://www.pv-magazine.com/2019/04/26/netherlands-to-maintain-current-net-metering-conditions-until-2023/> [Accessed 14 January 2021].

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The Netherlands

Rijksoverheid, 2018. Heb ik een vergunning nodig om zonnepanelen op mijn dak te plaatsen?, 2 July 2018. Available at: <https://www.rijksoverheid.nl/onderwerpen/duurzame-energie/vraag-en-antwoord/heb-ik-een-vergunning-nodig-om-zonnepanelen-op-mijn-dak-te-plaatsen> [Accessed 14 January 2021].

Rijksoverheid, 2021. Windenergie op zee (22 February 2021). Available at: <https://www.rijksoverheid.nl/onderwerpen/duurzame-energie/windenergie-op-zee> [Accessed 14 January 2021].

RVO, 2020. *Procedures voor windenergie*. Available at: <https://www.rvo.nl/sites/default/files/2019/03/Procedures%20voor%20windenergie.pdf> [Accessed 14 January 2021].

RVO, 2021. Zon SDE++ | RVO.nl | Rijksdienst. Available at: <https://www.rvo.nl/subsidie-en-financieringswijzer/sde/aanvragen/zon> [Accessed 14 January 2021].

RWS, 2021. An All-in-one Permit for Physical Aspects. Available at: <https://rwsenvironment.eu/subjects/general-provisions-0/all-one-permit/#:%7E:text=The%20Dutch%20Act%20'Wabo'%20that,impact%20on%20the%20physical%20environment> [Accessed 14 January 2021].

Sluiter, 2020. Kenniscentrum. Available at: <https://ploum.nl/kenniscentrum/nieuws/nieuwe-zonneparken-worden-vanaf-nu-getoetst-aan-de-zonneladder> [Accessed 14 January 2021].

Weber, D., 2020. Zonnepanelen vergunning: Alles informatie | Zonnepanelen-Weetjes.nl. (20 March 2020). Available at: <https://www.zonnepanelen-weetjes.nl/blog/vergunning-zonnepanelen/#:%7E:text=Over%20het%20algemeen%20heeft%20u,uw%20dak%20geen%20vergunning%20nodig.&text=De%20panelen%20worden%20op%20een,zijn%20ge%C3%AFntegreerd%20met%20de%20omvormer> [Accessed 14 January 2021].

## Interviews

Dotinga, H., 2021. Vogelbescherming Nederland. Interviewed on 5 February 2021.

Harmsen, R., 2021. Netherlands WindEnergy Association. Interviewed on 1 February 2021.

Jaeger, N., 2021. HollandSolar. Interviewed on 21 January 2021.

Klok, H., 2021. Netherlands WindEnergy Association. Interviewed on 9 February 2021.