Project	INTERREG Project SMART ENERGY REGION EMMEN-HAREN (SEREH)
WORK PACKAGE 4	Analysis of Current Legal Situation (WP4.I) and Design of Future Legal Framework for Cross-Border Local Energy Systems (WP4.II)
Deliverable WP4.I.2	Current Legal Framework for Cross-Border Local Energy Markets – National Legal Frameworks
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Date	22 December 2021

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LIST OF ABBREVEATIONS

AC	Alternating Current
ACM	Autoriteit Consument en Markt
CCS	Carbon Capture Storage
CDS	Closed Distribution System
CEC	Citizen Energy Community
DC	Direct Current
DSO	Distribution System Operator
EEG	Erneuerbare Energien Einspeisegesetz
EMD	Electricity Market Directive
EMR	Electricity Market Regulation
EnWG	Energiewirtschaftsgesetz
EU	European Union
GoO	Guarantee of Origin
MS	Member States
PAP	Primary Allocation Point
REC	Renewable Energy Community
RES	Renewable Energy Sources
RESD	Renewable Energy Source Directive
SAP	Secondary Allocation Point
SDE	Subsidie Duurzame Energie
SEREH	Smart Energy Region Emmen Haren
SME	Small and Medium-Sized Enterprises
TPA	Third Party Access
TSO	Transmission System Operator
WP	Work Package

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EXECUTIVE SUMMARY

The SEREH project aims at identifying and analysing the preconditions of a local energy system functioning across the national border between the Netherlands and Germany, more precisely between the municipalities of Emmen (NL) and Haren (DE). The overall goal is to match the supply and demand of renewable energy sources (RES) locally and across the border and thereby improve the efficiency of RES supply and demand.

Object and Scope of this Deliverable
This deliverable 4.1.2 is part of the work within the SEREH project and has as its objective to identify legal challenges at the national level (i.e. the Netherlands and Germany) regarding the implementation of different settings for SEREH and to propose recommendations which legal changes need to be taken in order to overcome those barriers and to enable the SEREH settings (as sketched here below). Following a decision taken by the project lead to focus on the transport of electricity across the national border, this deliverable exclusively focuses on the legal framework of the electricity sector. The settings were developed as a joint effort of the entire project consortium and entail the following situations:

- Cross-border connection of distribution between DE and NL ("cross-border distribution grid setting")
- RES generation installation is located either in Germany or in the Netherlands and has two connections, one to the Dutch grid and one to the German grid. Only one of the connections can be used at the time, so there is never a potential link between the systems ("double RES generation connection to DE- or NL distribution grid").
- RES generation installation is located in DE and has a direct connection to one specified customer in NL (for example a hydrogen production facility or industrial customers such as a greenhouse grower). There is no direct connection of the RES generation installation to the distribution grid and vice versa. ("direct-connection setting")
- A group of producers and consumers operating a part of the existing distribution systems plus a cross-border-connection across the national border. The connection to the public electricity system on each side of the border is limited (the part of the distribution grid functions to the largest possible extent as an "island")

All settings qualify as a specific infrastructural solution that can be used to facilitate the transport of electricity across the national border and fall outside of the standard regulatory framework applying to TSOs and DSOs. This report analyses whether and to which extent existing legal framework allows for the above mentioned SEREH settings.

Overview of Content and Key Findings per Setting

1) Connecting distribution systems across the border

Following Regulation 2019/943/EU, which applies directly in national jurisdictions, the interconnection of electricity systems is exclusively established at transmission level. Dutch law seems to apply a broader perspective as it defines interconnectors as *"cross-border grids"*. Moreover, only *"cross border grids"* functioning on the basis of AC are part of the national transmission system and need to be operated by the national TSO. Arguably, *"cross-border grids"* functioning on the basis of DC could thus be developed at distribution system level as there is no reference to a specific voltage level. Additionally, the Code on Terms in Electricity, however, contains also a definition of a *"foreign connection"* (*"buitenlandverbinding"*), i.e. a *"connection (> 500V) between the national transmission system and the grid of a foreign system operator"*. Based on this, one could conclude that a connection extending the national border can only connect the Dutch transmission system with a foreign system. Whether the foreign system needs to be a transmission system too is not specified any further but it could possibly be a foreign distribution system. When it comes to definition of the operator of *"cross-border grids"*, or as defined in Dutch law *"interconnector operator"*, two inferences can be made: Firstly, it seems not specifically excluded that *"cross-border grids"* functioning on AC can also be located at the medium or low-voltage grid level. However, they would still need to be operated by the appointed TSO. Secondly, it is not excluded that *"cross-border grids"* functioning on DC could be established at distribution system level and could be operated by another party than the appointed TSO. Most likely, these cables would qualify as a *"grid"* according to the Dutch Electricity Act, which would require the appointment of a system operator for its operation. The German legal framework does not explicitly mention a comparable option to the cross-border grid functioning on the basis of DC at distribution system level; however, it does not exclude it either. This would require assessing whether connecting a cross-border grid functioning on the basis of DC could lead to a refusal of a connection to the German distribution grid on the basis of operational or economic constraints. All in all, while the wording of the law might provide room for the possibility to develop a cross-border grid functioning on the basis of DC at the distribution system level, this would be contradictory to Regulation 2019/943/EU and the definition of *"foreign connection"* in the Dutch Code on Terms in Electricity. It must also be added that it is apparently not a common practice to connect distribution system even within one territory of a Member State. Yet, as both legal frameworks do not exclude the option to connect a distribution system with another distribution system (within the territory of the respective jurisdiction) it could be argued that in order to achieve a proper Internal Energy Market in the EU, it should be assessed whether it is necessary and possible to develop cross-border connections on distribution system level. Based on this analysis we propose the following recommendation:

- Build an alliance, ideally similar initiatives in other EU Member States, or at least stakeholders who are interested in this development and address the topic of interconnection at distribution system level at the EU policy level.

2) Double RES generation connection to DE- or NL distribution grid

Providing a connection between installation in one Member State and the distribution system in the other Member State is not specifically mentioned, but also not excluded in both jurisdictions and as such it does thus not seem to constitute an immediate obstacle. However, considering the technical and economic viability of providing such a connection needs to be assessed on the basis of more information, for example on the exact distances, the exact capacity connected, the source of RES, and the costs of establishing and maintaining two connections. Another obstacle is the access to support schemes, as both legislations clearly state that producers are only eligible to financial support if they the installation is located in the territory of the respective Member State and also that the production installation is connected to the grid in that respective Member State. However, both legislations allow for the opening of support schemes to foreign producers under the condition that a *"cooperation mechanism"* is in place as established by the RESD 2018/2001/EU. Based on this analysis we propose the following recommendation:

- Address the national policy makers to consider the establishment of a "cooperation mechanism" for opening up (a part of) the support scheme for energy produced on the basis of RES.

3) Direct electricity connection for exclusively specified customers

Constructing a *"direct line"* which crosses the border between the Netherlands and Germany seems a straight-forward and feasible option from a legal perspective. A *"direct line"* is an EU legal concept defining a cable connecting a producer with a (limited number of) consumer(s). Both, the producer and the consumer can only have limited additional connections to the grid. So, a *"direct line"* does not connect grids, but an exclusively defined producer, with exclusively defined consumers. Some uncertainty remains concerning whether and who of the connected parties (producer and consumer or consumers) can have an additional connection to the public grid system. This option seems to be more limited under the Dutch legal framework then in the German one. However, this might also be due to inconsistencies in the translation of the word *"isolation"* to the German word *"einzeln"*. While the Dutch national regulatory authority is very transparent about the administrative procedure and the registry of *"direct lines"*, the German regulatory authority is less transparent and little information seems to be publicly available. In the Netherlands, production installations connected to a *"direct line"* are eligible to request GoOs and to receive support from the support mechanisms for RES. This is not the case in Germany. While in the Netherlands, consumers (*"verbruikers"*) connected to a *"direct line"* are not falling under the definition of *"customers"* (*"afnemer"*) they are not falling under the general framework for consumer protection, while consumers in Germany (*"Kunden"*) still remain in the same category of consumers. For SEREH this would suggest a more favorable situation where the production installation is located in the Netherlands and the consumer is located in Germany. Based on this analysis we propose the following recommendation:

- Request transparency of the German regulator with regard to the administrative procedure and the registry of existing *"direct lines"* in Germany.

4) Cross-border group of producers and consumers

EU law, in particular the EMD 2019/944/EU, provides for an innovative concept, namely CEC, which can be open to function across national borders. Currently, both Member States, the Netherlands and Germany, have not implemented the provisions in their national legal frameworks. While the Netherlands provides a concept for a proposal for a new national Energy Act, the German legislator did not include specific provisions in the amendments transposing the EMD 2019/944/EU into German law. Current proposals by the Dutch legislator, however, also limit the application of the concept for the SEREH project as the option to develop and operate grids by energy communities is not taken up in the proposal and the option that energy communities can function across national borders is also not further mentioned or developed. The concept *"customer facility"* under German law seems also to be limited to the national territory and would thus not fit the scope of the SEREH project in its goals. While the concept of energy community seems to be limited to be applied directly across national borders, it might be possibly to combine this concept with one of the other settings. For example, an energy community which allows for members and shareholders from both countries, might own a production installation which is located (for example) in the Netherlands which is connected via a *"direct line"* across the national border to a specified customer located in Germany. Another option might be that if a *"cooperation mechanism"* is established as meant under RESD 2018/2001/EU, for example a *"joint project"*, an energy community might become the operator of this *"joint project"*. Based on this analysis we propose the following recommendation:

- Address the national policy makers and legislatures and request to ensure that membership of energy communities is open to persons located in another country where the energy community is established.

Speaking in terms of which of the sketched settings is most realistic to be implemented under the current legal framework, it seems that the setting of the *"direct line"* is most favorable (setting 3). However, this setting is arguably also the most limited setting as it "simply" implies the connection of a production installation to one or more specified customers. Correspondingly, the setting which seems to be the least realistic to be implemented under the current legal framework, the connection of distribution systems across the border (setting 1), seems also to be the most far-reaching one in terms of interconnecting markets at the distribution system level. Setting 2 (production installation with two connections, one to each Member State) seems to be somewhere in between. Main obstacles here concern related additional costs due to the impossibility for RES producers to access RES support schemes in another Member State and extra costs resulting from establishing and maintaining two connections. The final setting 4 (cross-border group of consumers and producers, i.e. energy communities) seems to be an option which can best be applied in combination with for example setting 2 or 3. For example, an energy community could own a production installation in the Netherlands. The energy community would need to be open for members and shareholders located in Germany. The production installation could be connected to a *"direct line"* which connects to a consumer in Germany. Another option could be that an energy community could be involved in the

implementation of a *"joint project"* as established by the RES 2018/2001/EU. Precondition for this would be a *"cooperation mechanism"* between Germany and the Netherlands. Currently, such a *"cooperation mechanism*" is not in place, however, at least Germany has experience with using this mechanism in cooperation with Denmark.

Apart from the recommendations developed per setting, more general recommendations are developed. Those include the following:

- Lessons may be learned from other areas where cross-border energy supply on distribution level (may) take place. One example is the cross-border community of Baarle consisting of the villages Baarle-Hertog located in Belgium and the village Baarle-Nassau in the Netherlands. Both are part of one community and need to be supplied with electricity by either or one of the national electricity supply companies and the distribution systems operated by the respective DSOs (Enexis in NL and Iveka in BE). Is each DSO operating their distribution grid along the lines of the national territories and/or are both systems interconnected? We would argue that the DSOs have some sort of agreement on how to divide the task of operation, regardless of the national borders. Further research on how this is organized may be beneficial for SEREH.

- Attempts to develop cross-border energy systems is not limited to SEREH. For example, the Association of European Border Regions initiated research on a very similar initiative in the Dutch-German context and might also be aware of other border regions where similar approached might be of interest. Building an EU network on this matter might be of special relevance for creating an alliance and lobbying on EU level for more fundamental changes, such as outlined hereabove under the recommendations for the setting 1.

- Related to the foregoing points, it is also relevant to mention that it is recognized at EU level that especially in border regions differing legal frameworks can be a severe obstacle for implementing projects across borders. Currently, a Regulation on a mechanism to resolve legal and administrative obstacles in a cross-border context is in the EU legislative process, awaiting the position of the European Council.[1] The *"mechanism"* would entail application of national law for a specific area of one Member State in the bordering Members State in order to resolve potential legal conflicting rules. This mechanism would need to be applied on a voluntary basis by the Member States, for a joint project – which can involve infrastructure or services of general economic interest – in a specific border area. This would further lead to a process in order to identify the legal obstacle. The mechanism would then provide for different measures to overcome the obstacles, which may involve allowing for derogations from the normally applicable national rules for the specific cross-border

[1] Proposal for a Regulation of the European Parliament and of the Council on a mechanism to resolve legal and administrative obstacles in a cross-border context – COM(2018) 373 final, 29.05.2018.

project. It is thus strongly recommended to follow the process of this Regulation in the EU legislative process.

1 INTRODUCTION

The Netherlands and Germany are both eager to facilitate the energy transition from fossil- to renewable energy sources (RES), i.e. increasing the share of gross-final consumption of RES. However, this transition does not come without its challenges in both countries. Especially at distribution grid level the connection of increasing amounts of renewable electricity are causing problems for the operation of the distribution system, i.e. congestion. The SEREH project aims at investigating the technical, economic, and legal preconditions of a local energy system functioning across the national border between the Netherlands and Germany (municipalities of Emmen, NL, and Haren, DE). Such a local energy system can potentially increase flexibility for system operation and mitigate congestion problems. The overall goal is to match the supply and demand of RES locally and across the border and thereby improve the efficiency of RES supply and demand and reduce system costs. Moreover, the idea is that the cost savings should benefit the local region.

The exact design of such a local energy system entails many different options. Work package (WP) 2 of the SEREH-project developed some of those options and presented them in different scenarios.[2] Correspondingly, deliverable 4.I.1 presented legal settings and assessed whether and to which extent those scenarios can be realized under the current EU legal framework.[3] This deliverable further ascertains a selection of these settings (see here below section 1.2) in the context of the national legal frameworks of the Netherlands and Germany.

1.1 Objective and Scope of this Deliverable

This deliverable is based on the structure and the findings of the preceding deliverable of WP4 and the results of the other WPs. The objective of this deliverable is to assess the legal settings for SEREH with regard to the national legal frameworks of the Netherlands and Germany. The analyses of the different settings will reveal the relevant differences between the legal frameworks which further allow for highlighting the possibilities and impossibilities for the SEREH project under the current national legal frameworks. The following table presents the work of WP4

Table 1: Overview of deliverables

WP4	**Analysis of Current Legal Situation and Design of Future Legal Framework for Cross Border Local Energy Systems**
WP4.I	**The current legal situation applicable for cross-border local energy systems**
WP4.I.1	EU legal framework ✓ *(completed)*
➔ WP4.I.2	National legal frameworks *(present deliverable)*

[2] WP2 report, p.2.
[3] WP4 deliverable 4(1)a.

1.2 Summary of Legal Settings for SEREH

As presented in deliverable 4.I.1 several legal settings are assessed how SEREH can be realized under the current EU legal framework which were organised along the two broad categories “electricity settings” and “hydrogen settings”. In the course of the project the focus changed to studying the electricity settings only. This will therefore be the main focus of this deliverable. The following table briefly summarises the settings which are most relevant for this deliverable (see for a complete overview of the settings in deliverable 4.I.1, p. 13).

Table 2: SEREH electricity settings

Type Setting	Specified setting	Option	Connection to	Purpose for use
I Electricity Settings	**1. Connecting distribution systems across the border**	Cross-border connection between DE and NL distribution systems *(“cross-border distribution grid setting”)*	Distribution grids in DE and NL	Enabling cross-border trade on local level via the distribution systems
	2. Double RES generation connection to DE- or NL distribution grid	RES generation installation is located either in Germany or in the Netherlands and has two connections, one to the Dutch grid and one to the German grid. Only one of the connections can be used at the time, so there is never a potential link between the systems.	*Either* NL distribution grid *or* DE distribution grid	Cross-border electricity trade
	3. Direct electricity connection for exclusively specified customers	RES generation installation is located in either Germany or the Netherlands and has a direct connection to one specified customer in the respective other country (for example an industrial customer such as a greenhouse grower or also a hydrogen producer). There is no direct connection of the RES generation installation to the distribution grid and vice versa. *(“direct-connection setting”)*	Exclusively specified industrial customer or more industrial customers in NL or in DE	Supply to one or more industrial customer(s), including a hydrogen producers/ electrolyser
	4. Cross-border group of producers and consumers (Only CEC)	A group of producers and consumers operates a part of the existing distribution systems plus a cross-border-connection across the national border. The connection to transmission systems on each side of the border is limited (the part of the distribution grid functions to the largest possible extent as an “island”)	Various customers (industrial and households) across the border	Developing a local system facilitating cross-border trade between local producers and local consumers (which can be both, industrial- and household consumers)

2 ELECTRICITY SETTINGS

All electricity settings entail a cross-border link for transporting electricity, what distinguishes the settings is the purpose of use of the electricity transported (what or who is exactly is connected by the cable) across the border. The following list summarises the settings briefly:

- Cross-border distribution systems (section 2.1)
- RES installation connected to *either* the German *or* the Dutch distribution system (section 2.2)
- Direct cross-border connection to an exclusively specified customer (section 2.3)
- Cross-border group of producers and consumers (section 2.4)

Each setting entails, potentially, a different legal classification of the cross-border electricity link which would result in different applicable laws. These laws can differ between the Netherlands and Germany and are explained in the following sections 2.1-2.4.

2.1 Connecting Distribution Systems across the Border

This setting is the most straight-forward and rigorous solution to connect the German and the Dutch distribution system, "simply" by building a cable connecting two national distribution systems (a "cross-border distribution grid").

As explained in deliverable 4.I.1, the physical interconnection of electricity systems of the EU Member States is of vital importance for developing the internal electricity market. Therefore, a special legal regime is applicable to infrastructure connecting electricity systems, i.e. interconnectors, in order to ensure capacity allocation and interoperability. The electricity market Regulation (EMR) 2019/943/EU defines *"interconnectors"* as follows: *"[…] transmission line which crosses or spans a border between Member States and which connects the national transmission systems of the Member States"*.[4] As this definition is enshrined in a Regulation, it is directly applicable in the Member States, i.e. the Netherlands and Germany.[5] In EU law interconnectors are thus explicitly established at the transmission system level, which is beyond the scope of the SEREH project as the latter focusses on the distribution level. The next sections identify whether next to this definition of *"interconnectors"* in EU law there are options in national law to connect distribution system across the border.

[4] Art. 2(1) EMR 2019/943/EU.

[5] Art. 288 TFEU (*"A regulation shall have general application. It shall be binding in its entirety and directly applicable in all Member States."*).

2.1.1 Dutch Law Governing Cross-Border Grids

The definition on *"interconnectors"* included in the Dutch Electricity Act 1998 slightly differs from the EU definition as it refers generally to a cross-border *"grid"* (in Dutch *"landsgrensoverschrijdend net"*) as opposed to the EMR 2019/943/EU which explicitly establishes *"transmission line"* as the interconnecting element. In Dutch law, a *"cross-border grid"* is defined as *"a grid which extends at least the border of two countries and which connects the grids of those countries."* [6] This requires a further look at the definition of the term *"grid",* which reads as follows:

> *"one or more links for the transport of electricity and the related transformer, distribution, and substations and other tools, except in so far as such links and tools form part of a direct line or are within the installation of a producer or a customer"*.[7]

As both definitions do not specify any voltage limitations it follows from these definitions that a *"cross-border grid"* could also be at the low or medium voltage grid level, i.e. the distribution system level. In other words, the Dutch definition of *"interconnector"* (or cross-border grid) seems thus to apply a broader approach and one could argue that a *"cross-border grid"* could be implemented at distribution system level.

The interpretation of such a cross-border connection becomes even more complex as the Code on Terms in Electricity not only contains a definition of cross-border grid (as defined above) but also defines a *"foreign connection"* (*"buitenlandverbinding"*), i.e. a *"connection (> 500V) between the national transmission system and the grid of a foreign system operator"*. Based on this, one could conclude that a connection extending the national border can only connect the Dutch transmission system with a foreign system. Whether the foreign system needs to be a transmission system too is not specified any further but it could possibly be a foreign distribution system. Considering both definitions, it seems that the definition *"foreign connection"* in particular refers to the connection between two systems and thus can be seen as part of a cross-border grid.

Although the Dutch Electricity Act does not use the word *"interconnector"*, but *"cross-border grid"* in its definitions, it does refer to the concept of an *"interconnector operator"*. The latter is defined as *"the operator of a cross-border grid which is not part of the national transmission grid"* (*"landelijke hoogspanningsnet"*).[8] The national transmission grid entails *"the grid that is dedicated to the transmission of electricity on high voltage levels (110 kV or higher) and also cross-border grids functioning on the basis of alternating current (AC)"*.[9] The transmission grid is operated by an appointed transmission system operator (TSO), i.e. TenneT.[10]

[6] Art. 1(as) Elektriciteitswet 1998.
[7] Art. (1 i) Elektrciteitswet 1998.
[8] Art. 1(at) Elektriciteitswet 1998.
[9] Art. 10(1) Elektriciteitswet 1998.
[10] Art. 10(2) Elektriciteitswet 1998.

This specification leaves open two points. First, as the definition of the national transmission system specifically refers to high voltage levels, it is not clear whether this particular specification also applies to *"cross-border grids"* functioning on AC mentioned in the same definition. In other words, it is not clearly stipulated that *"cross-border grids"* functioning on the basis of AC, only involve high voltage levels or also could make use of medium or low voltage levels. In case of the latter, the person operating the medium or low-voltage cross-border grid would still have to be the appointed TSO. So, a first inference is that it is not specifically excluded that *"cross-border grids"* functioning on AC can also be located at the medium or low-voltage grid level. However, they would still need to be operated by the appointed TSO.

Secondly, as the definition clearly refers to *"cross border grids functioning on AC"*, cross-border grids functioning on the basis of DC are not covered by this definition. This does thus not exclude the option that *"cross-border grids"* functioning on DC could be established at distribution system level and could be operated by another party than the appointed TSO. Assuming that cross-border grids functioning on the basis of DC are established at distribution system level, it needs to be assessed who could be appointed as the operator of such a *"cross-border grid"*. Generally, the Electricity Act 1998 defines the operator of a *"cross-border grid"* as *"the operator of a cross-border grid which is not part of the national transmission grid"* (*"landelijke hoogspanningsnet"*)[11], i.e. someone else than the national appointed TSO. However, if this *"cross-border grid"* functioning on the basis of DC at distribution system level qualifies as a *"grid"*, a system operator needs to be appointed to operate the infrastructure. The definition of grid is mentioned in this section above and includes *"one or more links for the transport of electricity and the related transformer, distribution, and substations and other tools* [*"hulpmiddelen"*] […]*"*. As the *"cross-border grid"* functioning on the basis of DC would include at least two links (to the Netherlands and Germany) for the purpose of transporting electricity and it would probably also involve tools, at least a converter station for converting DC to AC, it seems clear that such a *"cross-border grid"* functioning on the basis of DC would qualify as a grid according to Dutch law. This would further require appointing a system operator to operate this grid. Logically, one would consider the local distribution system operator (DSO) operating the distribution grid in that area for this task. However, as the *"cross-border grid"* functioning on DC at distribution system level would extend the border, it is necessary to ascertain whether the Dutch DSO may operate the part of the grid which is located in Germany. Generally, the Code on Area Division ("*Gebiedsindelingscode elektriciteit*") establishes the respective areas of operation for system operators in the.[12] Article 5 of the Code defines the areas for the medium- and low-voltage grid of the respective DSOs by referring to Dutch provinces and municipalities, however, it is not excluded that DSOs function across national borders. This raises the question whether under German law a Dutch DSO is allowed to construct and operate such a grid.

[11] Art. 1(at) Elektriciteitswet 1998.
[12] Gebiedsindelingscode elektriciteit, BWBR0037943.

Based on this, a second inference is thus that, potentially, *"cross-border grids"* functioning on the basis of DC could be established at distribution system level. As it is likely that such infrastructure would qualify as a *"grid"*, a system operator would need to be appointed. Possibly, this could be the local DSO. It would depend on German law whether this DSO is entitled to construct and operate such cable on German territory.

Finally, it can be noted that even though the term *"cross-border grid"* seems to focus on the transmission system (in line with what is established in the definition of *"interconnectors"* in the EMR 2019/943/EU), it is not excluded that "something else" could be established to connect distribution grids. This would then not be an *"interconnector"*, but something that we do not know yet, i.e. *sui generis*.

2.1.1.1 Linking Two Distribution Systems

As we have defined a cross-border grid to consists of a connection of two distribution systems, we will have a brief look at the situation at national level. In other words, the possible connection of two distribution systems. Although some distribution systems were directly connected in the past, this is no longer the case. All distribution systems in the Netherlands are now connected directly to the grid of the TSO TenneT. The reason for this change has been technical in scope and improve technical grid management.

However, the Dutch Grid Code (*Netcode*) seems to enable such connections as section 5 governs the connection of distribution systems to other systems. This general phrasing seems to open up the possibility to connect two distribution systems. General conditions for such a connection can also be found in section 5. Hence, although not applied in practice anymore it seems that in theory it would still be possible to connect two distribution systems.

2.1.2 German Law Governing Cross-Border Grids

The current legislation governing cross-border electricity connections in Germany exclusively concern transmission lines for the transport of large amounts of electricity at the extra-high or high-voltage level.[13] The German Energy Industry Act (*"Energiewirtschaftsgesetz"*, EnWG) applies the definition of *"interconnector"* as established in the EMR 2019/943/EU and discussed in deliverable 4.I.1 and briefly hereabove under section 2.1. Since German legislation has opted to apply the EU law definition of interconnector, it does not foresee a situation for connecting electricity systems on distribution system level. However, this does not necessarily exclude the option of connecting electricity systems across the border via a distribution grid functioning on the basis of DC.

[13] Tobias Strobel. "Der Ausbau grenzüberschreitender Verbindungsleitungen im Elektrizitätsbereich – Eine insbesondere regulierungsrechtliche Betrachtung". Deutsches Verwaltungsblatt, vol. 131, no. 9, 2016, pp. 543-551.

As the idea is that a *"cross-border grid"* functioning on the basis of DC would connect existing electricity distribution grids based on AC in Germany and the Netherlands, it needs to be assessed whether and under which conditions the DC *"cross-border grid"* can be connected to the distribution grid. Although not yet clear which conditions such interconnecting cable has to comply with, some basic requirements may follow from the EnWG with regard to the connection of energy systems.

2.1.2.1 Linking Two Distribution Systems

The obligation of the DSO regarding connections to its grid is laid down in § 17 EnWG and also includes a connection requirement for individual lines (cables).

> § 17 (1) sentence 1 EnWG: *"Operators of energy supply networks shall connect* […] *electricity and gas supply networks and lines of the same or lower level, to their network under technical and economic conditions, ..."*.

The DSO may, however, refuse the connections subject to section § 17(2) EnWG:

> *"Operators of energy supply networks may refuse a connection to the grid pursuant […] insofar as they prove that it is not possible or not reasonable for them to grant the connection to the grid for operational or other economic or technical reasons, taking into account the purpose of section 1."*

This requires assessing whether the connection of a cross-border grid functioning on the basis of DC could be refused on the basis of operational or economic constraints. Generally, DSOs prefer to be technically decoupled from other networks in order to prevent negative technical repercussions on their own system operation. Although a physical connection between two different distribution networks is possible by installing a meter, this is usually only applied when there is a one-directional flow of electricity. Whether a regular change in the flow direction of electricity via a DC grid leads to a technical reason for refusal according to § 17 (2) EnWG, is beyond the scope of a legal assessment and thus requires the expertise of electrical engineering and energy system economics. If the DSO refuses to provide the connection of the DC grid to its AC distribution system, proceedings on the basis of potential abuse of its monopoly position could be brought before the regulatory authority in accordance with § 31 EnWG. However, if the DSO can justify the refusal (see above), the regulatory authority will reject the claim.

2.1.3 Assessment of a Cross-border (Distribution) Grid

According to EMR 2019/943/EU an interconnector means a transmission line that crosses or spans a border between Member States and connects the national transmission systems of those Member States. This concept applies directly in all Member States and thus also Germany and the Netherlands. Given the focus on transmission systems, we have tried to assess whether this definition excludes a cross-border distribution grid.

By contrast to the German legal framework, Dutch law has not made use of the definition used in EMR 2019/943/EU and thus seems to apply a broader approach to cross-border

infrastructure than EU law (and thus also German law) by defining interconnectors as *"cross-border grids"*. Nevertheless, only *"cross-border grids"* functioning on the basis of AC are part of the national transmission system and need to be operated by the national TSO. Arguably, *"cross-border grids"* functioning on the basis of DC are not specified by a voltage level and could thus also be applied at distribution system level. As German law does not include any reference to cross-border grids on distribution level, a twofold reasoning could apply. It could be argued that there is no room for such a cross-border grid or the opposite that if such a grid is not explicitly forbidden it might be allowed.

In case of the latter approach and given the definition in Dutch law, it needs to be assessed whether a cross-border distribution grid functioning on the basis of DC would be possible in Germany and vice versa. Some further guidance for answering this question may be found in the national legal regimes governing the connection of national distribution systems. Although such connections in theory are possible in the Netherlands and Germany, in both countries they are meeting technical constraints. Moreover, connecting a *"cross-border grid"* functioning on the basis of DC in the Netherlands could lead to a refusal of a connection to the German distribution grid on the basis of operational or economic constraints. In this context it is relevant to mention that in Germany the medium voltage grid covers a larger range, i.e. 10-30 kV, whereas the Dutch medium voltage grid covers a range between 10-23 kV. On low-voltage level both countries are synchronized at 0.4 kV. This would at least need to be considered when designing a *"cross-border grid"* from a technical perspective.

Furthermore, it is necessary to consider whether a Dutch DSO would be allowed to operate such a *"cross-border grid"*, according to the Dutch law, extending in the German territory, assuming that the connection point to the German distribution grid would be located on German territory. The EnWG does not seems to include restrictions on the option that foreign DSOs operate a grid in Germany, however, most probably they would need to be admitted by the regulatory authorities on State level (*"Landesregulierungsbehörde"*).[14]

2.1.4 Conclusion

In principle, and as already concluded in deliverable 4.I.1 in section 4.1.1, the term *"interconnector"* is exclusively established at transmission system level. As this is established in an EU Regulation, this is directly applicable in the national jurisdictions. Dutch law seems to offer the possibility that cross-border grids functioning on DC could also be established at distribution system level and German law does at least not categorically exclude this option. It is relevant to mention, that in both jurisdictions (DE and NL) it seems that it is legally not excluded that a distribution system is connected to another distribution system within the respective country.[15]

[14] Johann-Christian Pielow and Hans-Martin Koopmann, 'Energy law in the Netherlands' in Martha M Roggenkamp, Catherine Redgwell, Anita Rønne, and Iñigo del Guayo (eds.) Energy Law in Europe (OUP 3rd ed. 2016), para. 8.136.
[15] § 3(29c) EnWG and art. 5.1 Netcode Elektriciteit.

Nevertheless, as the above analysis of the relevant legislation shows the legal possibility of such an option appears rather unrealistic for several reasons. First, as EU Regulation 2019/943/EU specifically refers to interconnectors as cross-border transmission systems the margin of interpretation regarding cross-border distribution grids is very limited. Secondly, and related to the previous point, German law narrowly implements the definition of *"interconnector"* established by the EMR 2019/943/EU. Thirdly, even if one would want to establish a cross-border grid functioning on DC, this would raise question about the legal qualification of such an infrastructure. It was argued that such an infrastructure would probably qualify as a *"grid"* as defined by the Dutch Electricity Act. This in turn would require appointing an operator. However, as the operation of this infrastructure would extend the national border and thus the usual area of operation of the DSOs on both sides of the border it is uncertain whether the DSO can operate grids in another jurisdiction. Again, while it is not excluded that a DSO can operate beyond national borders, the mere existence of a legal possibility does not necessarily imply that this is a realistic option. Last but not least, we note from a technical perspective that direct connections between two distribution systems are no longer available or restricted in both Member States and, to the best of knowledge, there is no example of an implementation of a cross-border grid functioning on DC at the medium- or low-voltage level either.

This poses nevertheless the question whether the possibility of connecting distribution system should be applied in the cross-border context. Arguably, and in line with the idea of the internal energy market, national borders should not constitute an obstacle for the transport and supply of electricity. The fact that the transmission system level is inherent to the definition of interconnectors can be explained by the traditional "top-down" setting of the electricity sector, where large centralised production, mostly on the basis of fossil fuel energy sources, is connected to high-voltage transmission systems transporting large amounts of electricity via long distances closer to the locations of final consumption. However, with the technical sophistication of small-scale production installations running on RES, the traditional energy sector setting is changing and complemented by a "bottom-up" setting. In this setting, the cross-border element, i.e. the integration of markets, is largely absent which is why EU energy law is less prescriptive. As this SEREH project aims to showcase is that this setting is changing, also across borders.

2.2 RES Generation Connections to the German *or* the Dutch Distribution Grid

RES generation installation is connected via two connections, one to the German and one to the Dutch grid. Only one connection can be used at a time, so that there is no interconnection of the systems. The connection is "switched" for example on a 15-minute interval *("double- connection" or "switch")*.

This setting entails the connection of a generation installation which is located in one Member State (Germany or the Netherlands) and which has two connections, i.e. one connection to the distribution grid in the Netherlands and one connection to the distribution grid in Germany. However, only one of the two connections can be used at the time, meaning that the distribution grids are at no point in time connected via the installation. To assess the national legal framework of this option three main elements are important:

- First, the rules governing connections to the grid for RES and in particular the question whether a RES generation installation located in one Member State can be connected to the distribution grid in another Member State.
- Second, the rules on guarantees of origin (GoO) and in particular the question whether GoO can be awarded to RES generation located in another Member State.
- Third, the rules on support schemes for RES and in particular the question whether RES generation located in another Member State can benefit from the support scheme of the Member State where it is connected to the grid.

2.2.1 Rules on Grid Connections

Under this setting, the production installation has two connections: one to the Dutch distribution grid and one to the German distribution grid. Therefore, it is relevant to ascertain the rules on grid connections for production installations at the distribution system level. The following questions are relevant

- Is there an obligation to connect?
- Is the size of the connection determining?
- What is the role of the distribution system operator?
- Who pays for the connection?
- Is a connection across a national border possible?

2.2.1.1 Netherlands

The term *"connection"* is defined as one or more links between a grid and an immovable property or a link between the grid of one network operator and the grid of another network operator.[16] Generally, a connection is considered as being part of the grid.[17] The

[16] Art. 1(1 b) Electricity Act 1998.

Dutch Electricity Act distinguishes between the size of the connection, until 10 MVA and >10 MVA.

For connections requested until 10 MVA, system operators are obliged to provide every person, on a non-discriminatory basis, with a connection to the grid at the required voltage level and an estimate of the costs involved.[18] This type of connection is concerning small customers, for example households or SMEs and is therefore only to a limited extent relevant for this project. Connections until 10 MVA are provided at the nearest possible point to the grid.[19] In principle, all connections need to be established within a reasonable period of time, the time limit is set at a maximum of 18 weeks.[20] In cases for connections below 10 MVA, the costs for the connection entails three general components: costs constructing a physical connection from a customer's installation to the network, costs for the installation of facilities to maintain the security of the network, and costs for the maintenance of the connection.[21] The former two components are a one-time payment ("*eenmalige aansluitvergoeding*") and the maximum amount is established by the national regulatory authority (ACM) and published on the tariff sheets of the system operators ("*tarievenblad*"). The third component is a periodical cost ("*periodieke aansluitvergoeding*") which is charged annually for keeping of the connection. Again, the ACM establishes the maximum of this tariff which is also published on the tariff sheets of the system operator. In addition, if the connection is further than 25 meters away from the grid, an additional charge per meter is applicable. For this additional cost per meter also the ACM establishes the maximum on a yearly basis. The exact rules underlying the calculation for the tariffs are specified in the Code on Tariffication Electricity (*Tarievencode Elektriciteit*).[22]

The connections of RES generators which are more relevant for this project are connections >10 MVA. Those may also be established by other than the system operator on the basis of a tendering procedure.[23] Furthermore, the system operator enjoys greater flexibility concerning the choice of the exact point where the connection will be connected to the grid. In contrast to connections <10 MVA which have to be connected at the nearest point to the grid, connections >10 MVA are subject to an assessment of the available capacity and may be placed where sufficient capacity is available, even though this is not the nearest point.[24] Connections >10 MVA are excluded from the obligation to be provided within 18 weeks. However, this is different for connections of production installations of renewable energy. In a ruling of the *"College van Beroep voor het bedrijfsleven"* on the duration until the

[17] Martha M Roggenkamp, 'Energy law in the Netherlands' in (eds.) *Energy Law in Europe*.
[18] Art. 23 Electricity Act 1998, art. 28, Electricity act 1998 provides for a regulated connection tariff.
[19] Art. 27(2 d) Electricity Act 1998.
[20] Art. 23, para 3.
[21] Art. 28 Electricity Act 1998.
[22] Chapter 2, tariffs for connections, Tariff Code Electricity.
[23] Art. 16c Electricity Act 1998 and Martha M Roggenkamp, 'Netherlands' in Martha M Roggenkamp, Catherine Redgwell, Anita Rønne, and Iñigo del Guayo (eds.) *Energy Law in Europe*, (OUP 3rd ed. 2016) para. 10.169.
[24] Art. 27 (2 d) Electricity Act 1998.

provision of a connection for renewable energy production installations,[25] reference was made to the parliamentary papers underlying article 23. Here, it is clearly stated that:

> *"Article 23(3b), of the Electricity Act 1998 provides a special, additional regulation for the connection of renewable electricity installations […]. Even if the requested connection in that case concerns more than 10 MVA, this connection should be realized within 18 weeks."*[26]

Yet, the definition of *"reasonable timeframe"* might overall disappear with the revision of the Electricity Act, as the current draft proposal for a new Energy Act does not contain a reference to a specific timeframe for realizing the connection.[27]

Connecting production installations which are located in another Member State is not explicitly regulated but neither is it excluded. However, the Code on Area Division ("*Gebiedsindelingscode elektriciteit*") establishes the respective areas of operation for the TSOs and DSOs in the Netherlands who are responsible for providing the connection.[28] Article 5 of the Code defines the areas for the medium- and low-voltage grid of the respective DSOs by referring to Dutch provinces and municipalities. DSOs are thus not responsible for providing connections to installations which are outside their area of operation. While this does not necessarily prohibit DSOs to connect installations outside their area of operation, it is clear that it extends their immediate responsibility. This means, an installation which is located in Germany and which seeks connection to the Dutch grid, the respective Dutch DSO is not automatically responsible for providing this connection.

2.2.1.2 Germany

§ 17 of the EnWG provides of a connection to the general electricity supply network for consumption and generation facilities; § 17 (1) of the EnWG states:

> *"System operators shall connect [...] generation and storage facilities […] to their network under technical and economic conditions which are appropriate, non-discriminatory, transparent and no less favorable than those applied by the system operators in comparable cases for services within their company or vis-à-vis affiliated or associated companies."*

However, § 17 (2) paragraph 1 EnWG limits the absolute obligation of system operators to grant every connection request by requiring that the grid connection must be technically possible and economically reasonable for the system operator.[29] Although serious technical constraints are rare, they might for example occur due to capacity constraints in the grid. If the latter situation is the case and on the basis of a request by the party seeking a connection, the system operator is obliged to provide meaningful information on what

[25] CBb 22 september 2020, ECLI:NL:CBB:2020:649 en ECLI:NL:CBB:2020:650, r.o. 4.1.
[26] Parliamentary papers, (Kamerstukken I 2009-2010, 31904, nr. D, blz. 29)
[27] Artikel 3.36(3) proposal for Energy Act, version November 2021
[28] Gebiedsindelingscode elektriciteit, BWBR0037943.
[29] Johann-Christian Pielow and Hans-Martin Koopmann, 'Energy law in the Netherlands' in Martha M Roggenkamp, Catherine Redgwell, Anita Rønne, and Iñigo del Guayo (eds.) *Energy Law in Europe* (OUP 3rd ed. 2016), para. 8.139.

measures and associated costs would be required in detail to expand the network in order to provide the connection.[30]

For large connections (production installations >100 MW which are connected to the electricity grid with at least 110 kV)[31] these general requirements are further concretized in the Ordinance on grid connections (*"Kraftwerks-Netzanschlussverordnung", KraftNAV*).[32] It is specified that system operators need to provide information on their website concerning the information needed for assessing the connection request, standardized requirements for a connection contract, and a continuously updated overview of the grid and the utilization of the grid (*"Auslastung"*) concerning actual utilization of capacity and the expected utilization.[33] Relevant to mention is that § 6 of the Ordinance builds on § 17(2) and emphasizes that technical constraints may be a reason for refusing a connection and that such a technical constraint can be that a connection point is technically not suitable for realizing the connection. Another technical reason for refusing a connection is a lack of capacity. Where a connection is refused, the system operator has to propose an alternative point for the connection. The connection costs have to be borne by the person requesting the connection in so far as it concerns infrastructure connecting the production installation with the grid which is exclusively used by the person requesting the connection.[34]

Hence, the existing legal framework (EnWG and KraftNAV) does not exclude the situation where a production facility which is located in another Member State will be connected to a distribution system in Germany. However, it seems that this is only realistic when the production installation is located just across the border, i.e. the distance to the Dutch distribution grid would be shorter than the distance to the German distribution grid. Considering that the distances between the potential locations of productions installations and the German distribution grid in the SEREH project would be relatively far,[35] and the costs for the connection have to be borne by the person requesting the connection, realizing such a connection might imply significant upfront costs.

2.2.1.3 Assessment

Both legislations distinguish between the size of the connection. The Dutch framework distinguishes between connection sizes (<10MVA and >10MVA), which determines the flexibility of the system operator to choose the exact location where the connection is constructed, i.e. for the large connections. Extra costs are levied on the producer if the installation is located further away from the distribution grid (>25m). The German Ordinance on connections is applicable to production installations as of 100 MW. The costs

[30] § 17(2) EnWG.
[31] § 1(1) KraftNAV.
[32] 26 June 2007 (BGBl. I S. 1187), as amended.
[33] § 3(1) KraftNAV.
[34] § 8 KraftNAV.
[35] E-Mail Mrs. Pieper/Agrowea GmbH & Co. KG (16. September 2021) referring to distances of 21 km, 30 km und 9 km.

for the connection have to be borne by the person requesting the connection. Both legal frameworks do not exclude the possibility to connect production installations which are located in the respective other Member State; however, the economic viability (mainly due to distances and to establish two connections) needs to be assessed in detail for the case of the SEREH project.

2.2.2 Guarantees of Origen

As explained in deliverable 4.I(1), RESD 2018/2001/EU provides for so-called *"guarantees of origin"* (GoO), which are granted to the producer of renewable energy for each unit generated (1 MWh). Pursuant to the general rules established by the directive, the issuing of GoOs is organized at Member State level. As in the "switch setting" where a RES generating facility has connections in both Member States, it is necessary to ascertain the determining criteria or obtaining GoOs, for example the location of the production installation or the location of the distribution grid to which the electricity is fed into. GoOs are important as they provide proof that the generated electricity is indeed based on RES. Relevant questions for this section are:

- When and for what purpose are GoOs awarded?
- Can GoOs be awarded for production located in another MS?
- Who grants GoOs?

2.2.2.1 Netherlands

In the Netherlands, a subsidiary company of the TSO TenneT, namely CertiQ, is appointed as the authority awarding GoOs. CertiQ thus manages an electronic system where the origin of energy sources is registered and issues GoOs to the certificate account of the producer's designated trader on the basis of information received monthly from DSOs or metering companies on the actual electricity fed in the grid. So, simply, a producer of renewable energy can register the production installation which is located in the Netherlands with CertiQ. The responsible party to meter the electricity reports the amount of electricity which is fed in the grid, but also electricity which is not fed into the grid (*"niet-net levering"*, for example self-consumption or electricity fed into a *"direct line"*, as discussed in section 2.3 below) to CertiQ which issues the certificates for the producer. Producers can sell the GoOs on the market, for example to suppliers who use the GoOs as a proof for the renewable source of the energy. The market for GoOs is EU-wide. A European organization, *"Association of Issuing Bodies"* organizes the administration of the trade within the EU, for example by ensuring that the GoOs are comparable and by managing a trading hub.

In the Netherlands, the rules for GoOs are established in the Ordinance GoOs.[36] Based on the terminology established by this Ordinance, it seems rather clear that only producers which are established in the Netherlands can request an account for GoOs in the

[36] Art. 1 Ordinanace GoOs and certificates GoOs (*"Regeling garanties van oorsprong en certificaten van oorsprong"*).

Netherlands and also the term *"production installation"* clearly refers to a geographical requirement, that is that the installation needs to be located in the Netherlands.[37] This implies that for this setting a production installation located in Germany would not be eligible to obtain GoOs in the Netherlands, even if the electricity is fed-into the grid in the Netherlands. In the Netherlands, GoOs are not only relevant for proving the source of a produced energy unit, but also play a role in the revised subsidy scheme "*Subsidie Duurzame Energie ++*" (SDE++). This is explained further under section 2.2.3.1 below.

2.2.2.2 Germany

The *"Erneuerbare Energiengesetz"* 2021 (the "renewable energy law", EEG) regulates the requirements for applying for GoOs for the generation and feed-in of electricity generated on the basis of renewable energy.[38] The Federal Environmental Agency (*"Umweltbundesamt"*) is the responsible body for issuing the GoOs. GoOs can only be claimed if the renewable energy is not supported by the EEG 2021. This would otherwise be a so-called "double subsidy", which is excluded in Germany under the EEG 2021.[39] GoOs are thus only claimed for RES production which is not entitled (anymore) to the subsidy under the EEG. Furthermore, it is clear that the EEG 2021 geographically limits the GoO system to the territory of Germany by generally establishing that *"this Act, insofar as it relates to installations, shall apply if and to the extent that the electricity is generated within the territory of the Federal Republic of Germany."*[40] This clearly excludes installations (production installations) which are located in the Netherlands.

2.2.2.3 Assessment

Legislations in both countries establish that GoOs are exclusively awarded to renewable energy production which is located in the respective territory of the Member State issuing the GoOs. The location of the production installation in a specific jurisdiction is thus determining where the GoOs are requested (for production located in the Netherlands at CertiQ and for production located in Germany at the Federal Environmental Agency). However, at least in the Netherlands it is also important that the electricity is fed in the Dutch electricity grid, as the responsible metering party (for example the DSO) needs to report the actual amount fed in the grid to CertiQ who then issues the respective amount of GoOs to the producer's account. Assuming that the production installation is located in the Netherlands, but connected to the German grid, it would be difficult to receive GoOs for the produced electricity. The German agency would not issue GoOs because the production installation is located in Germany, but also CertiQ could not issue GoOs as the responsible metering party would need to communicate the amount of electricity fed in the grid to

[37] Art. 1 Ordinanace GoOs and certificates GoOs (*"Regeling garanties van oorsprong en certificaten van oorsprong"*).
[38] § 79 EEG 2021.
[39] § 80(2) EEG 2021.
[40] § 5(1) EEG 2021.

CertiQ. It might be an option that the German DSO (or any other responsible metering party) is reporting the amount of electricity fed in the grid to CertiQ, which would need to be in accordance with the Dutch Code on Metering (*"Meetcode Elektriciteit"*)This problem seems to be an issue for the sketched situation where a production installation is located in the Netherlands, but connected to the German grid, as in Germany GoOs are anyway not issued for production installations which already benefits from the general subsidy scheme.

2.2.3 RES Energy Subsidy Schemes

RESD 2018/2001/EU allows Member States to establish support schemes which lower the costs of energy production based on RES so that it equals the price of 'grey' electricity. Support schemes can include various financial mechanisms and vary largely among Member States. For this setting the following questions are relevant:

- What are the general rules of the support schemes for RES?
- Can RES generation which is located in another Member State benefit from the support scheme of the Member States where it is connected to the grid?

2.2.3.1 Netherlands

The Dutch support mechanism for renewable energy was established by a Ministerial Decree of 2007 governing the promotion of renewable energy production and is called "*subsidie voor duurzame energie*" (SDE).[41] The SDE lays down a framework for awarding subsidies for renewable energy. Annually, a Ministerial Regulation provides further details of the categories of production facilities that may be eligible for support. In 2011 the SDE regime was slightly modified and renamed SDE+. In 2020 this regime was adjusted and renamed again and it is now called SDE++. The current regime is broader and not only covers energy production on the basis of RES, but also includes other CO_2 reducing technologies, such as Carbon Capture and Storage. The subsidy depends on the technology deployed, but essentially covers the difference between the costs and the price. For each technology category, a so called "base amount" is established in order to determine the respective amount. This is at the same time the maximum amount for which support can be requested. The revenues generated from, for example, electricity production is determined by a *"correction amount"*. The SDE++ remunerates the difference between the "base amount" (costs) and the "correction amount" (potential revenues). The *"Netherlands Environmental Assessment Agency"* (*"Planbureau voor de Leefomgeving"*, PBL), DNV-GL, and TNO are assigned by the Ministry of Economic Affairs and Climate to calculate the *"base amounts"* per technology category, which are then adopted by the Minister and valid for the entire support period. The *"correction amount"* is determined TNO in the autumn for the coming calendar year and is based on the energy prices of the past calendar year. Both amounts are published by the *"Netherlands Enterprise Agency"* (*"Rijksdienst voor Ondernemend Nederland"*, RVO). What has been newly established with the revised SDE++ scheme is that the price for GoOs is part of the *"correction amount"* for onshore wind and

[41] Besluit stimulering duurzame energieproductie of 16 October 2007, *Stb* 410.

solar energy.[42] So, higher GoO prices will lower the subsidy. Overall, the subsidy has a great influence on the financial feasibility of renewable energy production or other CO_2 reducing activities as it is awarded for a period of 12 or 15 years.

In order to receive remuneration under the SDE++ it is necessary that the producer can indicate the amount of energy produced on the basis of RES proven by GoOs.[43] Relating to the inference of the preceding section on GoOs, this might be complicated for the case that a production installation which is located in the Netherlands, but connected to the German grid and not metered in the Netherlands. More fundamentally, it is required that the production installation is connected to a grid, and even though it is not explicitly stated that this is the Dutch grid, a conversation with RVO confirmed that the production installation has to be connected to the Dutch grid.[44]

The Decree includes an article on *"support for projects in other Member States"* which states that support is in principle available for projects located in another Member State if a *"cooperation agreement"* (*"samenwerkings overeenkomst"*) is concluded as meant by the RESD 2018/2001/EU. The option of *"cooperation mechanisms"* is extensively presented in deliverable I.1 on the EU legal framework in section 4.2.2 and with a special focus on *"joint projects"* in sections 4.2.2.1. The main conclusion was that *"joint projects"* generally provide leeway for cross-border projects. However, the scope seems narrower than the objectives of SEREH, as the aim of the Directive is to increase the share of RES, while the goal of SEREH is to improve efficient system use and keep benefits in the local region.

2.2.3.2 Germany

Germany has long-standing experience with a support scheme for energy production on the basis of renewable sources, named the *"Erneuerbare Energiengesetz"* (the "renewable energy law", EEG) which launched in 2000 and granted producers a guaranteed remuneration for 20 years. The scheme was amended several times during the years, with the latest amendment entering into force in 2021, resulting in the EEG 2021.

In addition to financial support, the EEG provides for priority connections for renewable energy installations. § 8 EEG 2021 establishes the entitlement to priority grid connection and priority power purchase for renewable energy plants. § 8 EEG 2021 thus gives renewable energy producers an explicit entitlement to grid connection. However, it is clear that the scheme is in principle only applicable to installations located in Germany, regardless of whether the installation is connected to the German grid. Yet, the same article limiting the geographical scope of the EEG 2021 also refers to the option of granting the subsidy to producers located in another Member State:

> *"2) Insofar as payments for electricity from renewable energy sources are determined by means of invitations to tender, bids for installations in the territory of another*

[42] Art. 14(1 b) Besluit stimulering duurzame energieproductie en klimaattransitie.
[43] Art. 15(1 a) Besluit stimulering duurzame energieproductie en klimaattransitie.
[44] Conversation with RVO November 2021.

Member State or several other Member States of the European Union shall also be eligible for subsidy up to a maximum of 5 percent of the total annual installed capacity of such installations. [...]. For the purpose of sentence 1, invitations to tender may be issued
1. jointly with one or more other Member States of the European Union, or
2. opened to installations in the territory of another Member State or several other Member States of the European Union."

The article then further refers to the condition of establishing cooperation mechanisms as established under the RESD 2018/2001/EU (see preceding section 2.2.3.1).

2.2.3.3 Assessment

The Netherlands and Germany both apply a support scheme to support the production of energy based of renewable sources. Both subsidy schemes are in principle exclusively applicable to production installations which are located in the respective territory of the country and when the production installation is connected to the grid in the respective country. Both countries provide for the option of extending the support scheme to production located in another Member State but only if a *"cooperation mechanism"* is established in accordance with RESD 2018/2001/EU. Such an agreement for a joint cooperation mechanism between the Netherlands and Germany is currently not in place and also not planned according to the National Energy and Climate Plans covering the period of 2021-2030.[45]

Unfortunately, and as explained in deliverable I.1 section 4.2.2 on *"cooperation mechanisms"*, there are very few experiences with the implementation of cooperation mechanisms in the EU and Member States seem rather reluctant to explore this option. The few existing examples are assessed by the European Environmental Agency.[46] One of the examples also involves Germany which established a joint solar auction with Denmark in 2016.[47] Another prominent example is the common market for electricity certificates which is established between Norway and Sweden.[48] The key lessons that are mentioned by the European Environmental Agency (which have also been outlined in greater detail in deliverable I.1) is that political trust and willingness to cooperate on this matter are key. However, considering that there might be more initiatives which are exploring potential cross-border cooperation between the Netherlands and Germany, it might be worthwhile to develop concrete ideas on the development of a cooperation mechanism for renewable energy projects between the Netherlands and Germany, for example via linking support

[45] See European Commission, at < https://ec.europa.eu/energy/topics/energy-strategy/national-energy-climate-plans_en>.
[46] See European Environmental Agency, at < https://www.eea.europa.eu/themes/energy/renewable-energy/cross-border-cooperation-on-renewable-energy>.
[47] Dijana Dmitruk, 'Danish – German Cooperation on the First Cross-border Tenders for Renewable Energy A Blueprint for Future Cross-Border RES Projects?' in Martha M Roggenkamp and Catherine Banet (eds) European Energy Law Report XII (Intersentia, 2018).
[48] Finn Arnsen et al. "Energy law in Norway" in in Martha M Roggenkamp, Catherine Redgwell, Anita Rønne, and Iñigo del Guayo (eds.) *Energy Law in Europe* (OUP 3rd ed. 2016), para. 11.270.

schemes. Considering that at least Germany has experience on this, there should be some experience and willingness of the government to further build on this.

2.2.4 Conclusion

Overall, this setting on RES generation installations which are connected via a connection either to the Dutch or the German distribution grid seems to be an innovate option. However, many legal questions remain. Providing a connection to an installation located in the respective other Member State is not specifically mentioned, but also not excluded in both jurisdictions and does thus not seem to constitute an immediate obstacle. However, considering the technical and economic viability of providing such a connection needs to be assessed on the basis of more information, for example on the exact distances, the exact capacity connected, the source of RES etc. However, additional costs will be involved anyway, as it involves two connections. Another obstacle might be the access to support schemes, as both legislations are rather clear about the fact that producers are only eligible if they are located in the territory of the respective Member State and the production installation is connected to the grid in the respective country. Both legislations allow for the opening of support schemes to foreign producers under the condition that a *"cooperation mechanisms"* is in place as established by the RESD 2018/2001/EU. A final very relevant point to mention is that it would need to be established how the act of "switching" is organized, meaning who or what determines which connection is in use. For this, there is no regulation in place, as this is essentially the innovative element of this scenario. Yet, it would need to be clearly determined when, how, and by whom the "switching" is undertaken. If a "cooperation mechanisms is set up to test for such an installation with a double connection, this could be further established in an agreement.

2.3 Direct Electricity Line for Exclusively Specified Customers

RES generation installation located in one Member State (either Germany or the Netherlands) is directly connected to an exclusively specified customer in the other Member State (either Germany or the Netherlands).

Essentially, this setting is a narrower version of the preceding setting, as it includes a production installation which is connected across the border to an exclusively specified customer. So, contrary to the preceding setting where the production installation had two connections, one to the grid in each country, here, the production installation has only one connection to a customer located in the other Member State. In that sense, several points of the preceding setting are also relevant here. However, this setting can be captured by a specific legal concept, namely that of the *"direct line"*.

As presented in deliverable 4.I.1 this setting could be legally designed so as to constitute a *"direct line"* as defined in the EMD 2019/944/EU as

> *"either an electricity line linking an isolated generation site with an isolated customer or an electricity line linking a producer and an electricity supply undertaking to supply directly their own premises, subsidiaries and customers"*.[49]

As direct lines are not considered to be part of the grid, the general legal framework establishing rules on the access and the use of the system are not applicable. However, as discussed in deliverable 4.I.1, the classification as a *"direct line"* usually occurs in rather exceptional circumstances, and even then, the scope of exemptions is limited.[50] As a directive, the EMD 2019/944/EU can be transposed into national law in different ways. The following sections explain national rules on direct electricity lines in the Netherlands and in Germany, and present opportunities and limitations for SEREH. Relevant questions to consider are:

- Who can be connected to a *"direct line"*?
- Can the persons connected to the *"direct line"* have additional connection to the grid?
- Are producers of RES connected to a "direct line" eligible to receive support from RES support schemes?
- Can a "direct line" be constructed across a national border?

2.3.1 Dutch Law Governing "Direct lines"

Based on the definition of *"grid"* (grid) in the Dutch Electricity Act 1998 it becomes clear that *"direct lines"* are not part of the grid, the law states that

> *"one or more connections for the transport of electricity and their associated transformer, control, distribution and substation and other equipment, except in so*

[49] Art. 2(41) EMD 2019/944/EU
[50] See deliverable 4.I.1, pp 42-43

far as such connections and equipment form part of a direct line or are within the installation of a generator or a consumer;"[51]

From this it becomes clear that all rules governing networks and network operation are not applicable to *"direct lines"* under the Dutch Electricity Act 1998. Additionally, the fact that direct lines are not defined as grid or part of it also implies that no customers ("*afnemers"*) are connected to *"direct lines"*, as a customer is defined as anyone who has a connection to a grid.[52] The definition of the direct line does thus not refer to connected customers, but to *"verbruikers"*, which can be translated as *"consumer"*.[53] This is in so far relevant as the (protective) provisions of the Electricity Act 1998 that apply to customers do not apply to consumers connected to a *"direct line"*.[54]

Generally, the concept of a *"direct line"* entails the situation in which a direct cable connects a production installation of a producer with one or more consumers of electricity, not being the producer or mainly household customers. A production installation may consist of several production units. A production unit is the smallest possible technical unit with which electricity can be generated independently. Production units that are in a geographically, technically, functional or organisational relationship can form a one production facility (for example a wind park which is owned by one legal person. Here, the single wind turbines are the production units, and the wind park is the production installation).[55] A producer is defined as a *"organisational entity that generates electricity"*.[56] The *"direct line"* must also be intended to meet the electricity needs of the electricity demand of the consumers. This may be shown, for example, by an agreement between a producer and the consumer, and by the invoices that the consumer primarily receives electricity from the producer.[57]

The definition of *"direct lines"* entails two situations, i.e. a cable for the transport of electricity that either

- is not connected to the grid or another connection for the transport of electricity, and that serves to connect an isolated producer with an isolated consumer (not being the producer),

or

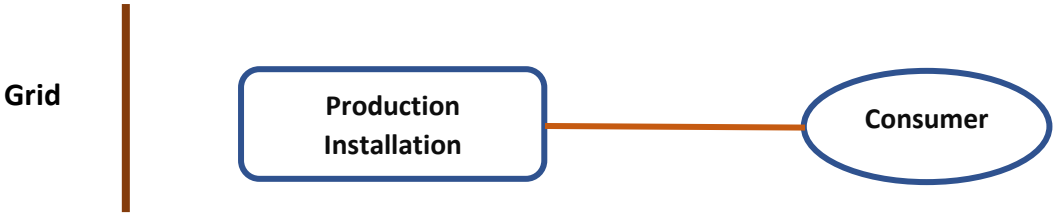
- is connected through the installation of *one* party to the grid or another connection used for the transport of electricity, and that *directly* connects a producer's production installation, via a supplier, with one or more consumers of electricity, not being the producer or principally household consumers.[58]

[51] Art. 1(i) Elektriciteitswet 1998.
[52] Art. 1(c) Elektriciteitswet 1998.
[53] Art. 1 (ar) Elektriciteitswet 1998.
[54] Julia Eijkens, Peter van Asperen and Vincent Lindijer, 'Net Anders – II Een diversiteit aan private netten en directe lijnen' (2012) Nr. 2 Nederlands Tijdschrift voor Energierecht 58-64, 63.
[55] Kamerstukken II 2007/08, 31 326, nr. 3.
[56] Art. 1(g) Elektriciteitswet 1998.
[57] Julia Eijkens, Peter van Asperen and Vincent Lindijer, 'Net Anders – II Een diversiteit aan private netten en directe lijnen' (2012) Nr. 2 Nederlands Tijdschrift voor Energierecht 58-64, 63; Ontheffingsbesluit ACM van 17 mei 2018 met kenmerk ACM/UIT/492785 (AEB).
[58] Art. 1 lid 1 sub ar Elektriciteitswet 1998.

The first situation is very similar to the definition established in the EMD 2019/944/EU and describes a situation of full isolation, i.e. the production installation is not connected to the public grid and the consumer is also not connected to the public grid. [59]

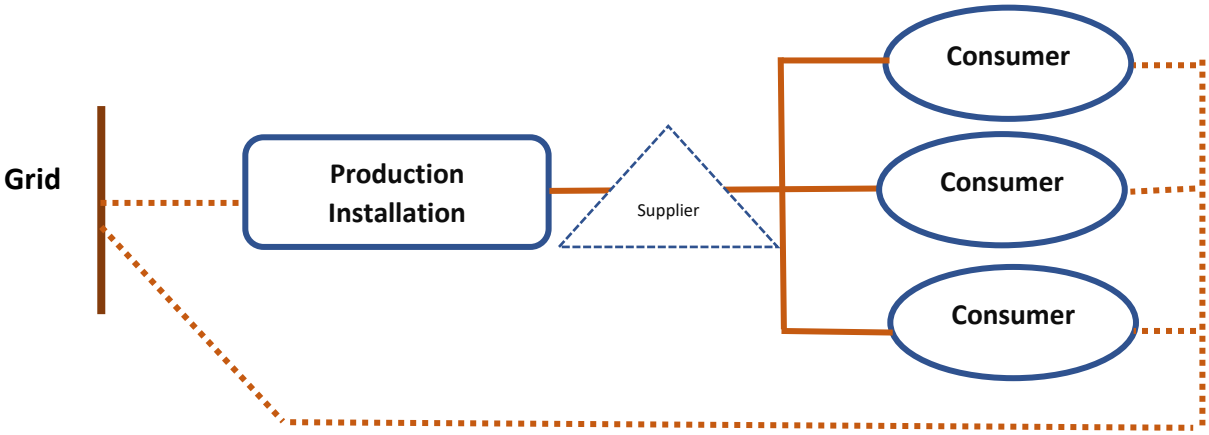
[59] This definition of isolated is most straight-forward. However, the isolation criterion is not defined further in the EMD 2019/944/EU. Some authors have argued that it is confusing and should be removed, as connection to the grid for e.g. back-up purposes should not automatically make a direct line part of the grid. See Paul Ouwehand, 'The Qualification of Direct Lines in the Third Electricity Directive and the Implementation of Direct Lines in the Netherlands - An Analysis of the Recent Developments' (2010) 5 IELR 140, 142.

Figure 1: Direct line option a under Dutch law



The second situation allows that one of the connected persons, either the production-installation or the consumer, can have a connection to the public grid. The supply may be arranged via a supplier.

Figure 2: Direct line option b under Dutch law



The dotted line indicates possible connections. Note that only one of the dotted connections is allowed for the classification as direct line.

As *"direct lines"* do not fall under the definition of a *"net"*, regulated network tariffs are not applicable. However, the absence of regulated tariffs does not imply that the electricity supplied via *"direct lines"* is not subject to energy taxation. The Environmental Tax Act states that *"tax is due for electricity supplied via a connection,* […] *electricity supplied in other ways than via a connection,* […] *and the use of electricity which is received in other ways than supply"*.[60]

Another important question is (i) whether renewable electricity production installations connected to a *"direct line"* are eligible to receive GoOs and to benefit from the support scheme for renewable energy production, and, (ii) whether support can be granted if a

[60] Art 50(1) (3a and d) Wet belastingen op milieugrondslag.

"direct line" crosses the national border. On (i), it is clear that GoOs can be requested for production which is not fed in the grid (*"niet-net levering"*), serving as a proof of source for the final consumer connected to the same *"direct line"*.[61] Also, production installations which are not connected to the grid and where the electricity is thus not fed-into the grid is eligible to the support mechanisms SDE++, based on the amount of GoOs awarded by CertiQ. For this it is a precondition that the electricity can be metered sufficiently.[62] This leads then also to the answer to (ii) that there seems to be no obstacle that GoOs can be granted and support from the SDE++ can be claimed for the situation that the production installation is located in the Netherlands and the *"direct line"* extends the border to Germany.

Finally, it is relevant to understand the administrative procedure for constructing a *"direct line"* which is specified in the Electricity Act. The producer intending to construct a *"direct line"* has to notify the Dutch regulatory authority (i.e. *Autoriteit Consument en Markt*, ACM).[63] The producer has to provide the following information: name and address, general description of the direct line, and the location of the direct line. The producer is also obliged to notify any significant changes, such as a change in the number of consumers or a change in ownership.[64] This notification is primarily required so that the ACM can register the direct line. This registry is publicly online available via the website of the ACM.[65] In general, the Dutch legal framework, including the definition, the administrative procedure, and the registry of *"direct lines"* in the Netherlands, is very transparent. This might provide an additional benefit as there are plenty of examples of *"direct lines"* which have been constructed and are in use. Not only does this illustrate possible implementations, but it also indicates that this is a concept which is actively used, thus that there is need for such a special category of infrastructure.

2.3.2 German Law Governing "Direct lines"

In German law, the EnWG defines direct lines as follows:

- *"an electricity line linking a single generation site with a single customer",*

or

- *"an electricity line linking a producer and an electricity supply undertaking to supply directly their own premises, subsidiaries and customers"*.[66]

The wording of this definition differs from the definition established by EU law. This applies, to the term *"isolation",* which is used in the definition of a *"direct line"* established by the

[61] See RVO at < https://www.rvo.nl/subsidie-en-financieringswijzer/sde/aanvragen/veelgestelde-vragen/beheerfase>
[62] See RVO at < https://www.rvo.nl/subsidie-en-financieringswijzer/sde/aanvragen/veelgestelde-vragen/beheerfase>
[63] Art. 9(h) Elektriciteitswet 1998.
[64] Art. 9(h) Elektriciteitswet 1998.
[65] < https://www.acm.nl/nl/onderwerpen/energie/netbeheerders/melding-directe-lijn>
[66] § 3 (12) EnWG.

EMD 2019/944/EU and which is translated as *"single"* (*"einzeln"*) in German law. Also, the German text of the EU directive refers to *"einzeln"* instead of *"isolated"*, it is thus not matter of transposition, but of translation. This difference is important, because the English expression *"isolated"* seems to imply that the generation site and the customer *shall not be connected to the grid* (i.e. being isolated), while the German translation with the term *"einzeln"* seems to focus on the *number of connected users*, i.e. that should be only *one*. Following the German wording, it seems permissible that the production facility and/or the customer has a connection to the electricity distribution network and that the *"direct line"* function as an additional connection. This would mean that a situation where both the producer and the consumer are fully isolated (as sketched above in figure 1) is not excluded, it is neither the only possible option according to the German understanding of a *"direct line"*, which seems to allow for additional connections to the grid (as sketched figure 2). Generally, German law and the NRA provide little further guidance on *"direct lines"* as it neither defines their criteria further, nor explicitly explains how a direct line should be qualified under German law. Finally, there are no specifications of an administrative procedure nor a publicly available registry of permitted *"direct lines"* in Germany, which makes it difficult to ascertain how the term *"einzeln"* is interpreted and actually implemented. Important to mention is that renewable energy that is produced by an installation which is connected to a *"direct line"* is not eligible to benefit from the support scheme.

Although not explicitly mentioned, there seems no territorial restriction on the construction of *"direct lines"*, nor any requirement that the direct line has to be constructed within a confined geographical area.[67] German law does not request a special procedure for the approval of the construction of a direct line. It is unclear whether this means that one can "simply" construct a cable, however, the information provided by the regulatory authorities (on State and Federal level) is very scarce. In any case, it would be necessary to comply with the general standards of security energy supply installations according to § 49 EnWG.

2.3.3 Assessment

The Dutch and the German definition of *"direct lines"* show some differences. For example, the Dutch definition implies that a customer connected to a *"direct line"* is in fact no customer anymore, but a "consumer" (*"verbruiker"*) which implies that the respective protection regime for customers is not applicable. This is not the case in Germany, where the term *"Kunde"* is applied, which is the general term used for customers in the EnWG. Another difference is that in the Netherlands the connected producer is eligible to receive GoOs and support for the production of RES while this is not the case in Germany. Also concerning the question whether the connected producer or consumer is allowed to have additional connections to the grid (next to the connection to the direct line) the legislations

[67] The only mention of territory related to direct lines is contained in art 7(1) EMD, which requires Member States to take necessary measures to enable producers on their territory to supply via direct line (art 7(1)(a)), and to enable customers within their territory to be supplied via direct line (art 7(1)(b)). It is not stated that producer and customer must both be located within a Member States' territory.

in both countries show differences. The Dutch legal framework appears to be stricter, although this might also be due to translation of the term *"isolated"* to German into *"einzeln"*. Both legislations do not seem to exclude the option to construct *"direct lines"* across the national border as there is no territorial restriction of the *"direct line"* itself. Overall, the Dutch approach to *"direct lines"* seems to be much more transparent than the German system where administrative procedures and registries are not publicly available.

2.3.4 Conclusion

The option to construct a *"direct line"* which crosses the border between the Netherlands and Germany seems a straight-forward and feasible option from a legal perspective. Some uncertainty remains concerning whether and who of the connected parties can have an additional connection to the public grid system. For the case of SEREH it seems more favourable to consider a situation where the producer is located in the Netherlands and the consumer in Germany, for the following two reasons: First, the producer would be eligible to receive remuneration from the support mechanism in the Netherlands. Second, the consumer would still be subject to the consumer protection framework in Germany. The other way around, both potential advantages would not be applicable.

2.4 Cross-border Group of Producers and Consumers (Energy Communities)

A group of producers and consumers operates a part of the existing distribution system plus a cross-border-connection, which does not qualify as an interconnector, across the national border. The connection to transmission systems on each side of the border is limited (the part of the distribution grid functions to the largest possible extent as an "island").

The EU legal options for this setting have been discussed in deliverable 4.I.1.[68] The most promising option for SEREH, although also the most uncertain, is the concept of *"citizen energy communities"* (CEC). The reason why this concept appears most promising is, briefly expressed, that CEC can consist of public and private entities, can engage in a variety of activities in the energy sector (for example, production, storage, aggregation, and potentially system operation) as long as it provides benefits to the local area where it operates.[69] Therefore, this section focuses on this option and identifies how CECs are implemented in the national legal frameworks. With regard to the goals of SEREH, the focus is on the following four aspects of CEC as defined under EU law:

- Governance and members of CEC (as explained in section 4.4.4.1.1 of deliverable 4.I.1)
- the option for CEC to operate networks (as explained in table 7 of deliverable 4.I.1)
- the option that CEC acts as supplier
- the option that CEC is open to cross-border participation (as explained in section 4.4.4.1.5 of deliverable 4.I.1)

2.4.1 Dutch Law Governing "Citizen Energy Communities"

The Netherlands is one of the EU countries with the highest number of what is often referred to as *"local energy initiatives"*,[70] counting more than 600 initiatives in 2020 and in total 97.000 members.[71] Two legal arrangements have been decisive for the increase in numbers in the past years,: the so-called *"postal-code area arrangement"* ("*postcoderoos regeling*" or also "*verlaagd tarief collectieve opwek*") and the *"experimental decree for sustainable generation"* ("*experimenten voor duurzame opwek*"). While the *"postal code area arrangement"* provided for the possibility of joint production via a legal entity (either a cooperative or an owners' association) and reduced energy tax for individual members of the joint organization, the *"experimental decree"* allowed for joint production as well as

[68] See section 4.4 deliverable 4.I.1.
[69] See for a more detailed description and analysis of CEC section 4.4.4.1 in deliverable 4.I.1.
[70] EU Commission Joint Research Centre, Aura Caramizaru and Andreas Uihlein, Energy Communities: An Overview of Energy and Social Innovation (Publications Office of the European Union 2020), 5.
[71] Hier Opgewekt, 'Lokale Energie Monitor 2020', February 2021, 5.

supply, and (partly) system operation. The aim of the latter was to ascertain whether small-scale alternative ways of organizing the production, distribution, and supply of electricity would lead to efficiency improvements in grid operations. In 2021 the *"postal code area arrangement"* has been amended and is now called *"subsidy for cooperative energy production"* (*"subsidieregeling coöperatieve energieopwekking"*).[72] Adversely, the *"experimental decree"* has not been extended by the government following a negative advice of the Council of State in December 2020 and pending the implementation of Directive 2019/944/EU in Dutch law.[73]

The Dutch legal framework governing the energy sector is currently under major review, amongst others, due the need to transpose Directive 2019/944/EU, including the provisions on CEC. In addition, the aim is to integrate the Electricity Act and Gas Act into one overarching Energy Act. As the new Energy Act has not yet been adopted, our analysis is based on the proposal for the new Energy Act (latest version November 2021).[74] The proposal for the new Energy Act only includes one definition of energy communities (in Dutch *"energiegemeenschap"*), which aims at incorporating both: CEC and renewable energy communities (REC) (see section 4.4.4.2 of deliverable 4.I.1).[75] The definition does not explicitly define the potential activities that energy communities may carry out. This is in line with the general approach of the proposal for the new Energy Act to focus on market activities rather than individual actors. The reason for this is that, in principle, the assumption is that it is irrelevant *who* exercises a specific activity, i.e. *"if a final customer buys electricity from a traditional supply company, an energy community, or from his/her neighbour who has a surplus of electricity generated on the basis of solar energy, in all cases electricity is supplied, so the requirements for supply are applicable"*.[76]

2.4.1.1 Legal Entity: Governance and Members

In line with the governance requirement established in the EMD 2019/944/EU, the proposal for the new Energy Act does not prescribe a specific legal form for CECs, however, energy communities have to be a dedicated legal entity. It is stated that the participation in an energy community needs to be open and voluntary, the members and shareholders retain

[72] Ministerial Regulation governing the grant of subsidies in order to promote local and joint renewable energy production of 27 February 2021, nr. WJZ/20120093. See Staatscourant 2021, 11080.

[73] See letter from the Minister of Economic Affairs and Climate to the Upper House of Parliament of 10 December 2020 as published in Eerste Kamer, 34627, nr. F.

[74] The first version of the draft Energy Bill was published in December 2020 and can be found at <https://www.internetconsultatie.nl/energiewet> . See also for an analysis of the provisions on energy communities in the Dutch draft Energy Bill Lea Diestelmeier, 'Energiegemeenschappen'- een decentrale oplossing voor de energietransitie?' Nederlands Tijdschrift voor Energierecht 3/2021, 106-115; and Lea Diestelmeier and Job Swens, 'Energy Communities in the Netherlands: Learning from Local Energy Initiatives' in Martha M. Roggenkamp and Catherine Banet European Energy Law Report (Intersentia, November 2021). A revised version of the Bill was published mid November 2021. and can be retrieved at <https://www.rijksoverheid.nl/ministeries/ministerie-van-economische-zaken-en-klimaat/documenten/publicaties/2021/11/26/wetsvoorstel-energiewet-uht> .

[75] Art. 1.1 proposal for the new Energy Act, version November 2021.

[76] Para. 1.6 General Explanatory Memorandum proposal for the new Energy Act, version November 2021

the right to leave the energy community, and effective control lies with the members or shareholders, which can be natural persons, small enterprises or local authorities.[77] Energy communities developing a renewable energy project may decide to also include medium-sized enterprises. This is in line with the EU provisions, as RESD 2018/2001/EU allows RECs to include SMEs, while in the provisions for CEC only small enterprises are mentioned as potential participants.[78]

2.4.1.2 Network Operation

The possibility of the EMD 2019/944/EU that CECs may operate a distribution system[79] is not included in the proposal for the new Energy Act. It is also not further elaborated how DSOs will need to *"cooperate"* with energy communities to *"facilitate energy transfers within CECs"*.[80] This is curious, considering that the above mentioned *"Experimental Decree"* specifically allowed for innovative network operation for the purpose of integrating RES and efficiency improvements.[81] However, up until now only a very small number of projects has actually been launched under the *"experimental decree"* (five), consequently, findings are very limited.[82] The advice of the Council of State with regard to the termination of the legal measure allowing for the experimentation mentions that the implementation of the EMD 2019/944/EU is likely to make it redundant to allow for further explicit experiments.[83] However, considering the limited information that can be drawn from the projects, it might be necessary to wait until more experiences are gained by the projects which have already been granted an exemption under the Experimental Decree. Conclusions for further amendments in the law could then be better substantiated. Until then, it should not be categorically excluded that CECs may (partly) operate distribution systems. Thus, while it is probably not necessary to further extend the Experimentation Decree in this form, a follow-up evaluation of results should be carried out in a few years especially concerning the task of network operation.

[77] Art. 2.5 (1 a-c) proposal for the new Energy Act, version November 2021.
[78] Art. 2(16 b) RESD 2018/2001/EU and art. 2(11 a) EMD 2019/944/EU
[79] Art. 16(4) EMD 2019/944/EU.
[80] Art. 16(1 d) EMD 2019/944/EU.
[81] See for more information: Imke Lammers and Lea Diestelmeier, 'Experimenting with Law and Governance for Decentralised Electricity Systems: Adjusting Regulation to Reality?' 2017 9(2) Sustainability [212]; Hans Koenders and Simone Pipping, 'Het Besluit experimenten decentrale duurzame elektriciteitsopwekking doorgelicht' (2016) Nederlands Tijdschrift voor Energierecht 4/2016; Esther van der Waal, Alexandra Das, and Tineke van der Schoor, 'Participatory Experimentation with Energy Law: Digging in a 'Regulatory Sandbox' for Local Energy Initiatives in the Netherlands'(2020) 13(2) Energies [458].
[82] Letter of the Secretary of State of Economic Affairs and Climate to the House of Representatives, 16 June 2021, DGKE-E/21139861.
[83] See letter from the Minister of Economic Affairs and Climate to the Upper House of Parliament of 10 December 2020, 34627, nr. F.

2.4.1.3 Supply

The proposal for the new Energy Act includes a special provision on energy supply, which is particularly relevant for energy communities allowing for deviations from the general rule that only licensed supply companies are entitled to supply small (household) customers.[84] A supply license is not required for energy communities that produce energy (electricity or gas), subject to the conditions that the energy community does not supply more energy than it produces annually and that the supplied small (household) customers are members or shareholders of that energy community. So, the energy community can supply the self-generated energy to its members and shareholders without the need to obtain a supply license.[85] However, the Explanatory Memorandum limits this right to supply by specifying that energy communities will only be allowed to supply a limited number of final customers. The exact number of customers which is allowed to be supplied by the energy community will be determined by ministerial decree.

It might be relevant to mention that this is a much-discussed provision. The earlier concept version of the proposal for the new Energy Act of December 2020 did not include this option, but another way of trying to organise supply via the energy community. It was proposed that a supply license is not required if the electricity is supplied via a secondary allocation point (SAP),[86] given that the produced electricity is supplied to the members or shareholders of the legal entity owning the production installation (i.e. self-production).[87] This situation was considered to be relevant when energy communities aim at supplying electricity to their members or shareholders. Yet, it needs to be emphasised that according to this proposal energy communities could only supply via SAPs, as a result of which supply via primary allocation points (PAP) would remain subject to a supply license. According to the Explanatory Memorandum to the concept proposal of December 2020, the distinction between SAPs and PAPs was the result of the need to strike a balance between providing energy communities the opportunity to supply energy and the need to protect consumers, i.e. ensuring reliable supply.[88] It is not clear, why this solution was again amended in the next version of the proposal for the new Energy Act.

2.4.1.4 Proximity and Cross-Border Participation

Generally, the definition of CEC in EU law and energy communities in the proposal for the new Energy Act does not include a specific geographical scope for energy communities.

[84] Art. 2.2.15 proposal for the new Energy Act, version November 2021.
[85] Art. 2.19 (2 a), proposal for the new Energy Act, version November 2021.
[86] Allocation points are defined in the Begrippen Code Elektriciteit as *"virtual point at the transfer point of a connection, where the energy exchange between an installation and the grid is administratively assigned to a market party as if measurement took place at the transfer point of the connection"*. A can thus be understood as a second, separate and independent connection behind a primary connection with a separate and independent EAN-code. The basic idea is that a SAP does not require a separate physical connection or cable to the grid, but only an extra meter.
[87] Art. 2.2.15(2 a) concept proposal for the new Energy Act, version December 2020.
[88] Para. 5.3.2 Explanatory Memorandum concept proposal for the new Energy Act, version December 2020.

Energy communities which develop a renewable energy project may decide to limit membership or shareholding and effective control to those who are located in *"close proximity"* (in Dutch *"nabije omgeving"*) of the renewable energy project.[89] This latter requirement transposes the requirement of RECs that members or shareholders need to be *"located in the proximity of the renewable energy projects that are owned and developed by that legal entity"*.[90] Here, of course, the question is how to define *"proximity"* and whether this is different from the requirement proposed in the proposal for the new Energy Act, which refers to *"close proximity"*. However, in order to allow for *"local laws for local energy"* it is argued that following the subsidiarity principle the concept of local proximity should be further defined in national law.[91] Member States can thus decide to apply laws on spatial design, zoning, or urban planning.[92] One example of this in the Netherlands is the postal code areas which have been used for defining locality for renewable energy projects.[93] The next question is whether the concept of local proximity limits any cross-border cooperation as this is to be determined by the national legal framework. The proposal for the new Energy Act does not explicitly mention the option of cross-border participation. As it is not specifically excluded, it can be argued that energy communities in the Netherlands can be open to cross-border participation. Potentially, this can be backed by the option that is provided in the EMD 2019/944/EU on this. However, as distribution system operation is not a potential activity for energy communities according to the proposal for the new Energy Act, these communities seem to be limited to participation, for example, through membership and/or shareholding.

2.4.2 German Law Governing "energy communities"

The German legislature adopted amendments to the EnWG for transposing the EMD 2019/944/EU in July 2021.[94] However, there is not specific reference or transposition of the provisions on CEC or REC. Although not specifically referred to as energy communities, German law provides for citizen energy initiatives. The current legal framework governing citizen energy initiatives (*"Bürgerenergiegesellschaften"*) is based on the general Act on Cooperatives (*"Gesetz betreffend die Erwerbs- und Wirtschaftsgenossenschaften"*) and the EEG. The EEG defines *"Bürgerenergiegesellschaft"* as:

> *"every company:*
> *a) which consists of at least ten natural persons who are members eligible to vote or shareholders eligible to vote,*

[89] Art. 2.5 (2 b) proposal for the new Energy Act, version November 2021.
[90] Art. 2(16a) RESD 2018/2001/EU.
[91] Simon Vanhove, 'Locality in EU Energy Law' (2020) European Energy and Environmental Law Review 220-231.
[92] Mikołaj Jasiak, 'Energy Communities – Challenges for Implementation of the EU Legal Framework' (2021) in M.M. Roggenkamp and C. Banet European Energy Law Report XIV (Intersentia, 2021).
[93] Lea Diestelmeier and Dirk Kuiken, "Legal Framework for Prosumers in the Netherlands" in M.M. Roggenkamp and C. Banet (eds.) European Energy Law Report Vol. XII, (Intersentia, 2018) p. 151-167.
[94] "Law for the transposition of the EU legal requirements and the regulation of hydrogen grids in the Energy Industry Act". (Gesetzes zur Umsetzung unionsrechtlicher Vorgaben und zur Regelung reiner Wasserstoffnetze im Energiewirtschaftsrecht).

b) in which at least 51 % of the voting rights are held by natural persons whose main residence has been registered […] *for at least one year prior to submission of the bid in the urban or rural district in which the onshore wind energy installation is to be erected,*

c) in which no member or shareholder of the undertaking holds more than 10 % of the voting rights of the undertaking, whereby in the case of an association of several legal persons or unincorporated firms to form an undertaking it is sufficient if each of the members of the undertaking fulfils the preconditions pursuant to letters a to c."[95]

The EEG then establishes provisions on the promotion of *"citizen energy initiatives"* in tendering procedures for renewable energy production.[96]

Despite the existence of these provisions, stakeholders voiced serious doubts and argued that these implement the concept of CEC and REC insufficiently. In the summer 2021, the union for citizen energy ("*Bündnis Bürgerenergie"*) filed a complaint at the EU Commission against Germany for not transposing the concept of REC sufficiently.[97] This complaint is based on several assessments.[98] The concept of CEC has also not been further taken up by the German legislature and is not explicitly implemented in the national legal framework. It can be assumed that the German legislature considered the existing legal framework on *"Bürgerenergiegesellschaften"* as sufficiently implementing RECs and CECs. However, following the complaint of the stakeholder group to the EU Commission, this might have to be amended in the near future.

Another concept under German law appeared relevant to assess in the context of the SEREH project, namely *"Kundenanlage"* (*"customer facility"*) allowing for exemptions of the general legal framework for operating an alternative supply system. It is relevant to mention that this concept does not stand in relation with the one of "energy communities" and cannot be seen as implementing the idea of "energy communities", as it is for example, not required that a legal entity is set up to establish a *"Kundenanlage"* or ensure specific governance structure. The following section presents the concept *"Kundenanlage"*.

2.4.3 German Law Governing *"Kundenanlage"* (customer facility)

The concept *"customer facility"* is facility for the delivery of energy within a spatially separated supply area, typical examples are an apartment complex, a building or several buildings located in a confined area. To understand this concept further it is helpful to understand in the first place what it is *not*. First, it is *not* an energy installation as defined by

[95] § 3(15) EEG.
[96] § 36 g EEG.
[97] See Bündnis Bürgerenergie e.V. (6 August 2021) at https://www.buendnis-buergerenergie.de/aktuelles/news/artikel/2021-8-6/eu-beschwerde
[98] Boos, Hummel, und Wegerich, 'Rechtliche Stellungnahme: Umsetzung der EU-Richtlinie zur Förderung der Eigenversorgung aus Erneuerbaren Energien und der Erneuerbare-Energie-Gemeinschaften durch das EEG 2021?' (3 August 2021) and Institut für Zukunftsenergie und Stoffstromsysteme, 'Kurzstudie Stand der Umsetzung der RED II-Richtlinie in Deutschland mit Blick auf die Bürgerenergie' (28 July 2021).

§ 3(15) EnWG and which is much broader in scope as § 3(15) refers to an installation which may include production, storage, transport, or delivery of energy. A *"customer facility"* is only meant for the delivery (*"Abgabe"*) of energy. Secondly, a *"customer facility"* is also *not* (part of) a supply network as the definition of supply networks clearly states that:

> *"Electricity supply networks and gas supply networks cover one or more voltage levels or pressure levels with the exception of customer facility* […]*"*[99]

This implies that the respective rules for supply networks are, in principle, not applicable.[100] A *"customer facility"* entails the situation where several customers, and most commonly a production installation are connected to an energy supply network in a geographically confined area. However, the production installation itself is not part of the *"customer facility"*. This confined area can be connected to the supply network, however, it needs to be separated by a meter. The operator of the *"customer facility"* is the supplier of the customers connected to the *"customer facility"*. If the energy produced by the production installation which is part of the *"customer facility"* is not sufficient, the "*customer facility"* can, as a whole, be supplied by a regular supplier. However, customers located within the confined area of the *"customer facility"* retain the right to choose their supplier. Thus, the concept of non-discriminatory TPA still applies.[101]

The EnWG establishes several cumulative criteria which need to be fulfilled for qualifying as a *"customer facility"*.

> *"Customer facilities"* are
> *"Energy installations for the delivery of energy which are,*
> *a) located in a geographically coherent area,*
> *b) connected to an energy supply network or to a generation facility,*
> *c) insignificant for ensuring effective and undistorted competition in the supply of electricity and gas; and*
> *d) made available in a non-discriminatory way and free of extra charges to any person for the purpose of supplying the final consumers connected thereto, irrespective of the choice of energy supplier;"*.[102]

According to a recent decision of the Federal Court of Justice, the burden of proof for the fulfillment of the conditions of the *"customer facility"* lies with the operator of the *"customer facility"*.[103]

The first requirement of *"geographically coherent area"* may entail several properties of different owners and which are not necessarily directly connected or bordering each other. What is essential is that from an objective perspective, it is recognized that there is a degree

[99] § 3 (16) EnWG.
[100] Johann-Christian Pielow and Hans-Martin Koopmann, 'Energy law in the Netherlands' in Martha M Roggenkamp, Catherine Redgwell, Anita Rønne, and Iñigo del Guayo (eds.) Energy Law in Europe (OUP 3rd ed. 2016), para. 8.135.
[101] Bayernwerk, 'Information für Kundenanlagenbetreiber im Sinne des § 3 Nr. 24a oder b EnWG' <https://www.bayernwerk-netz.de/content/dam/revu-global/bayernwerk-netz/files/kundenanlagen/20210701-bayernwerk-information-kundenanlagenbetreiber.pdf>
[102] § 3 Nr. 24a EnWG.
[103] BGH, Beschluss vom 12. November 2019, Az.: EnVR 65/18, EnWZ 2020, S. 265 ff. (Rn. 31).

of *"coherency"*. This might for example be neighborhood, or a street.[104] The second requirement is rather obvious and just specifies the connections, i.e. to a production installation and/or the grid. The third condition requires that the competition in the energy sector is not negatively affected. Assessing this requirement requires more detailed information of the number of customers to be connected to the *"customer facility"*, the size of the areas, and the expected amount of electricity transported and consumed within the *"customer facility"*. Generally, in a relatively recent decision, the Federal Court of Justice established four criteria for assessing the effect on competition.[105] Potentially, competition would be negatively affected if the following criteria would apply: If several hundred final customers are connected, where the formulation *"several hundred"* would at least entail 200 or even 300 final customers; if the facility was supplying an area of significantly more than 10,000 m²; if the annual amount of energy distributed within the facility clearly exceeds 1000 MWh; if several buildings are connected to the facility.[106] The fourth requirement states the need for non-discriminatory TPA to the facility for the purpose of supplying customers, implying that all customers connected to the *"customer facility"* always retain the right to freely choose their supplier. On the basis of an informal request, the state regulatory authority (*"Landesregulierungsbehörde"*) can assess whether a specific project or site could be qualified as a *"customer facility"* and would also further decide whether such a qualification would need to be assessed by the national regulatory authority (*"Bundesnetzagentur"*).

2.4.4 Assessment

The proposal for a new Energy Act in the Netherlands aims at transposing the concepts of CEC and REC into national law, but does not provide for a specific role for energy communities in the Netherlands for owning and operating infrastructure. Cross-border participation is not excluded. The current version of the proposal for a new Energy Act includes the option for energy communities to supply energy to their members and shareholders without the need to obtain a supply license. Possibly, this could include members and shareholders in Germany. However, it does not provide for any means on how the energy could be supplied to the members and shareholders in Germany.

The EU legal concepts of REC and CEC have not been transposed in the German legal framework. Instead, the concept of *"Bürgerenergiegesellschaft"* and *"customer facility"* was presented, as it entails an alternative facility to the general supply network which is defined, amongst other criteria, by a geographical confined area. This means that, generally, the concept *"customer facility"* provides for an alternative system of energy supply within a small community. However, it is doubtful whether this concept is relevant for the project of SEREH, as one of the conditions is that the site has to be a *"coherent area"* which is very

[104] Bundesnetzagentur, Markus Langer, 'Kundenanlagen im EnWG – Die Sicht der Bundesnetzagentur'(24 Janaury 2019).
[105] BGH, Beschluss vom 12. November 2019, Az.: EnVR 65/18, EnWZ 2020, S. 265 ff. (Rn. 32).
[106] OLG Dresden, Beschluss vom 16. September 2020, Kart 9/19 and OLG Düsseldorf, Beschluss vom 26. Februar 2020, 3 Kart 729/19, Rn. 141

unlikely to be across a national border. It can be concluded that neither the existing concept of *"Bürgerenergiegesellschaft"* nor the concept "customer facility" sufficiently implement the concept of CEC. It remains to be seen whether on the basis of the complaint filed by the "*Bündnis Bürgerenergie"* to the EU Commission will urge Germany to revise and adjust the existing legal framework of energy communities.

2.4.5 Conclusion

EU law, in particular the EMD 2019/944/EU, provides for an innovative concept, namely CEC, which can be open to function across national borders. Currently both Member States, the Netherlands and Germany, have not implemented the provisions in their national legal frameworks yet. While in the Netherlands there is a proposal for a new Energy Act, the German legislator did not include specific provisions for the transposition of CEC and REC. It remains to be seen whether the complaint filed by the *"Bündnis Bürgerenergie"* to the EU Commission regarding the failure of the German government to transpose the provisions on REC, and arguably also on CEC will lead to an infringement procedure against Germany and finally to adjustments in the German legal framework. So, based on the current legal frameworks on energy communities in both countries, there seems to be very limited room to apply this concept directly across national borders for a joint initiative. However, what might be considered is to apply this concept in combination with one of the settings discussed in the previous sections, in particular 2.2 and 2.3. For example, it could be possible that a production installation which located in the Netherlands and is owned by an energy community that is open for members and shareholders located in Germany, is connected via a *"direct line"* to Germany, i.e. a specified customer in Germany. In this way, an energy community could possibly act across the border. Another combination of elements could be that if the Netherlands and Germany decide to implement a *"cooperation mechanism"* as established by RESD 2018/2001/EU, that a *"joint project"* is implemented by a cross-border energy community.

3 NATIONAL LEGAL FRAMEWORKS: OVERVIEW OF OPTIONS AND LIMITATIONS FOR SEREH

Table 3: Overview assessment of current Dutch and German legal framework for SEREH settings

Setting	Dutch law	German law	Option	Limitations
1	-Cross-border grids functioning on the basis of DC may be operated by other party than national TSO. As the infrastructure would probably qualify as "grid" a system operator would need to be appointed and the standard legal framework, i.e. non-discriminatory TPA, would apply.	-No comparable option such as the "DC connection" under Dutch law, but also no categorical exclusion to connect cables extending national borders. Connection of DC cable from the Netherlands would at least depend on potential negative technical or economic repercussions for DSO.	-Linking systems via cross-border grid functioning on DC at distribution system level is an option from the Dutch side, which is not categorically excluded from the German side.	-Direct connection of distribution systems across the border is not very likely. Alternative options, such as the DC cross-border grid under Dutch law, need to be possible under both jurisdictions with regard to technical and economic feasibility.
2	- DSOs are not responsible for connection outside of their areas of operation - GoOs are not awarded for production installations outside of NL - RES production outside NL is in principle not eligible for the SDE++ support scheme, with the exception, in case a cooperation agreement exists as established by the RESD 2018/2011/EU.	- Generally, connecting production which is located in another Member State is not excluded, however, it needs to be technical and economic reasonable for the respective DSO. - GoOs are not awarded for production installations outside of DE - RES production outside DE is in principle not eligible for the support scheme, with the exception, in case a cooperation agreement exists as established by the RESD 2018/2011/EU.	-*"Cooperation mechanism"* between Member State allow for projects relating to the production of electricity from RES across borders and allow access to support schemes	-The scope of the area of operation for DSOs is limited to Dutch municipalities and provinces, vice versa, German legislation requires that connections are technically and economically reasonable for the respective DSO. -In principle, support schemes are not open to production located in other Member State.

3	-A direct line entails two options: either the connection of two isolated users (producer and consumer) or a direct cable between a producer and (a) consumer(s) of which one of them can be connected to the grid -In principle no geographical restriction to the Netherlands -Energy tax is applicable -Producer is eligible to receive SDE++ subsidy	The wording of the German definition is not entirely clear, as *"isolated"* is translated as *"einzeln"*, which rather seems to indicate the number of connected users than whether they are allowed to have another connections to the grid. Also, renewable energy that is produced by an installation which is connected to a direct line is not eligible to benefit from the support scheme. Generally, the definition does, however, not exclude the option that a direct line expands the national border.	-*"Direct lines"* are, in principle, not restricted to be located in one country. -*"Direct lines"* fall outside the general legal framework of the energy sector. So, in principle, a "direct line" could connect a producer in one Member State with a consumer in the other Member State.	-Dutch law clearly prescribes that only one of the connected parties can be connected to the grid. This is less clear in German law. -SDE++ subsidy is in principle applicable to production which is connected to a *"direct line".*
4	-Current provisions on *"energy communities"* are sparse and limited to a subsidy scheme for joint generation -The proposal for a new Energy Act includes a definition for energy communities	The German legislator did not transpose the provisions on CEC and REC. The concept of "*customer facility"* is restricted to *"coherent areas"* which is probably not the case for the SEREH project.	-Energy communities are according to EU law potentially open for cross-border participation. This might at least include membership and/or shareholding. However, both countries did not explicitly refer to this option in their national legal frameworks. -Energy communities might be an option in combination with one of the other settings, for example as operator of a *"direct line"* or maybe also of a *"joint project"*.	-Under the Dutch proposal for a new Energy Act, energy communities are not allowed to operate distribution systems -The element of cross-border participation is not further specified

4 RECOMMENDATIONS FOR LOBBY AGENDA

Based on the overall findings of this report on the current national legal frameworks of the Netherlands and Germany on the different SEREH settings as sketched in table 2, the following recommendations can be presented. Firstly, on the basis of the identified obstacles in each setting, recommendations per setting can be formulated. Secondly, more general recommendations can also be formulated based on experiences beyond the SEREH project, but with relevance for cross-border initiatives in the energy sector at local level.

4.1 Recommendations per Setting

As outlined at the beginning of this deliverable, the distinguishing element between the settings is *what* is connected across the border (for example two distribution systems, a production installation with a distribution system, a production installation with a consumer), and for *which purpose* (for example, integrating markets, direct supply, or feed-in the distribution system). Accordingly, the settings have a different objective which is relevant to keep in mind when comparing the settings and deciding for a route forward. Meaning, only because a setting might be relatively easy to achieve, does not mean that all envisaged goal of the SEREH project can be achieved with this setting.

1. **Connecting distribution systems across the border**

The potential scope of this setting is very wide, as it aims to connect distribution systems across the border. To the best of knowledge, not even within national territories it is common practice to connect distribution systems with other distribution systems. Accordingly, the analysis in section 2.1 showed that under the current legal framework there are barely options to connect distribution systems across the border. Possibly, a cross-border grid functioning on DC can be established, however, it is rather far-fetched to assume that this could be implemented at the distribution system level for several reasons. First, as EU Regulation 2019/943/EU specifically refers to interconnectors as cross-border transmission systems the margin of interpretation regarding cross-border distribution grids is very limited. Secondly, and related to the previous point, German law narrowly implements the definition of *"interconnector"* established by the EMR 2019/943/EU. Thirdly, even if one would want to establish a cross-border grid functioning on DC, this would raise question about the legal qualification of such an infrastructure. It was argued that such an infrastructure would probably qualify as a *"grid"* as defined by the Dutch Electricity Act. This in turn would require appointing an operator. However, as the operation of this infrastructure would extend the national border and thus the usual area of operation of the DSOs on both sides of the border it is uncertain whether the DSO can operate grids in another jurisdiction. Again, while it is not excluded that a DSO can operate beyond national borders, the mere existence of a legal possibility does not necessarily imply that this is a realistic option.

However, in the context of more decentralization in the electricity sector it could be argued that the integration of markets does not necessarily only need to take place at the transmission system level. The key argument here is that with the development of the internal energy market, national borders should not constitute an obstacle for the trade of energy, regardless of the voltage level of the grid. As this is, however, a more fundamental argument, **the recommendation here is to build an alliance, ideally similar initiatives in other EU Member States, or at least stakeholders who are interested in this development and address the topic of interconnection at distribution system level at the EU policy level.**

2. **Double RES generation connection to DE- or NL distribution grid**

This setting seems to be the most innovative one as the production installation is connected to the distribution systems in both countries, however, only one of the connections can be used at a time. Possibly, this is a "smart" solution, as flexibility for distribution system use is increased, "simply" by having two systems available. While there is no direct interconnection of the systems and thus no integration of the market at local level, the fact that the production installation can be connected to one of two systems might overall benefit the region as additional stress on the distribution grid is lowered. However, an additional cost results from the fact that two connections need to be established and maintained. It needs to be assessed whether this would still be economically viable. Another legal obstacle is that the Dutch and the Dutch legal framework on the promotion of energy from renewable sources require the production installation to be located in the respective jurisdiction and, that the production installation is connected to the grid located in the respective country. This means that, for example if the production installation was located in Germany, with one connection to the Dutch grid and one connection to the German grid, the producer would only receive support for the energy which is fed-in the German grid. Vice versa, the same would apply. However, both jurisdictions allow for access to the support scheme for foreign production if a *"cooperation mechanism"* as meant by RESD 2018/2001/EU is in place. At the moment, an agreement for a join *"cooperation mechanism"* is not in place between the Netherlands and Germany. **Therefore, the main recommendation for this setting is to address the national policy makers to consider the establishment of a "cooperation mechanism" for opening up (a part of) the support scheme for energy produced on the basis of RES.**

3. **Direct electricity connection for exclusively specified customers**

This setting seems to be the most feasible one under the current legal framework, yet, it also seems to be the most limited one (at least considered in isolation, more on this under 4 here below). There seems to be no immediate legal obstacle to construct a *"direct line"* across the border. However, as there are some differences in how the concept of *"direct line"* is exactly transposed in the national legal frameworks, it is necessary to consider those differences carefully in order to decide for a more favorable situation. It has been suggested that it seems more favorable that the producer is located in the Netherlands, while the consumer seem to be better off when located in Germany. One point that can be

mentioned is that the transparency from the German side on *"direct lines"* is very low and **it can therefore be recommended to request transparency of the German regulator with regard to the administrative procedure and the registry of existing *"direct lines"* in Germany.**

4. **Cross-border group of producers and consumers**

The final setting involves the concept of energy communities. At the moment, neither the Netherlands nor Germany have implemented the concept in their national legal frameworks and so far, it is not clear whether they will follow the option to allow energy communities to function across national borders. Overall, the current national legal frameworks provide very limited options for the realization of CEC for the SEREH settings. However, and as hinted under the preceding point 3, possibly, energy communities could be combined with the setting of the *"direct line"*, or even the one of the production installations with two connections. For example, an energy community could own a production installation and the *"direct line"* connecting a customer across the national border. The energy community would need to be open for members and/or shareholders from both Member States. **It can therefore be recommended that the national legislature needs to ensure that membership of energy communities is open to persons located in another country where the energy community is established.**

4.2 General Recommendations

In addition to the setting-based recommendations outlined above, some additional suggestions and recommendation beyond the SEREH project are worthwhile mentioning.

- It can be noted that lessons may be learned from other areas where cross-border energy supply on distribution level (may) take place. One example is the cross-border community of Baarle consisting of the villages Baarle-Hertog located in Belgium and the village Baarle-Nassau in the Netherlands. Both are part of one community and need to be supplied with electricity by either or one of the national electricity supply companies and the distribution systems operated by the respective DSOs (Enexis in NL and Iveka in BE). Is each DSO operating their distribution grid along the lines of the national territories and/or are both systems interconnected? We would argue that the DSOs have some sort of agreement on how to divide the task of operation, regardless of the national borders. Further research on how this is organized may be beneficial for SEREH.

- Attempts to develop cross-border energy systems is not limited to SEREH. For example, the Association of European Border Regions initiated research on a very similar initiative in the Dutch-German context and might also be aware of other border regions where similar approached might be of interest. Building an EU network on this matter might be of special relevance for creating an alliance and

lobbying on EU level for more fundamental changes, such as outlined hereabove under the recommendations for the setting under point 1.

- Related to the foregoing points, it is also relevant to mention that it is recognized at EU level that especially in border regions differing legal frameworks can be a severe obstacle for implementing projects across borders. Currently, a Regulation on a mechanism to resolve legal and administrative obstacles in a cross-border context is in the EU legislative process, awaiting the position of the European Council. The subject matter of the proposal for the Regulation is defined as follows:

  > *"This Regulation sets up a mechanism to allow for the application in one Member State, with regard to a cross-border region, of the legal provisions from another Member State, where the application of the legal provisions of the former would constitute a legal obstacle hampering the implementation of a joint Project"*[107]

  The *"mechanism"* would thus entail application of national law for a specific area of one Member State in the bordering Members State in order to resolve potential legal conflicting rules.

  This mechanism would need to be applied on a voluntary basis by the Member States, for a joint project – which can involve infrastructure or services of general economic interest – in a specific border area. This would further lead to a process in order to identify the legal obstacle. The mechanism would then provide for different measures to overcome the obstacles, which may involve allowing for derogations from the normally applicable national rules for the specific cross-border project. It is thus strongly recommended to follow the process of this Regulation in the EU legislative process.

[107] Proposal for a Regulation of the European Parliament and of the Council on a mechanism to resolve legal and administrative obstacles in a cross-border context – COM(2018) 373 final, 29.05.2018.

5 CONCLUSION

The aim of this report was to assess the general legal framework of the Netherlands and Germany concerning the "SEREH electricity settings" as developed in the project. Based on the overall findings, it can be concluded that while per setting there are options to realise (parts) of the SEREH initiative, it is clear the existing legal concepts and the respective legal frameworks for network regulation in both countries have not been designed with the possibility of cross-border infrastructure at the low voltage level. This confirms the findings of the preceding deliverable on EU law which already presented that the current legal framework has been developed for an electricity sector which is largely organized in a "top-down" manner, which is characterized by large-scale production and networks transporting electricity from those large-scale installations via high-voltage grids to low-voltage distribution grids, which forward the electricity to the final consumers. Rights and responsibilities are to a large extent organized along this technical setting.

Speaking in terms of which of the sketched settings is most realistic to be implemented under the current legal framework, it seems that the setting of the *"direct line"* is most favorable (setting 3). However, this setting is arguably also the most limited setting as it "simply" implies the connection of a production installation to one or more specified customers. Correspondingly, the setting which seems to be the least realistic to be implemented under the current legal framework, the connection of distribution systems across the border (setting 1), seems also to be the most far-reaching one in terms of interconnecting markets at the distribution system level. Setting 2 (production installation with two connections, one to each Member State) seems to be somewhere in between. The most prone obstacle would be here the barrier for producers of RES to access the support scheme in the respective other Member State and additional costs due to establishing an maintaining two connections. Other obstacles are of more technical nature, for example the distance of the production installation to the grid in the respective other Member State and related upfront costs for the connection. A new legal question concerns the operation of the two connections, i.e. who decides when a connection is used, meaning what determines the "switching". The final setting 4 (cross-border group of consumers and producers, i.e. energy communities) seems to be an option which can best be applied in combination with for example setting 2 or 3. For example, an energy community could own a production installation in the Netherlands. The energy community would need to be open for members and shareholders located in Germany. The production installation could be connected to a *"direct line"* which connects to a consumer in Germany.

More fundamentally, and as concluded on setting 1 (cross-border connection of distribution systems), the idea of the internal energy market essentially is that national borders shall not hamper the trade of energy within the EU. The legal framework for facilitating the internal energy market at the infrastructural level is focusing on the transmission system level as this was logical considering the traditional "top-down" setting of the electricity sector, where large centralised production, mostly on the basis of fossil fuel energy sources, is connected to high-voltage transmission systems transporting large amounts of electricity via long

distances closer to the locations of final consumption. However, with the technical sophistication of small-scale production installations running on RES, the traditional energy sector setting is changing and complemented by a "bottom-up" setting. In this setting, the cross-border element, i.e. the integration of markets, is largely absent which is why EU energy law is less prescriptive. As this SEREH project aims to showcase is that this setting is changing, also across borders.

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