

DAĞITIM YERLERİNE



Tarih : 15/09/2026
Sayı : 6450225777-E.1387
Konu : Net Sıfır Sanayi Yasası'na İlişkin Rehber

İlgi : 11/09/2026 tarihli ve E-79668890-749-00126166016 sayılı yazı

İlgide kayıtlı Ticaret Bakanlığı Uluslararası Anlaşmalar ve Avrupa Birliği Genel Müdürlüğü tarafından Kuruluşumuza iletilen " Net Sıfır Sanayi Yasası'na İlişkin Rehber" konulu yazı ekte yer almaktadır.

Bilgilerinizi ve katılımcılarınıza duyurulması hususlarını rica ederiz.

Saygılarımızla,

e-imzalıdır

Şükran ERDOĞAN
Genel Sekreter V.

e-imzalıdır

Mustafa R. TÜRKER
Sayman Üye

Ek :

- 1- İlgi Yazı (2 Sayfa)
- 2- Net Sıfır Sanayi Yasasına İlişkin Rehber İçeceği (20 Sayfa)

Dağıtım:

TÜM ORGANİZE SANAYİ BÖLGESİ
MÜDÜRLÜKLERİ

Bu belge, güvenli elektronik imza ile imzalanmıştır.

Evrak Doğrulama: <https://ebys.osbuk.org/enVision.Sorgula/BelgeDogrulama.aspx?eD=BSA347FLTR&eS=1387> Pin Kodu: 32582

TOBB İkiz Kuleleri C Kule 16. Kat, Mustafa Kemal Mah. Eskişehir Yolu 9. Km,
No: 252 (Dumlupınar Bulvarı) 06530 Çankaya / Ankara
Tel: +90 (312) 419 18 00 (PBX) **Fax:** +90 (312) 419 27 00
E-Posta: info@osbuk.org.tr **Web:** www.osbuk.org **KEP:** osbuk@hs01.kep.tr

Ayrıntılı bilgi için: Uğur Kılıç
Tel: +90 (312) 419 18 00 (PBX)/118
E-Posta: ugur@osbuk.org.tr





T.C.
TİCARET BAKANLIĞI
Uluslararası Anlaşmalar ve Avrupa Birliği Genel Müdürlüğü

Sayı : E-79668890-749-00126166016
Konu : Net Sıfır Sanayi Yasası'na İlişkin Rehber

DAĞITIM YERLERİNE

Malumları olduğu üzere Avrupa Komisyonu tarafından, 2024/1735/AB sayılı Net Sıfır Sanayi Yasası (Net Zero Industry Act-NZIA) kapsamında AB sanayisinin daha dayanıklı ve rekabetçi hale getirilmesi, karbon ayak izinin azaltılması, net-sıfır teknolojilerin üretiminin artırılması ve temiz teknoloji alanındaki rekabet avantajının güçlendirilmesi amaçlanmaktadır.

Bu kapsamda AB'nin net-sıfır teknoloji üretim ekosistemini güçlendirmeye yönelik bir tedbirler çerçevesi oluşturan Net-Sıfır Sanayi Yasası'nın (NZIA) 25. maddesinin uygulanmasına ilişkin rehber, 31 Ağustos 2026 tarihli AB Resmi Gazetesinde yayınlanmış olup söz konusu rehber belgenin bir örneği yazımız ekinde gönderilmektedir.

Anılan rehber belge, NZIA'nın 25. maddesi kapsamında, kamu alım süreçlerinde sürdürülebilirlik gereklilikleri, fiyat dışı kriterler ve dayanıklılık gerekliliklerine göre değerlendirme yapılabilmesi amacıyla, ihale makamlarına pratik rehberlik sağlamak üzere hazırlanmıştır.

Bahse konu rehberin incelenmesinden, Madde 25 (7) uyarınca, bir net-sıfır teknoloji ürünü veya ana spesifik bileşeninin AB arzının %50'sinden fazlasının tek bir AB dışı ülkeden gelmesi ya da bu oranın %40'ın üzerinde olması ve aynı zamanda iki ardışık yıl boyunca ortalama en az 10 yüzde puan artış göstermesi halinde, söz konusu ülkenin "baskın tedarik kaynağı" (dominant source of supply) olarak kabul edileceği ve bu durumda, ilgili net-sıfır teknoloji nihai ürününün toplam değerinin en fazla %50'sinin kamu ihalesi kapsamında baskın tedarik kaynağından gelmesine izin verilebileceğine yer verildiği görülmektedir.

Bilgileri ve tüm ilgili paydaşlara duyurulması hususunda gereğini rica ederim.

Fatma Canan NİLÜFER DORA
Bakan a.
Genel Müdür Yardımcısı

Ek: Net Sıfır Yasası Rehber Belge

Bu belge güvenli elektronik imza ile imzalanmıştır.

Belge Doğrulama Kodu: ADFC76EF-AAD7-4A8E-B324-F27CAF1616C6

<https://www.turkiye.gov.tr/ticaret-bakanligi-ebys>

Adres: Söğütözü Mah. 2176. Sk. No:63 06530 Çankaya/ANKARA

Telefon No: 0 312 204 9122 Faks No: 03122128741

e-Posta: F.Kesik@ticaret.gov.tr

İnternet Adresi: www.ticaret.gov.tr

KEP Adresi:

Ayrıntılı bilgi için:

FATMA KESİK

Şube Müdürü

Telefon No: 0 312 204 9122



[3] tarihli ve [2] sayılı yazı 17.09.2026-1532

T.C. TİCARET BAKANLIĞI
ULUSLARARASI İLİŞKİLER GENEL MÜDÜRLÜĞÜ
Tarih: 10/09/2026
Sayı: E-79668890-749-00126166016
Sistem Kayıt Tarihi: 08/09/2026

Dağıtım:

Türkiye Odalar ve Borsalar Birliği Genel Sekreterliğine (TOBB)
Türkiye İhracatçılar Meclisine (TİM)
Deik Dış Ekonomik İlişkiler Kuruluna (DEİK)
Türk Sanayici ve İşadamları Derneği Genel Sekreterliği (TÜSİAD)
Müstakil Sanayici ve İşadamları Derneği Genel Sekreterliğine (MÜSİAD)
Türkiye İşveren Sendikaları Konfederasyonuna (TİSK)
Uluslararası Yatırımcılar Derneğine (YASED)
Organize Sanayi Bölgeleri Üst Kuruluşuna (OSBÜK)
Türkiye Plastik Sanayicileri Araştırma, Geliştirme ve Eğitim Vakfına (PAGEV)
Türkiye Çelik Üreticileri Derneğine
Otomotiv Sanayii Derneğine (OSD)

Bu belge güvenli elektronik imza ile imzalanmıştır.

Belge Doğrulama Kodu: ADFC76EF-AAD7-4A8E-B324-F27CAF1616C6

<https://www.turkiye.gov.tr/ticaret-bakanligi-cbys>

Adres: Söğütözü Mah. 2176. Sk. No:63 06530 Çankaya/ANKARA

Telefon No: 0 312 204 9122 Faks No: 03122128741

e-Posta: F.Kesik@ticaret.gov.tr

İnternet Adresi: www.ticaret.gov.tr

KEP Adresi:

Ayrıntılı bilgi için:

FATMA KESİK

Şube Müdürü

Telefon No: 0 312 204 9122



Bu belge, 5070 sayılı Elektronik İmza Kanununa göre Güvenli Elektronik İmza ile imzalanmıştır.
Evrak sorgulaması <https://osb.cbksoft.com/IMOSB/Sorgula/B5M5AYR72> adresinden yapılabilir.



C/2026/4623

31.8.2026

COMMUNICATION FROM THE COMMISSION

**Guidance on the application of Article 25 of Regulation (EU) 2024/1735 of the European Parliament
and of the Council on establishing a framework of measures for strengthening Europe's net-zero
technology manufacturing ecosystem and amending Regulation (EU) 2018/1724**

(C/2026/4623)

The purpose of this Communication is to give practical guidance to contracting authorities and contracting entities for the assessment of the sustainability and resilience contribution in public procurement procedures in accordance with Article 25 of the Net-Zero Industry Act (NZIA). This guidance is not legally binding. While it occasionally paraphrases the provisions of Union legislation, it is not meant to add to or diminish the rights and obligations set out in the NZIA or other binding instruments such as STEP. Moreover, this guidance is without prejudice to State aid rules and the subsidiarity principle. The Commission may revise or expand this guidance.

TABLE OF CONTENTS

	Page
I. Introduction	4
II. Scope	4
III. The sustainability and resilience contribution in Public procurement procedures	6
A. The environmental sustainability requirements (Article 25(1) of the NZIA)	6
B. The additional non-price requirements (Article 25(3) of the NZIA)	6
1. The special condition related to social or employment-related considerations	6
2. The requirement to demonstrate cybersecurity compliance	7
3. The specific contractual obligation to deliver on time	7
C. The resilience requirements (Article 25(7) of the NZIA)	8
1. When shall the resilience contribution be taken into account?	8
2. Applying the resilience requirements	9
3. Determination and verification of the origin of net-zero technology final products and main specific components	11
4. Measuring the value of the main specific components	11
5. Complying with the resilience requirements throughout the procurement process	12
6. Determining the proportionate charge (Article 25(7)(d) of the NZIA)	13
IV. Exceptions	13
A. The single supplier (Article 25(9)(a) of the NZIA)	14
B. No suitable tender or request to participate (Article 25(9)(b) and Article 25(11) of the NZIA)	14
C. Disproportionate cost differences (Article 25(9)(c) and Article 25(10) of the NZIA)	15
D. International agreements (Article 25(8) of the NZIA)	16

LIST OF ABBREVIATIONS

CPV	Common procurement vocabulary
CN	Combined nomenclature
EU	European Union
GPA	Government Procurement Agreement
HS	Harmonised system
JRC	Joint research centre of the European Commission
MSC	Main specific component
NZIA	Net-zero Industry Act
PV	Photovoltaic

I. INTRODUCTION

Regulation (EU) 2024/1735 on establishing a framework of measures for strengthening Europe's net-zero technology manufacturing ecosystem and amending Regulation (EU) 2018/1724 ('Net-Zero Industry Act' or 'NZIA')⁽¹⁾ establishes a legal framework aimed at strengthening the manufacturing ecosystem for net-zero technologies within the European Union. In particular, to reduce the EU's strategic dependency with regard to net-zero technologies and their supply chains and to achieve the EU's climate and energy targets, Article 5 of the NZIA sets the Commission and Member States the objectives of reaching a manufacturing capacity of at least 40 % of the EU's annual deployment needs for net-zero technologies by 2030; and 15 % of world production of net-zero technologies by 2040.

To achieve these objectives, Article 25 of the NZIA sets requirements for public procurement procedures falling within the scope of Directives 2014/23/EU⁽²⁾, 2014/24/EU⁽³⁾ and 2014/25/EU⁽⁴⁾ ('the procurement directives') to ensure public spending helps boost demand for net-zero technologies that contribute to sustainability and resilience. Article 25 of the NZIA mandates the application of minimum requirements for environmental sustainability and supply chain resilience, as well as other obligations related to the performance of the contract.

This Communication provides guidance to contracting authorities and contracting entities on the application of Article 25 of the NZIA, pursuant to Article 29(1) of the NZIA, and is without prejudice to State aid rules.

II. SCOPE

Article 25 of the NZIA applies to 'public procurement procedures falling within the scope of Directive 2014/23/EU, 2014/24/EU or 2014/25/EU, where contracts have net-zero technologies listed in Article 4(1), points (a) to (k), of this Regulation as part of their subject matter', as well as to 'works contracts and works concessions including said technologies'.

Mirroring the scope of the procurement directives. The scope of Article 25 of the NZIA mirrors the scope of the procurement directives. The thresholds, exclusions and specific situations provided for in those directives should therefore be taken into account when determining whether a procurement procedure falls within the scope of Article 25 of the NZIA. For instance, Article 25 applies to contracts subsidised by contracting authorities if they meet the criteria laid down in Article 13 of Directive 2014/24/EU⁽⁵⁾. Similarly, Article 25 also applies to dynamic purchasing systems as well as to framework agreements provided that the value of the framework agreement (not of contracts awarded based on such agreement) meets the thresholds of the procurement directives⁽⁶⁾.

Temporal scope. The law to be applied to a procurement procedure is the law applicable at the time of the call for competition or at the commencement of the procedure – not when contracts are awarded. For framework agreements and contracts awarded on the basis of such agreements, the law to be applied is the law applicable at the time of the publication of the call for competition under the framework agreement.

Including net-zero technologies. For works contracts and works concessions, Article 25 of the NZIA applies when they 'include' net-zero technologies listed in Article 4(1)(a) to (k). For instance, a contract for the construction or renovation of a school building, to be equipped with solar photovoltaic (PV) panels, would fall within the scope of Article 25.

⁽¹⁾ Regulation (EU) 2024/1735 of the European Parliament and of the Council of 13 June 2024 on establishing a framework of measures for strengthening Europe's net-zero technology manufacturing ecosystem and amending Regulation (EU) 2018/1724 (OJ L, 2024/1735, 28.6.2024, ELI: <http://data.europa.eu/eli/reg/2024/1735/oj>).

⁽²⁾ Directive 2014/23/EU of the European Parliament and of the Council of 26 February 2014 on the award of concession contracts Text with EEA relevance (OJ L 94, 28.3.2014, p. 1, ELI: <http://data.europa.eu/eli/dir/2014/23/oj>).

⁽³⁾ Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC (OJ L 94, 28.3.2014, p. 65, ELI: <http://data.europa.eu/eli/dir/2014/24/oj>).

⁽⁴⁾ Directive 2014/25/EU of the European Parliament and of the Council of 26 February 2014 on procurement by entities operating in the water, energy, transport and postal services sectors and repealing Directive 2004/17/EC (OJ L 94, 28.3.2014, p. 243, ELI: <http://data.europa.eu/eli/dir/2014/25/oj>).

⁽⁵⁾ That is when the works or services contract is subsidised directly by more than 50 % by a contracting authority and exceeds a certain threshold.

⁽⁶⁾ Current thresholds can be checked online here: https://single-market-economy.ec.europa.eu/single-market/public-procurement/legal-rules-and-implementation/thresholds_en.

For other procurement procedures, Article 25 of the NZIA applies when they have net-zero technologies listed in Article 4(1)(a) to (k), of the NZIA 'as part of their subject matter'. The subject matter of a contract should be determined by the contracting authority or contracting entity and mentioned explicitly in the procurement documents. The Common Procurement Vocabulary (CPV) can help contracting authorities and contracting entities to determine the subject matter of the contract. However, other aspects should also be taken into account where relevant. This means that Article 25 may still apply even if relevant net-zero technologies are not mentioned in a contract's CPV.

The application of Article 25 of the NZIA is triggered when a relevant net-zero technology forms part of the subject matter of a contract. Although the net-zero technology should be among the subject matter of the contract, it does not matter what share of the total value of the contract it represents, as the requirements of Article 25(1) and (7) only relate to the net-zero technologies included (and not to the whole contract). Similarly, the value of the net-zero technology is not relevant, as long as the (estimated) value of the overall contract is above the thresholds for the public procurement directives to apply.

However, the application of Article 25 of the NZIA is only triggered when the contract includes a net-zero technology final product as part of its subject matter. It is not triggered if the subject matter of the contract includes products which have a net-zero technology as one of their subcomponents. For instance, while the procurement of industrial batteries falls within the scope of Article 25, the procurement of electric buses and electric vehicles, which contain batteries, do not fall within the scope of that Article (7).

Where a procurement procedure is divided into lots, for the purpose of Article 25, the subject matter must be assessed per lot, rather than for the entire procedure. For example, if a procurement procedure is divided into two lots, one for the delivery of the net-zero technology and another for the installation of the net-zero technology, Article 25 would only apply to the first lot. Procedures may not be divided into lots with the aim of excluding them from the scope of NZIA.

No double coverage between Articles 25 and 26 of the NZIA. In some cases, the scope of Article 25 and 26 of the NZIA might overlap. For this situation, Recital 7 of the NZIA's Implementing Regulation on non-price criteria in auctions (8) sets out the following:

'In accordance with Article 26(1) of Regulation (EU) 2024/1735 Member States must include pre-qualification criteria or award criteria to assess the auction's sustainability and resilience contribution. Article 25 of Regulation (EU) 2024/1735 requires contracting authorities and contracting entities to apply in certain public procurement procedures minimum mandatory requirements regarding environmental sustainability and certain mandatory requirements to assess the tender's resilience contribution. Both public procurement procedures and auctions for deploying renewable energy sources contribute to the Union's resilience. Public undertakings operating in the energy sector that are contracting entities in accordance with Article 4 of Directive 2014/25/EU of the European Parliament and of the Council are subject to Article 25 of Regulation (EU) 2024/1735 when procuring net-zero technologies listed in Article 4(1), points (a) to (k), of Regulation (EU) 2024/1735. At the same time, they may also participate as bidders in renewable energy auctions subject to Article 26 of Regulation (EU) 2024/1735. Recital 81 of Regulation (EU) 2024/1735 recalls the importance of ensuring that the sustainability and resilience requirements are applied in a way that ensures fair and equal competition among market players regardless of their ownership structure. In order to ensure such fair and equal competition, for the purposes of assessing resilience and environmental sustainability requirements, public undertakings participating in renewable energy auctions pursuant to Article 26 should be subject only to the rules laid down in Article 26. The rules set out in Article 25 should apply to the procurement of the net-zero technologies, except where such procurement is used to carry out projects awarded in the context of renewable energy auctions subject to Article 26.'

(7) This differentiates the scope of Article 25 and Article 28 of the NZIA. Article 25 applies when net-zero technologies listed in Article 4(a) to (k) of the NZIA are part of the subject matter of the contract. This list includes batteries, which are a subcomponent of electric vehicles, but not electric propulsion systems for road transport, which can be assimilated to electric vehicles. Article 28, by contrast, applies to public schemes supporting the purchase of any net-zero technology final product, including electric propulsion systems for road transport. This is why zero emission vehicles are in scope of Article 28 of the NZIA (see Commission Communication C/2026/123).

(8) Commission Implementing Regulation (EU) 2025/1176 of 23 May 2025 specifying the pre-qualification and award criteria for auctions for the deployment of energy from renewable sources (OJ L, 2025/1176, 18.6.2025, ELI: http://data.europa.eu/eli/reg_impl/2025/1176/oj).

III. THE SUSTAINABILITY AND RESILIENCE CONTRIBUTION IN PUBLIC PROCUREMENT PROCEDURES

Article 25 of the NZIA mandates the application, in public procurement procedures falling under its scope, of three different types of requirements: the minimum mandatory requirements on environmental sustainability (Article 25(1)), a resilience requirement (Article 25(7)) and at least one of the additional requirements in Article 25(3), concerning social or employment-related aspects, cybersecurity, or an obligation to ensure timely delivery. The requirements must relate to the specific net-zero technology being procured.

In accordance with Article 25(12)(a), Member States may use additional non-price criteria beyond those listed in Article 25, including criteria not covered under the scope of the NZIA. If State aid is involved, all the non-price criteria must be designed in line with State aid rules and in particular, with set maximum weighting limits.

A. The environmental sustainability requirements (Article 25(1) of the NZIA)

Article 25(1) of the NZIA requires contracting authorities and contracting entities to include minimum requirements related to the environmental sustainability of the net-zero technologies procured, as established by means of implementing acts. Commission Implementing Regulation (EU) 2026/718 ⁽⁹⁾ lays down minimum mandatory requirements for the recyclability of wind turbine blades. Article 25(1) of the NZIA does not entail obligations for net-zero technologies and/or environmental sustainability aspects not covered by that implementing act ⁽¹⁰⁾. However, contracting authorities and contracting entities may still include additional environmental sustainability-related requirements or award criteria in their procurement procedures, as stated in Article 25(2).

Article 25(1) relies on the implementing act specifying the minimum requirements on environmental sustainability and therefore applies from the date of application of that implementing act, i.e. 30 June 2026.

B. The additional non-price requirements (Article 25(3) of the NZIA)

The additional non-price requirement in Article 25(3) applies only to works contracts and works concessions including a net-zero technology listed in Article 4(1)(a) to (k) of the NZIA.

The provision requires contracting authorities and contracting entities to include at least one of the three requirements it lists, namely:

- a special condition related to social or employment-related considerations;
- a requirement to demonstrate compliance with applicable cybersecurity requirements; or
- a specific contractual obligation to deliver the component of the contract relating to net-zero technologies listed in Article 4(1)(a) to (k) on time.

1. The special condition related to social or employment-related considerations

Contracting authorities and contracting entities should keep in mind the aim of strategic procurement under the NZIA, i.e. the condition should have a positive social- or employment-related impact on the manufacturing of the net-zero technology which is the subject matter of the contract in question. In that respect, conditions falling under Article 25(3)(a) could for example refer to employment of persons experiencing particular social or professional difficulties, SME participation, ethical sourcing, or training and apprenticeship obligations. Contracting authorities and contracting entities can also refer to special social or employment-related conditions that they have already applied successfully, provided that these are linked to the subject matter of the contract in question.

⁽⁹⁾ Commission Implementing Regulation (EU) 2026/718 of 20 March 2026 laying down rules for the application of Regulation (EU) 2024/1735 of the European Parliament and of the Council as regards minimum environmental sustainability requirements for public procurement procedures involving certain net-zero technologies (OJ L, 2026/718, 23.03.2026, ELI: http://data.europa.eu/eli/reg_impl/2026/718/oj).

⁽¹⁰⁾ This is without prejudice to the obligations arising from other legislation. For instance, for heat pumps, contracting authorities and contracting entities are already obliged to procure only the two highest energy performance classes (see Article 7 of Directive (EU) 2023/1791). For batteries, environmental sustainability requirements will be set in accordance with the Batteries Regulation (Regulation (EU) 2024/1781).

If both the size of the potential tenderers and suppliers and the value of the net-zero technology in the contract are comparable to project sizes under renewable energy auctions, contracting authorities and contracting entities are encouraged to align the special condition under Article 25(3) as far as possible with the respective pre-qualification criterion for NZIA auctions (see NZIA Article 26). This concerns the social and human rights-related aspects of the pre-qualification criterion on responsible business conduct in auctions, which are laid out further in Article 4 of the NZIA Implementing Act ⁽¹¹⁾. When aligning the special condition with the pre-qualification criterion, contracting authorities and contracting entities should ensure that the condition's requirements relate to the subject matter of the contract and do not go beyond it. This means that any due diligence and disclosure requirements need to be focused on the operations or supply chains linked to the product, work or service provided.

Examples of special conditions in public procurement related to social or employment-related considerations:

- The contractor commits to X hours of work for professional training programmes (e.g. apprenticeships) as well as Y hours for social inclusion programmes (e.g. professional reintegration for the performance of this contract).
- In performing its obligations under the contract, the contractor takes action to address the core aspects of social and human rights due diligence as set out in Article 5(1)(a) to (g) of Directive (EU) 2024/1760 on corporate sustainability due diligence.

2. *The requirement to demonstrate cybersecurity compliance*

Article 25(3)(b) of the NZIA provides for a requirement to demonstrate compliance with applicable cybersecurity requirements. It specifically refers to the Cyber Resilience Act ⁽¹²⁾ which will apply fully from 11 December 2027. Before that date, contracting authorities and contracting entities should require tenderers to demonstrate compliance with applicable cybersecurity requirements in national and European legislation.

Cybersecurity is one of the requirements of Article 26 for auctions (see Article 5 of Implementing Regulation (EU) 2025/1176). National authorities are encouraged to follow the specifications laid down in Article 5 of the Implementing Regulation ⁽¹³⁾ of Article 26 where possible.

3. *The specific contractual obligation to deliver on time*

The obligation to deliver on time should relate specifically to the component of the contract relating to the net-zero technologies. It should require all aspects relating to the net-zero technologies to be delivered on time, including, where relevant, planning, purchase, installation and commissioning. It does not have to apply to the other components of the contract.

Similarly to the other additional non-price criteria, contracting authorities and contracting entities are encouraged to align the special condition with the pre-qualification criterion on delivery on time of Article 26 of NZIA. Article 6 of the Implementing Act ⁽¹⁴⁾ gives examples of relevant pre-qualification requirements.

⁽¹¹⁾ Commission Implementing Regulation (EU) 2025/1176 of 23 May 2025 specifying the pre-qualification and award criteria for auctions for the deployment of energy from renewable sources (OJ L, 2025/1176, 18.6.2025, ELI: http://data.europa.eu/eli/reg_impl/2025/1176/oj).

⁽¹²⁾ Regulation (EU) 2024/2847 of the European Parliament and of the Council of 23 October 2024 on horizontal cybersecurity requirements for products with digital elements and amending Regulations (EU) No 168/2013 and (EU) 2019/1020 and Directive (EU) 2020/1828 (Cyber Resilience Act) (OJ L, 2024/2847, 20.11.2024, ELI: <http://data.europa.eu/eli/reg/2024/2847/oj>).

⁽¹³⁾ Commission Implementing Regulation (EU) 2025/1176 of 23 May 2025 specifying the pre-qualification and award criteria for auctions for the deployment of energy from renewable sources (OJ L, 2025/1176, 18.6.2025, ELI: http://data.europa.eu/eli/reg_impl/2025/1176/oj).

⁽¹⁴⁾ Commission Implementing Regulation (EU) 2025/1176 of 23 May 2025 specifying the pre-qualification and award criteria for auctions for the deployment of energy from renewable sources (OJ L, 2025/1176, 18.6.2025, ELI: http://data.europa.eu/eli/reg_impl/2025/1176/oj).

Example of a contractual obligation to deliver on time:

The duration of preparation and execution of the works related to the installation of the PV modules is to be up to four months from the start date specified in the procurement document. If the completion deadline specified in the contract is exceeded, the contractor will be liable for a penalty of EUR XXX per calendar day of delay. After a delay of eight days, an increased penalty of EUR YYY will apply.

C. The resilience requirements (Article 25(7) of the NZIA)

1. When shall the resilience contribution be taken into account?

The resilience requirement enshrined in Article 25(7) applies only to the net-zero technology final product and its main specific components for which the EU has a high supply dependency on a non-EU country. The main specific components of net-zero technologies are listed in Implementing Regulation (EU) 2025/1178 of 23 May 2025 on laying down rules for the application of Regulation (EU) 2024/1735 of the European Parliament and of the Council as regards the list of net-zero technology final products and their main specific components for the purposes of assessing the contribution to resilience ⁽¹³⁾.

Article 25(7) defines high supply dependency. Two situations are included:

- (1) More than 50 % of the EU supply of a net-zero technology final product or main specific component comes from a single non-EU country; OR
- (2) More than 40 % of the EU supply of a net-zero technology final product or main specific component comes from a single non-EU country, AND this share has increased on average by at least 10 percentage points in two consecutive years.

Figure 1

When to take into account the tender's resilience contribution

Net-zero technology final product or its main specific component according to (EU) 2025/1178		High dependency according to C/2025/3236 or the following updated Communications		Application of resilience
				
				
		N/A		

For the purposes of this guidance, any non-EU country fulfilling one of the two conditions laid down in Article 25(7), second subparagraph, is defined as a 'dominant source of supply'.

⁽¹³⁾ Commission Implementing Regulation (EU) 2025/1178 of 23 May 2025 on laying down rules for the application of Regulation (EU) 2024/1735 of the European Parliament and of the Council as regards the list of net-zero technology final products and their main specific components for the purposes of assessing the contribution to resilience (OJ L, 2025/1178, 18.6.2025, ELI: http://data.europa.eu/eli/reg_impl/2025/1178/oj).

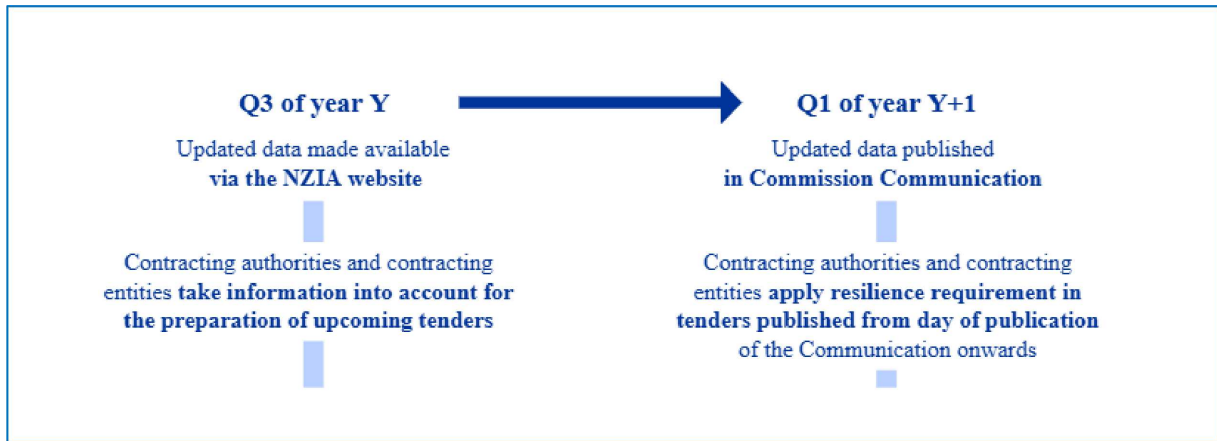
The shares of the EU's supply of net-zero technology final products and their main specific components originating in different non-EU countries is provided by the Commission annually through a dedicated Communication, in accordance with Article 29(2) of the NZIA. The first Communication on net-zero technology dependencies has already been published⁽¹⁶⁾ and is applicable as of 30 December 2025. High dependencies are highlighted in bold and with colour in Table 1 of the Communication. Contracting authorities and contracting entities must consult the Communication on net-zero technology dependencies and are not to calculate the supply dependencies themselves.

The Communication will be updated on a yearly basis. It may not always provide dependency data for all main specific components. The Commission is working with urgency to establish the basis for measuring dependencies across all such components. Additional data will therefore be added gradually in future updates. For any net-zero technology final product or main specific component that does not appear in the Communication, it can be assumed that there is no high dependency.

In order to give contracting authorities and contracting entities time to adapt to the updated information on the share of the EU supply and dependencies from different countries, a table with the updated data will be made available via the NZIA website approximately six months in advance of the publication of the updated Communication. The table will be updated in the third quarter of each year, and the updated Communication itself will be published in the first quarter of the following year. Please note that the data made available via the NZIA website is for indicative purposes, and only the Communication is to be used to assess supply dependency in relation to Article 25(7), second subparagraph.

Figure 2

Lead time for the resilience requirement



2. Applying the resilience requirements

The application of the resilience requirements is triggered when the Commission Communication on net-zero dependencies has determined that there is high dependency for a net-zero technology final product and / or one of its main specific components.

Article 25(7)(a) and (b) of the NZIA describe the core requirements on resilience:

- Paragraph 7(a) provides that not more than 50 % of the value of the net-zero technology final product should originate from the dominant source of supply.

This means that no more than half of the total cost of the final product to the contracting authority or contracting entity can originate from the dominant source of supply. For instance, in the case of rooftop solar PV systems, the contract can only allocate up to 50 % of the total cost of the solar PV systems to systems supplied from the dominant source of supply.

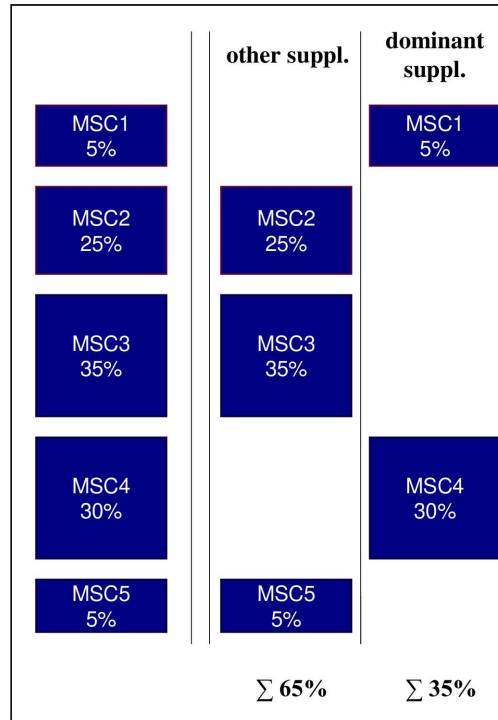
⁽¹⁶⁾ Communication from the Commission providing updated information to determine the shares of the European Union supply of final products and their main specific components originating in different third countries under Regulation (EU) 2024/1735 on establishing a framework of measures for strengthening Europe's net-zero technology manufacturing ecosystem (Net-Zero Industry Act) (OJ C, C/2025/3236, 18.6.2025, ELI: <http://data.europa.eu/eli/C/2025/3236/oj>).

This calculation applies to the cost to the contracting authority and contracting entity of the supply of the net-zero technology final product. It is not calculated as the sum of the costs of the main specific components.

- Paragraph 7(b) provides that not more than 50 % of the value of the main specific components should originate from the dominant source of supply.

The requirement of paragraph 7(b) applies to the aggregate value of all main specific components, not to each individual component. To calculate the share originating from the dominant source of supply, two pieces of information are necessary: (1) the origin of each main specific component (see section III.C.3), and (2) the value share of each main specific component (see section III.C.4). The total value of all main specific components originating from the dominant source of supply may not exceed 50 % of the overall value. The choice of components should be left to the tenderer (and not to the contracting authorities or contracting entities). This ensures sufficient competition among component suppliers and enables tenderers to make the most cost-efficient choices while applying the requirements.

Figure 3

Applying Art 25(7)(b)

The simplified example in Figure 3 illustrates this: this net-zero technology consists of five main specific components. The tenderer intends to use a net-zero product which includes two main specific components originating from the dominant source of supply (labelled 'MSC1' and 'MSC4'). The assembly and the components together account for 35 % of the value of all main specific components. In this example, the main specific components would comply with paragraph 7(b).

The resilience requirement applies to the specific net-zero technologies delivered under the procurement, not to the supplier's overall or average sourcing across its production.

Two different countries may fulfil the conditions to be a dominant source of supply – when one country is dominant for one component and another country is dominant for another. In this case, the resilience requirement is applied to each one separately. Note that on the date of publication of this guidance, this scenario is hypothetical.

3. *Determination and verification of the origin of net-zero technology final products and main specific components*

To apply Article 25(7) of the NZIA, tenderers, contracting authorities and contracting entities need to know the origin of the net-zero technology final product and of its main specific components. The origin of a net-zero technology final product and its main specific components should be determined in accordance with the non-preferential rules of origin based on Regulation (EU) No 952/2013 of the European Parliament and of the Council⁽¹⁷⁾ (the Union Customs Code). This Regulation establishes the rules and procedures for customs operations within the EU, which includes the concept of rules of origin to identify the place of origin of a product. The non-preferential rules of origin are based on a product's HS heading. For technologies currently subject to the resilience requirement, Annex II gives an overview of the relevant HS headings. The non-preferential rules of origin are listed in the European Commission's 'Table of list rules conferring non-preferential origin on products (following the classification in the CN)'⁽¹⁸⁾.

As regards proof of origin, in accordance with the Union Customs Code, the principle of free evidence applies. Thus a wide range of documents and evidence can be used to prove the origin of a net-zero technology final product or main specific component. Contracting authorities and contracting entities may therefore request any documents providing reliable information linking the products with their place of manufacturing or assembly. These documents could include invoices, product ID, serial numbers or codes, name plates, certificates of origin, bills of lading and other transport documents, bills of material, factory inspection certificates or manufacturing execution systems.

While the Union Customs Code only applies to products that are imported into the EU, the same documentation can be used by analogy for net-zero technology final products and main specific components which have not been subject to the Union Customs Code. This includes final products and main specific components manufactured in the EU or imported as part of a broader product. In the latter case, customs documentation would provide proof of origin of the broader product, but not of the specific components embedded in it.

In addition to documentary evidence, contracting authorities and contracting entities should progressively rely on digital traceability systems enabling verification of origin and supply chains in a secure and interoperable manner. This could in the future also include Digital Product Passports. If the contractor states that some of its products or main specific components come from the dominant source of supply, no proof of origin should be requested by the contracting authority or contracting entity for these products or main specific components.

If the contractor does not produce any relevant documents demonstrating the origin or place of assembly of a product or main specific component, the contracting authority or contracting entity should assume that those products or main specific components originate or are assembled in a country from which the EU has a high dependency.

To reduce administration for contracting authorities and contracting entities, the Commission encourages Member States to create 'whitelists' of net-zero technology products that comply with the resilience requirements.

4. *Measuring the value of the main specific components*

To apply Article 25(7)(b) of the NZIA, tenderers, contracting authorities and contracting entities need to know the value share of each main specific component towards the final product. To do this, tenderers can either use the reference value shares provided in Annex I to this guidance document or demonstrate the actual value shares of the main specific components using appropriate supporting documents.

⁽¹⁷⁾ Regulation (EU) No 952/2013 of the European Parliament and of the Council of 9 October 2013 laying down the Union Customs Code (OJ L 269, 10.10.2013, p. 1, ELI: <http://data.europa.eu/eli/reg/2013/952/oj>).

⁽¹⁸⁾ European Commission, Table of list rules conferring non-preferential origin on products (following the classification in the CN), https://taxation-customs.ec.europa.eu/table-list-rules-conferring-non-preferential-origin-products-following-classification-cn_en.

Reference values

Tenderers can use reference values to simplify the application of the resilience requirement. Annex I to this guidance document provides reference value shares for the main specific components of the most relevant net-zero technologies in the context of public procurement. The value shares are based on estimations by the European Commission's Joint Research Centre (JRC). They reflect the added value of the main specific components ⁽¹⁹⁾.

Reference values are only provided for net-zero technologies for which there is a supply dependency ⁽²⁰⁾ at the time of publication of this guidance. This guidance may be updated to provide reference values for additional net-zero technologies if necessary, e.g. when supply dependencies arise for further technologies. The reference values may also be updated to reflect changing market conditions.

Actual values

The reference value shares provided in Annex I might not reflect the actual value of a main specific component. Therefore, tenderers should have the opportunity to determine the value shares of their main specific components and to use those value shares when applying the resilience requirement of Article 25(7)(b) of the NZIA. When doing so, tenderers should be able to demonstrate to the contracting authorities or contracting entities how they calculate the value share of the components.

To determine and demonstrate value shares that deviate from those in Annex I, or for the procurement of technologies that are not listed in Annex I, the following principles should be respected:

- the value shares of all main specific components add up to 100 %;
- each individual share represents the relative added value of the manufacturing of the main specific component concerned;
- appropriate documentation of purchase prices and the origin of the components must be provided, such as described in section III.C.3;
- values of main specific components should be calculated to include anti-dumping duties, anti-subsidy duties and tariffs.

Where an invoice is issued in another currency, the value must be converted into EUR on the basis of the EUR exchange rate valid at the moment of purchase.

5. Complying with the resilience requirements throughout the procurement process

As for all other requirements, conditions and contractual obligations of Article 25, tenderers must commit to comply with the resilience requirements at the time of submitting the tender, for example through a self-declaration. Actual compliance can be demonstrated at a later point in time.

Contracting authorities and contracting entities have the discretion to decide when they will check actual compliance with the requirements. This may be at different points throughout the lifetime of the project. Equally, it is at their discretion to determine what documents may be used to adequately demonstrate compliance.

⁽¹⁹⁾ The added value of components other than main specific components is disregarded in those estimations. Therefore, the value shares might be bigger than the main specific components' added value when taking into account all the other components and steps of the value chain.

⁽²⁰⁾ According to the Communication from the Commission providing updated information to determine the shares of the European Union supply of final products and their main specific components originating in different third countries under Regulation (EU) 2024/1735 on establishing a framework of measures for strengthening Europe's net-zero technology manufacturing ecosystem (Net-Zero Industry Act); OJ C, C/2025/3236, 18.6.2025, ELI: <http://data.europa.eu/eli/C/2025/3236/oj>.

In setting the requirements to demonstrate compliance with resilience, it is important that contracting authorities and contracting entities take into account the lead time for determining the supplier of the net-zero technology element of the contract: the contractor will not be able to provide evidence before the project stage where the suppliers are chosen.

6. *Determining the proportionate charge (Article 25(7)(d) of the NZIA)*

A tender including resilience obligations will be awarded to the best bid among those that comply with the resilience obligations and other requirements. Where, at a later stage, a winning tenderer is not able to provide contracting authorities and contracting entities with adequate evidence to prove compliance with Article 25(7)(a) and (b), the contracting authorities and contracting entities shall require the winning tenderer to pay a proportionate charge of at least 10 % of the value of the specific net-zero technology final products of the contract – not the overall contract value. The charge of at least 10 % must be applied to the full value of the net-zero final product if the tenderer cannot demonstrate full compliance with the requirements – also in the case when only a part of the net-zero technology is non-compliant.

Example: a contracting authority or contracting entity launches a public works contract for the supply and installation of PV modules. Before the launch of the procurement procedure, the Commission determines that country X is a dominant source of supply of PV modules, and that the procurement procedure must apply the resilience requirements under Article 25(7). During contract performance, the contracting authority or contracting entity requests evidence of compliance under Article 25(7)(c). The contractor provides relevant proof that it procured the PV modules outside of country X, but only for 30 % of the total value of the PV modules procured. Under Article 25(7)(d), the contractor must pay a proportionate charge of at least 10 % of the value of all PV modules supplied under the contract.

Contracting authorities and contracting entities should make sure that the value of the net-zero technology final products in the contract is not abnormally low. The proportionate charge must refer to the value of the net-zero technology final products reflecting market conditions. For example, a works contract for construction work includes the installation of solar panels. The panels are priced 50 % below market price. The necessary evidence for complying with the resilience requirements cannot be provided. The appropriate charge must refer to a value share of the solar PV system at market value, not at the low price indicated in the works contract.

As regards the proportionate charge, it should be sufficiently high to deter tendering strategies involving deliberate non-compliance with the resilience requirement, which can only be verified in retrospect. The charge can take the form of a lump-sum penalty, or other forms as appropriate.

IV. EXCEPTIONS

Article 25(9) and Article 25(11) allow contracting authorities and contracting entities to decide, in some exceptional cases, not to apply the sustainability and resilience criteria in some exceptional cases.

In accordance with Article 25(9), contracting authorities and contracting entities may decide, when publishing the call or commencing the procedure, not to apply the environmental sustainability requirements set out in Article 25(1) and the additional requirements in Article 25(3) in the following cases:

- where, following an objective and transparent evaluation, only one economic operator would be able to supply the technology (Article 25(9)(a));
- where a similar previous procedure did not result in suitable tenders or requests to participate (Article 25(9)(b)); or
- where the cost differences between compliant and non-compliant offers would be disproportionate (Article 25(9)(c)).

With regard to the resilience criteria laid down in Article 25(7), the system of exceptions differs. Article 25(8) provides for an automatic and mandatory exception where this is required by international agreements. Article 25(11) sets out a more limited, ex post exception: contracting authorities and contracting entities may decide not to apply the resilience requirements only where the inclusion of those requirements has resulted in no suitable tenders or requests to participate in the same procedure.

Ground for exception ✓- possible ground; ×- not a possible ground	Environmental sustainability requirements (Article 25(1))	Additional requirements (Article 25(3))	Resilience requirements (Article 25(7))
Single supplier	✓ Article 25(9)(a)	✓ Article 25(9)(a)	×
No suitable tenders	✓ — in response to a similar former procedure Article 25(9)(b)	✓ — in response to a similar former procedure Article 25(9)(b)	✓ — in response to the same procedure Article 25(11)
Disproportionate costs or technical incompatibility	✓ Article 25(9)(c)	✓ Article 25(9)(c)	×
International agreements (e.g. GPA)	×	×	✓ Article 25(8)

A. The single supplier (Article 25(9)(a) of the NZIA)

The exception of Article 25(9)(a) of the NZIA refers to a monopoly situation in which the net-zero technology can only be supplied by a specific economic operator, and no reasonable alternative or substitute exists. If contracting authorities and contracting entities conduct a preliminary market analysis and/or preliminary market consultations and find, after conducting an objective and transparent evaluation, that such a monopoly situation exists, they may decide not to apply the requirements of Article 25(1) and (3). Moreover, the absence of competition must not be the result of artificially restricting the parameters of the public procurement procedure. Contracting authorities and contracting entities may not manipulate technical specifications or requirements to exclude competition. Rather, the exception is strictly limited to unavoidable situations of technological exclusivity.

The exception should be applied in a transparent way, following the principles set out in EU public procurement law. The contracting authorities and contracting entities should be able to demonstrate that no reasonable alternative supplier or substitute exists, and that the absence of competitive offers is not the result of self-imposed or unnecessary constraints within the given procurement process involving the net-zero technology.

B. No suitable tender or request to participate (Article 25(9)(b) and Article 25(11) of the NZIA)

For the environmental sustainability requirements and the additional requirements, the exception of Article 25(9)(b) allows contracting authorities and contracting entities not to apply the requirements of Article 25(1) and (3) when no suitable tenders or requests to participate have been submitted in response to a similar former public procurement procedure launched by the same contracting authority or contracting entity in the two years immediately before the start of the planned new procurement procedure.

Directive 2014/24/EU further clarifies when a tender or a request to participate should be considered as 'not suitable'. It provides that:

'A tender shall be considered not to be suitable where it is irrelevant to the contract, being manifestly incapable, without substantial changes, of meeting the contracting authority's needs and requirements as specified in the procurement documents. A request for participation shall be considered not to be suitable where the economic operator concerned is to be or may be excluded pursuant to Article 57 or does not meet the selection criteria set out by the contracting authority pursuant to Article 58.' ⁽²¹⁾

It should be highlighted that a tender or a request to participate cannot be considered as 'not suitable' when its price exceeds the contracting authority's or contracting entity's budget as determined and documented prior to the launch of the procurement procedure.

For the resilience requirements, Article 25(11) can only be used when a public procurement procedure including the resilience requirements has been launched and has failed to trigger suitable tenders or suitable requests to participate. It cannot be applied based on a similar former public procurement procedure which triggered no suitable tender or no suitable request to participate, nor based on a preliminary market analysis that reveals that no suitable tender or request to participate will be submitted if a public procurement procedure including the resilience requirements is launched.

When that condition is fulfilled, contracting authorities and contracting entities can choose from two options:

- **Negotiated procedure without prior publication.** If contracting authorities and contracting entities choose to use the negotiated procedure, they are not allowed to change any of the tender specifications / minimum requirements, including the resilience requirements. However, they will be able to negotiate the other aspects of the contract.
- **Not applying the resilience requirements.** Contracting authorities and contracting entities can also choose to launch a new public procurement procedure which aims to address the same needs as the initial procedure, but without applying the resilience requirements. In this case, contracting authorities and contracting entities have more flexibility to modify the tender specifications from the initial public procurement procedure.

C. Disproportionate cost differences (Article 25(9)(c) and Article 25(10) of the NZIA)

According to Article 25(9)(c) and Article 25(10) of the NZIA, when the estimated price difference from applying the sustainability requirement (Article 25(1)) and the additional requirement (Article 25(3)) is higher than 20 %, the contracting authority or contracting entity can decide not to include those two requirements into the public procurement procedure.

The 20 % estimated price difference should refer to the cost of the net-zero technology element in the procurement contract, not to the value of the overall contract. The value of procurement should be estimated in line with Article 5 of Directive 2014/24/EU, where applicable.

The disproportionate cost has to be assessed by the contracting authority or contracting entity before the start of the public procurement procedure. It is demonstrated only if the contracting authority or contracting entity provides objective and verifiable data showing that, all else being equal, the cost difference between a public procurement procedure carried out using those non-price criteria and a public procurement procedure without those non-price criteria would be above 20 %. Objective and verifiable data means data based on market analysis showing how the application of the criteria would increase the cost of bidding projects compared to a counterfactual cost analysis in which the non-price criteria of Article 25 were not applied. The cost of the most recent public procurement procedures could be used as a reference. Data must be verifiable, in the sense that stakeholders need to be informed about the analysis carried out by the contracting authority or contracting entity.

⁽²¹⁾ Article 32(2), point (a), second subparagraph, of Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC (OJ L 94, 28.3.2014, p. 65, ELI: <http://data.europa.eu/eli/dir/2014/24/oj>).

Since contracting authorities and contracting entities enjoy a certain degree of flexibility in the application of the non-price criteria – including, for instance, the possibility to select from the different additional non-price criteria of Article 25(3), or to apply an additional non-price requirement in relation to environmental sustainability as laid out in Article 25(2) – the estimate of the cost difference has to be based on criteria with the lowest possible impact on costs. If the criteria set at this lowest level lead to estimated cost differences above 20 %, the contracting authority or contracting entity may decide not to apply the non-price criteria of Article 25(1) to (4).

D. **International agreements (Article 25(8) of the NZIA)**

The exception of Article 25(8) of the NZIA covers a scenario in which the dominant source of supply is party to international agreements on public procurement. It provides that the resilience requirements should not apply to net-zero technologies for which the dominant source of supply is bound by the Government Procurement Agreement (GPA) or other relevant international agreements by which the EU is also bound, if the public procurement procedure is covered by Annex I to the GPA or by another relevant international agreement ⁽²²⁾. This exception refers to the origin of the products, not to the place of incorporation of the supplier.

If we take the example of a public procurement procedure by an EU contracting authority for the purchase of a solar PV installation, the procedure will be covered by Annex I to the GPA (condition 1 is fulfilled). The Communication on the shares of the EU supply identifies high dependency (> 50 %) on country X for the supply of solar PV systems (Article 25(7) needs to be applied).

- Assume country X is party to a relevant international agreement regulating public procurement. The resilience requirements therefore do not need to be applied to final products and components originating in country X.
- Assume country X is not party to a relevant international agreement regulating public procurement. The resilience requirements therefore must be applied to final products and components originating in country X.

⁽²²⁾ Appendix I of the GPA contains Annexes 1 to 5, further information can be found here: https://www.wto.org/english/tratop_e/gproc_e/gp_app_agree_e.htm. The European Commission's 'procurement for buyers' tool can be helpful in determining whether a procedure is covered: <https://webgate.ec.europa.eu/procurementbuyers/#/procurementlocation>.

ANNEX I

REFERENCE VALUES FOR DETERMINING THE SHARE OF ADDED VALUE OF MAIN SPECIFIC COMPONENTS OF THE NET-ZERO TECHNOLOGY FINAL PRODUCT

Solar technologies

Final products	Main specific components	% of final product hardware costs
Sub-category: Photovoltaic technologies		
Solar PV systems (module, fixed mounting system, inverter)	PV grade polysilicon	7,2
	PV grade silicon ingots or equivalent	6,4
	PV wafers or equivalent	9,5
	PV cells or equivalent	20,4
	Solar glass	9,5
	PV modules	26,6
	PV inverters	20,4

Onshore wind and offshore renewable technologies

Final products	Main specific components	% of final product hardware costs
Sub-category: Onshore wind technologies		
Onshore wind turbines	Nacelles (assembly)	8,4
	Rotor hubs	2,4
	Main, yaw and pitch bearings	5,9
	Direct drive drivetrains (including generator) and/or gearbox drivetrains (including generator)	12,9
	Permanent magnets of wind turbines	1,2
	Gearboxes of wind turbines	8,4
	Blades	31,0
	Towers	29,8
Offshore wind turbines (without gearbox)	Nacelles (assembly)	5,8
	Rotor hubs	3,5
	Main, yaw and pitch bearings	5,8
	Direct drive drivetrains (including generator) and/or gearbox drivetrains (including generator)	15,0
	Permanent magnets of wind turbines	7,0
	Blades	15,2
	Towers	8,1
	Foundations / floaters (for offshore wind)	39,6

Final products	Main specific components	% of final product hardware costs
Sub-category: Onshore wind technologies		
Offshore wind turbines (with gearbox)	Nacelles (assembly)	5,7
	Rotor hubs	3,4
	Main, yaw and pitch bearings	5,7
	Direct drive drivetrains (including generator) and/or gearbox drivetrains (including generator)	14,6
	Permanent magnets of wind turbines	1,1
	Gearboxes of wind turbines	7,8
	Blades	14,9
	Towers	8,0
	Foundations / floaters (for offshore wind)	38,8

Battery and energy storage technologies

Final products	Main specific components	% of final product hardware costs
Sub-category: Battery technologies		
Batteries	Battery packs	10
	Battery modules	10
	Battery cells	14
	Cathode active materials	27
	Anode active materials	7
	Electrolytes	8
	Separators	8
	Current collectors (including thin copper and aluminium foils)	6
	Battery management systems (BMS)	5
	Battery thermal management systems (BTMS)	5

ANNEX II

HS HEADINGS ASSOCIATED WITH NET-ZERO TECHNOLOGY FINAL PRODUCTS AND MAIN SPECIFIC COMPONENTS

Net-zero technology final product	Components	HS heading
Solar PV systems	PV grade polysilicon	2804
	PV grade silicon ingots or equivalent	2804
	PV wafers or equivalent	3818
	PV cells or equivalent	ex3541(a)
	Solar glass	7005
		ex7006(b)
		7007
	PV modules	ex8541(a)
	PV inverters	8504
	PV trackers and their specific mounting structures	8479
Solar thermal systems	Solar thermal collectors (including flat-plate, evacuated tube, concentrating systems and air collectors)	8419
	Solar thermal absorbers	8419
	Solar glass	7005
		ex7006(b)
		7007
	Solar thermal trackers and their specific mounting structures	8479
Onshore wind technologies and offshore wind technologies	Nacelles (assembly)	8501
	Rotor hubs	8412
	Main, yaw and pitch bearings	8482
	Direct drive drivetrains (including generator) and/ or gearbox drivetrains (including generator)	8501
	Permanent magnets of wind turbines	8505
	Gearboxes of wind turbines	8483
	Blades	8412
	Towers	7308
	Foundations/ floaters (only offshore)	7308

Net-zero technology final product	Components	HS heading
Batteries	Battery packs	8507
	Battery modules	8507
	Battery cells	8507
	Cathode active materials	2842
		2841
	Anode active materials	3801 10
	Electrolytes	2826
	Separators	8507
	Current collectors (including thin copper, aluminium, nickel and carbon foils)	7410
		7607 11
		7607 19
		ex7506(a)
	Battery management systems (BMS)	8537