

Status quo of EU requirements for renewable hydrogen and its certification set-up

RENEWABLE ELECTRICITY

Hydro
Geothermal

H₂
H₂

Electrolyser

Hydrogen

H₂

Chemical industry

Chemicals

Cosmetics

H₂O

BIO

DAC

RENEWABLE CARBON

DEFOSSILISATION

NO FOSSIL CARBON

International PtX Hub

Gefördert durch:
Bundesministerium für Wirtschaft und Klimaschutz

IKI INTERNATIONALE KLIMASCHUTZ INITIATIVE

Durchgeführt von:
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

aufgrund eines Beschlusses des Deutschen Bundestages

Power-to-X Hub – Catalyzing Defossilisation Globally

Impact

Paris Climate Goals

&

Sustainable business and development opportunities



Sustainability



Market ramp-up



Knowledge



Partnerships

Goals and Opportunities

- Improving **regulatory frameworks** for sustainable PtX demand markets
- Actively shaping the **global PtX market** in the partner countries (“partnerships of equals”)
- Setting-up a PtX **dialogue and networking platform**
- Developing **project proposals** for business cases with **international financing**
- Establishing an international **knowledge and training platform** for PtX.
- **Exchange of experience** with national and international partners
- Developing **trading platforms**

Our partner countries

Developing countries and emerging economies can **sustainably develop their economies** by producing **Power-to-X fuels and chemicals**.

Especially countries with significant potentials for solar and wind power can **decrease their fossil fuel dependence** and **supply their own demand for fuels and chemicals**, with the additional potential to export Power-to-X products and high-quality materials such as green steel.

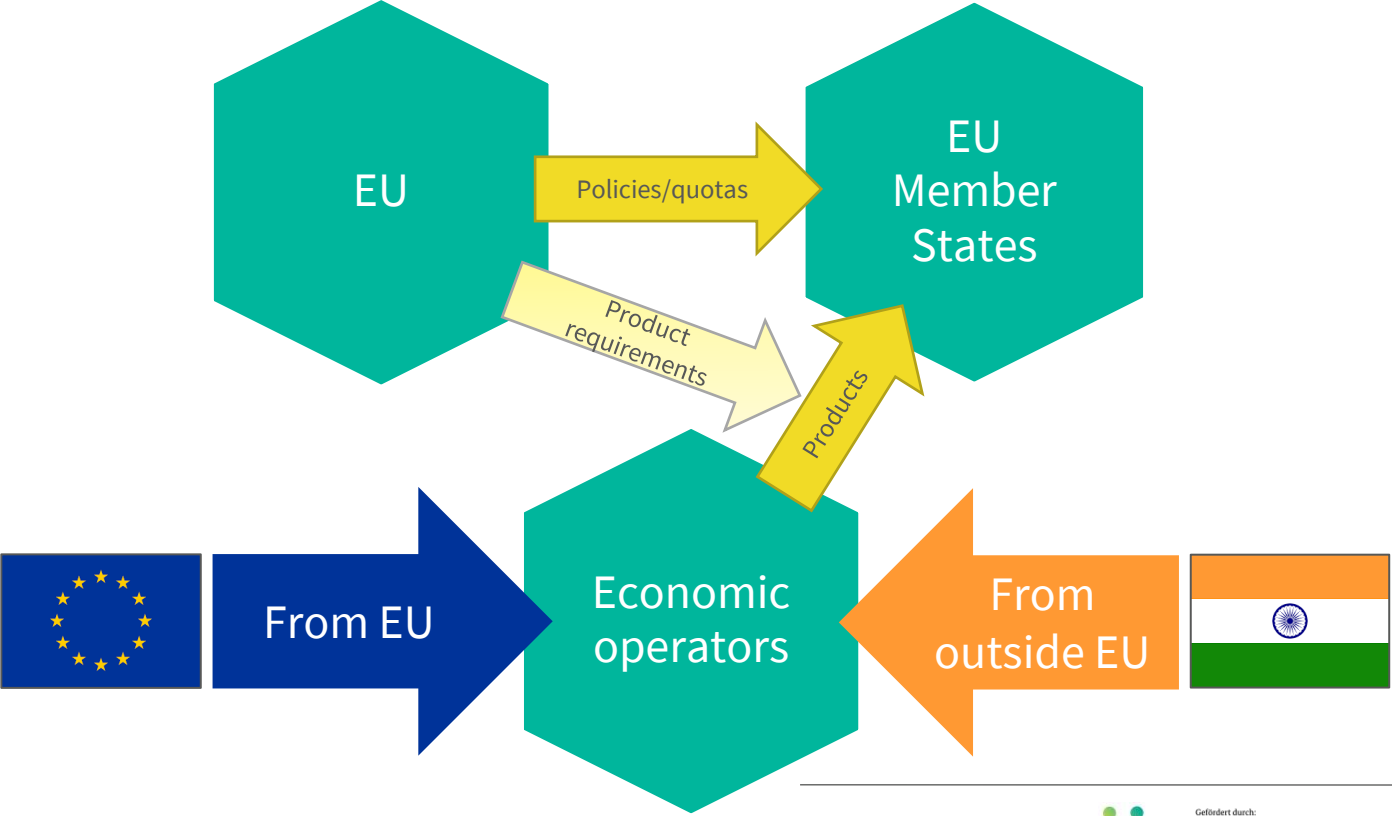


1. EU market – shaped by regulatory framework

2. Product requirements in the Delegated Acts

3. Certification procedure and status quo

EU market – shaped by regulatory framework



RED II Delegated Acts on renewable H2 / RFNBOs

Delegated Act to Article 27 Renewable Energy Directive II (RED II) sets out **detailed requirements for sourcing renewable electricity** used in production of Renewable Fuels of Non-Biological Origin (RFNBOs), including renewable hydrogen

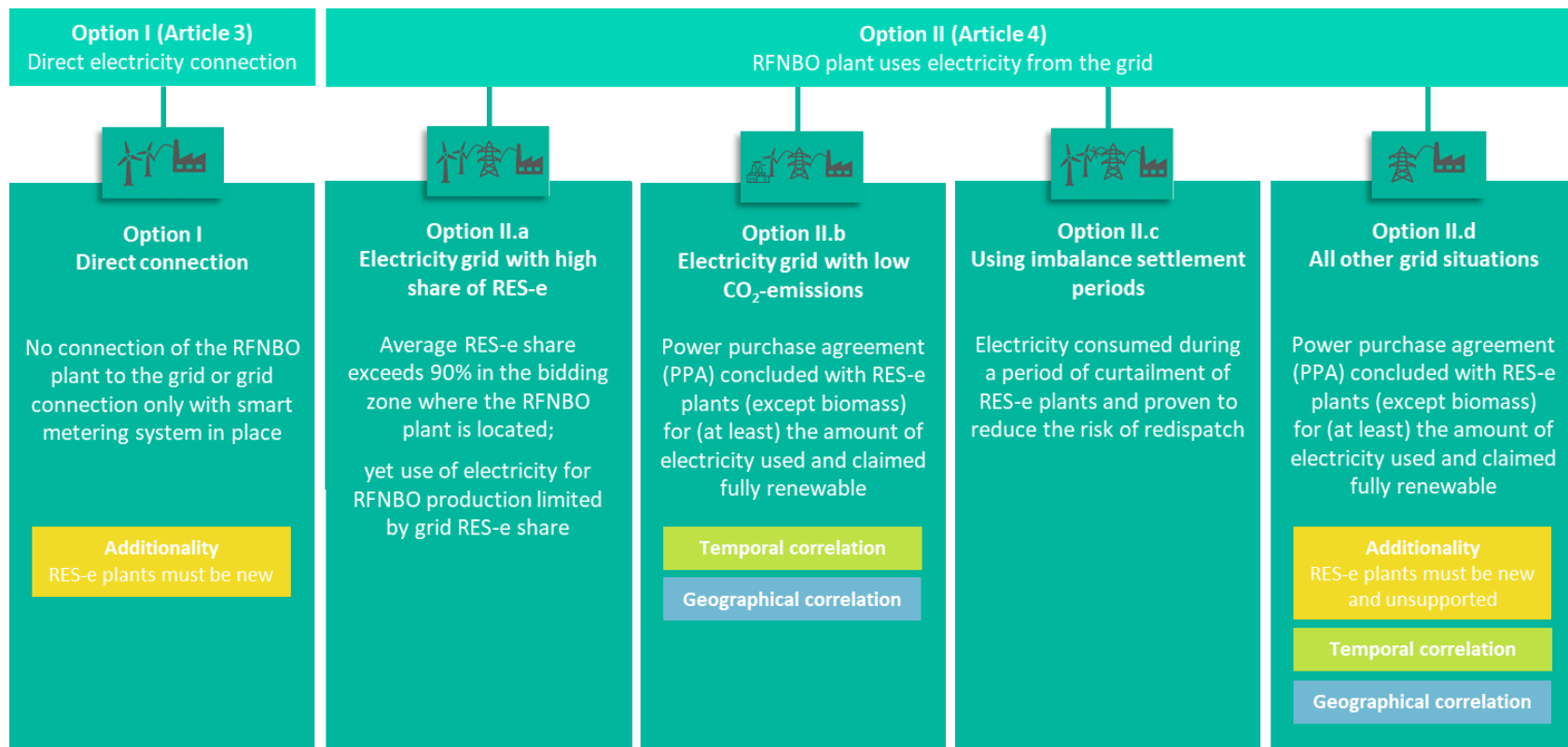
→ **Determines when electricity used for production of RFNBO/ H2 is considered as “fully renewable” or not**

Delegated Act to Article 28 RED II specifies the **methodology for assessing GHG emissions savings** from RFNBOs.

→ **Determines amount of GHG emissions savings from RFNBO / H2 (min. 70%)**

Applicable to EU-internal and outside. To be translated by voluntary schemes into their systems.

Electricity used for H2 / RFNBO counts as “fully renewable” if...



Additionality (Article 5)



RES-E used for H₂ production is

- Generated in the same installation
- **OR** Sourced *via* renewables PPAs

5(a) RES-E plants must be new*

Started operating no more than 36 months prior to the installation

5(b) RES-E plants must be unsupported*

Has not received operating or investment support

*For installations which started operating before January 2028 this requirement only applies from January 2038 on.

Temporal correlation (Article 6)



H₂ production takes place

- In the same calendar month than the sourced RES-E generation (*until Dec 2029*)
- In the same hour than sourced RES-E generation (*from Jan 2030 on*)

OR

Storage option

- Electricity is sourced from a storage facility with the same grid connection point than the electrolyser or RES-E plants
- Storage facility is charged at the time of generation of the contracted RES-E plants

OR

H₂ production takes place

- during a one-hour period where the day-ahead price of the concerned bidding zone
- Is < 20 €/MWh
- **OR** Is < than 0.36 times the price for a certificate of 1 ton of CO₂ equivalent

Geographical correlation* (Article 7)

7(1a) Electrolyser and RES-E plants are located in the same bidding zone

OR

7(1b) Electrolyser and RES-E plants are located in interconnected bidding zones

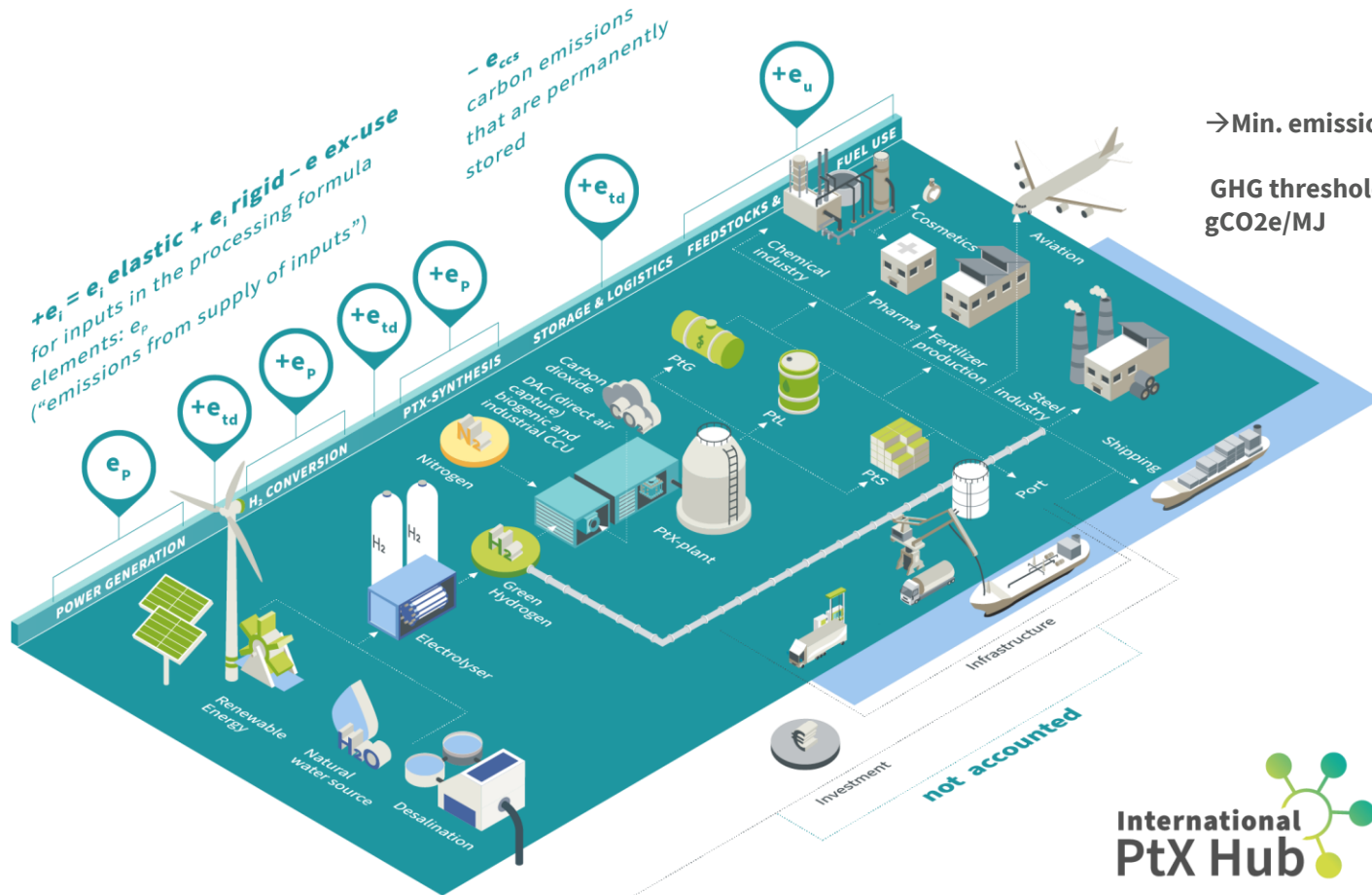
Electricity prices of the day-ahead market in this zone are \geq the prices in the electrolyser's bidding zone

OR

7(1c) RES-E generating plants are located in an offshore bidding zone interconnected to the electrolyser's bidding zone

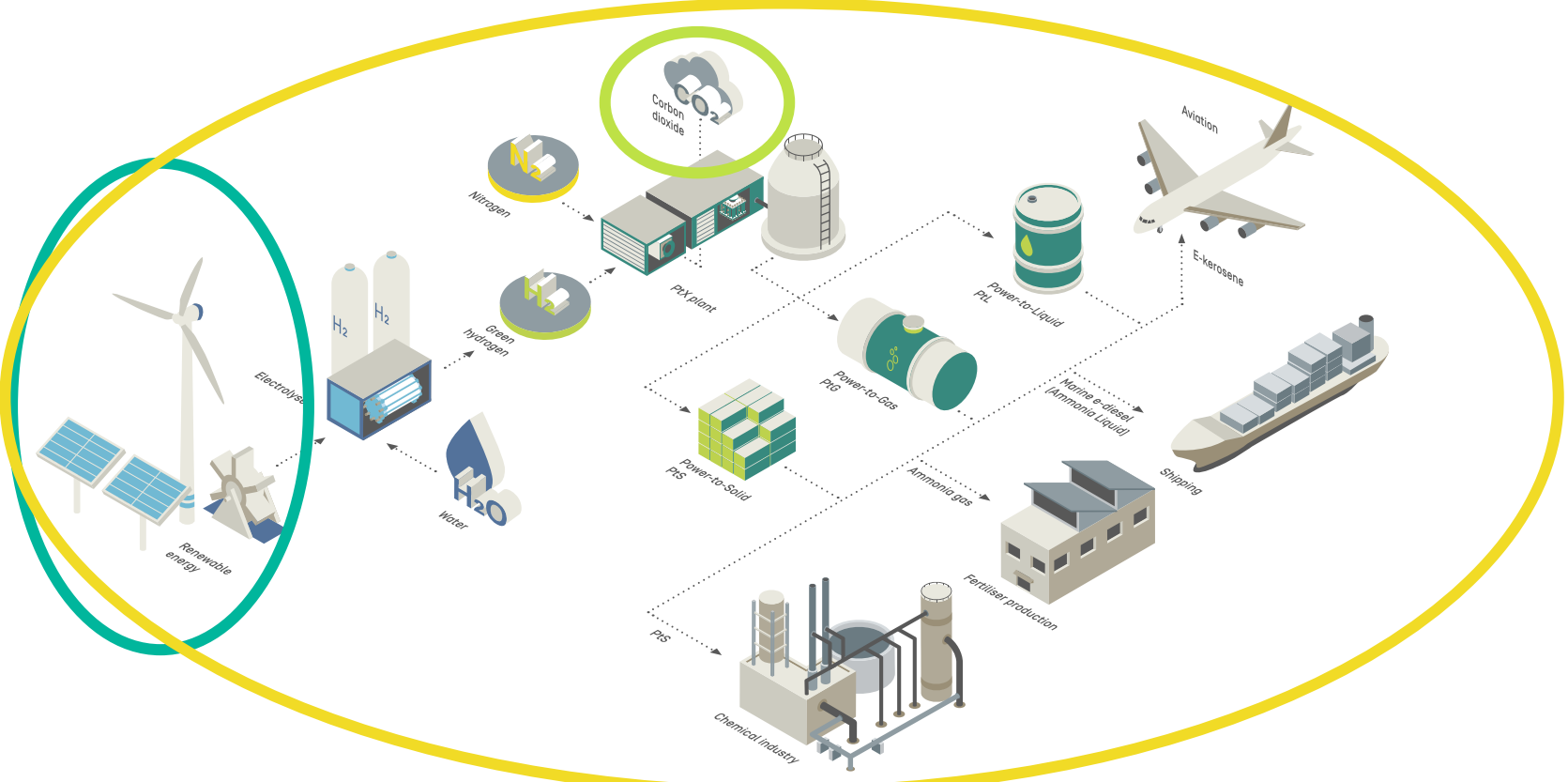
*Further criteria can be imposed on a national law basis (6(2)).

Methodology for determining GHG emissions savings from H2 / RFNBO



Sustainability criteria in the Delegated Act requirements

11.04.2023

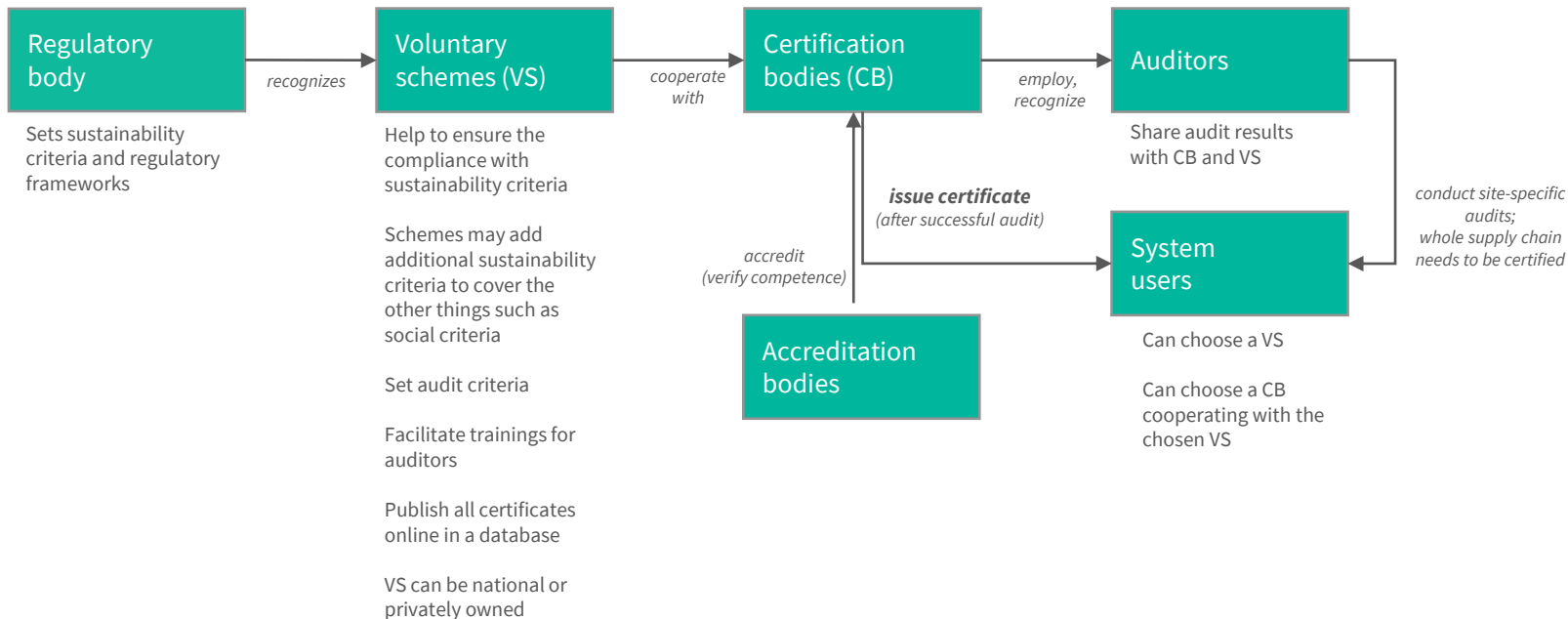


Renewable electricity sourcing

CO2 sources

GHG accounting

Certification set-up of biofuels in the EU – also applicable to hydrogen



Certification set-up: Voluntary Schemes (VS)

Main functions	Established by	Receive authority by	Additional functions	Cooperate with	Examples
<p>Set the certification framework</p> <p>Set audit criteria</p> <p>Practically apply regulatory requirements</p> <p>May add additional (sustainability) requirements</p>	<p>Private individuals and organizations</p> <p>Usually developed in a multistakeholder process</p>	<p>Recognition by European Commission</p>	<p>Facilitate trainings for auditors</p> <p>Manage (partly public) data base with the certificates and information on the audit results</p> <p>Set requirements for cooperation with certification bodies</p>	<p>Regulatory bodies</p> <p>Certification bodies/Auditors</p> <p>System users</p>	<p>ISCC</p> <p>RSB</p> <p>REDcert</p> <p>Potentially but not yet recognized under RED II: CertifHy, TÜV Süd, TÜV Rheinland, Green Hydrogen Standard</p>

Certification set-up: Certification Bodies

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Main functions	Established by	Receive authority by	Additional functions	Cooperate with	Examples
<p>Issue certificates</p> <p>Employ auditors</p>	Private individuals and organizations	<p>For working with a specific certification (voluntary) scheme: by the voluntary scheme</p> <p>For general “trustworthiness” and expertise: by accreditation bodies</p>	-	<p>Voluntary schemes</p> <p>Auditors</p> <p>System users</p> <p>Accreditation bodies</p>	Lists to be found on the websites of the voluntary schemes

Certification set-up: Auditors

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Main functions	Established by	Receive authority by	Additional functions	Cooperate with	Examples
Conduct audits	Usually employed by certification bodies	<p>Certification bodies</p> <p>Individual qualifications (participating in auditor trainings by the voluntary schemes)</p>	-	<p>Voluntary schemes</p> <p>Certification bodies</p> <p>System users</p>	-

Certification set-up: System users

Main functions	Established by	Receive authority by	Additional functions	Cooperate with	Examples
Seek certification and therefore initiate the whole process	Individuals, organizations etc. → companies	-	Can choose voluntary scheme and certification body	Voluntary schemes Certification bodies/Auditors	Any company producing goods that can be certified

Certification set-up: Accreditation bodies

Main functions	Established by	Receive authority by	Additional functions	Cooperate with	Examples
Verify competence of certification bodies	National authorities	National authorities (under EU regulation EU765/2008 each Member State must appoint one national accreditation body)	-	Certification bodies	Germany: DAkkS Spain: ENAC France: COFRAC

Thank you

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