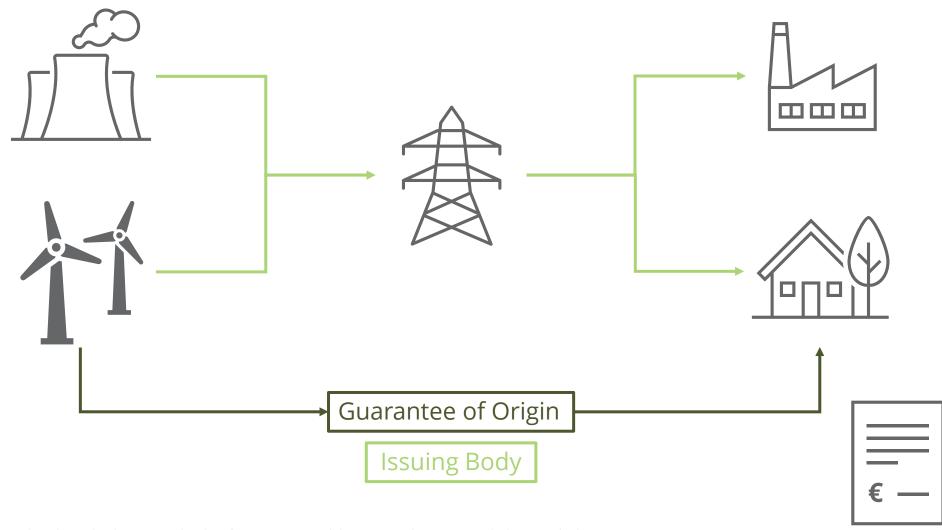


The Guarantee of Origin as an EECS Product

The principle for electricity



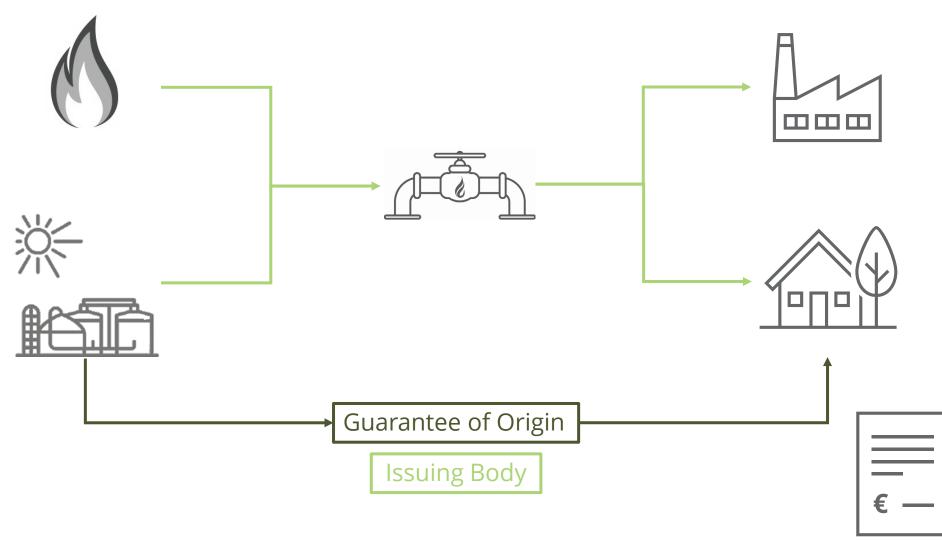
Guarantees of Origin



The principle for gas



Guarantees of Origin



Components to be managed in a reliable GO system



Guarantees of Origin



Account Holder Registration

- Prevent access of fraudulent actors
- Ensure rule-compliance contractually



Production Device Registration

- Verify plant data
- Ensure data maintenance and re-verification



GO Issuing

- Base isuing on verified meter readings
- Verify shares of energy origin in multi-fuel pants



GO Transfer

- Secure and electronic transfer independently from the pshyical energy or energy trading
- Non-mutability and uniqueness of certificate data



GO Cancellation

•GO as the sole instrument to disclose renewable energy to consumers



Disclosure

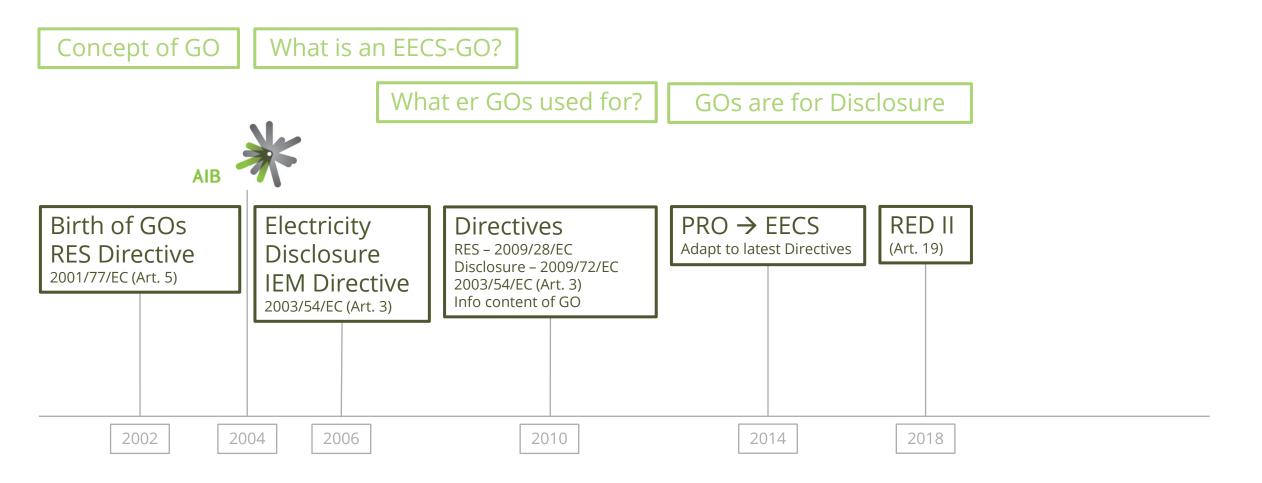
- Disclosure of the energy origin sold/consumed
- •Where applicable, calculation of the residual mix and obligation to use it for untracked energy

Competent Body

Timeline of legislation development



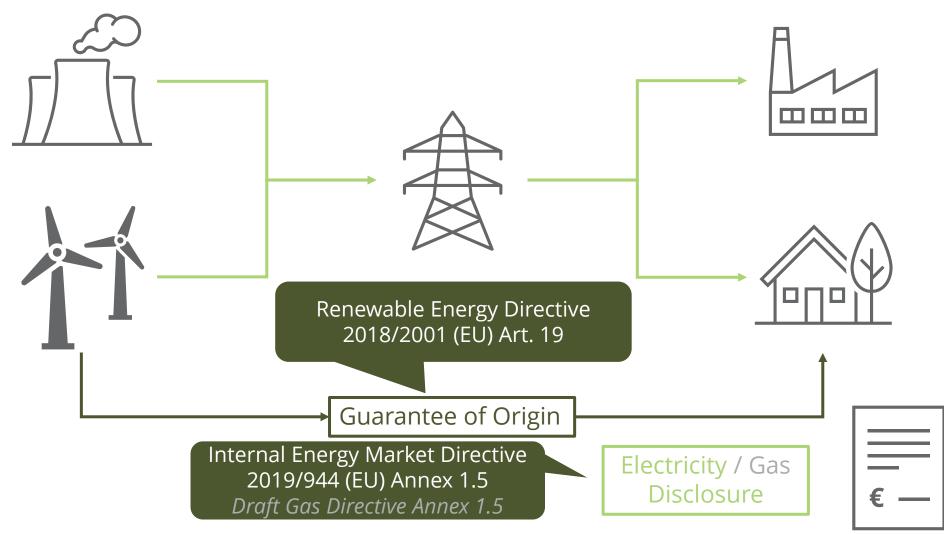
Guarantees of Origin



European Legislation



Guarantees of Origin



Guarantees of Origin

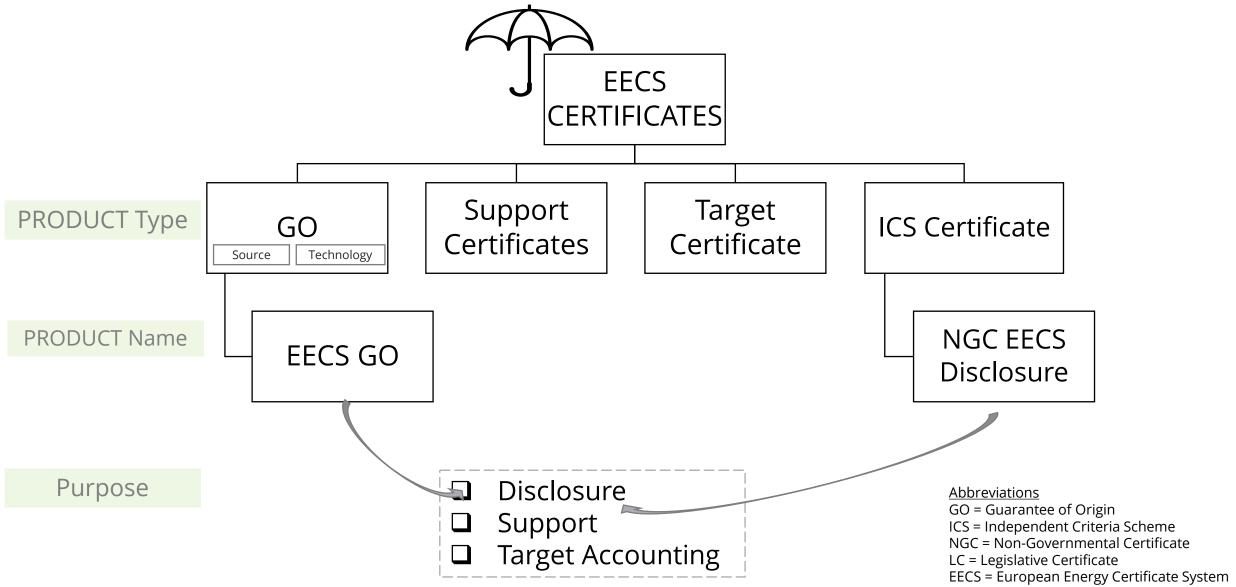


GOs

- → Purpose: inform consumers about energy supplied to them
- → Can be sold together with physical energy (Mass Balancing/Bundled sale) or separate from it (Book and Claim)
- → Proof of Uniqueness
 - Unique by legal design: unique issuing body per domain
- → Transfer: only living GOs
 - Risk of transferring info from cancelled GOs: double counting through error and fraud in reporting
- → Cancellation:
 - Only in relation with the consumption
 - Disclosure Supervisory Body verifies cancelled GOs by suppliers
 - Cancelling GO before point of consumption distorts the GO system
 - Not in line with REDII art. 19.1
 - o Disclosure supervision?
 - o Double counting /double claiming risk?
 - o How to facilitate disclosure of GOs cancelled before consumption?
 - Other means for disclosure than GOs?????? Based on the destroyed proof of uniqueness??

EECS Certificate Product Types and Certification Purposes



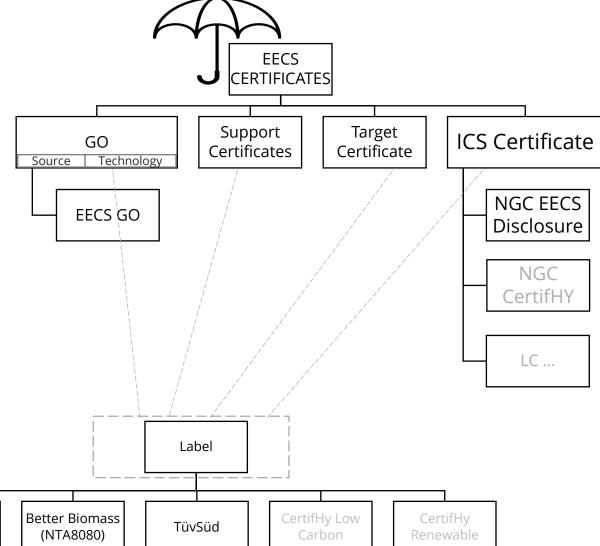


EECS Certificates facilitate referring to Labels



PRODUCT TYPE

PRODUCT NAME



LABELS

GO = Guarantee of Origin

Abbreviations

ICS = Independent Criteria Scheme

NGC = Non-Governmental Certificate

LC = Legislative Certificate

EECS = European Energy Certificate System

EKOENERGY

What does a Certificate look like under EECS™?



Generic EECS Certificates

Energy Carrier

• Electricity / Energy Gas / Hydrogen

Product

- •GO / Support Certificate / Target Certificate / Independent Criteria Scheme
- Product name

Unique certificate number

Production period (start and end dates)

Energy source

Type of installation

Production device info

Identity and country of originating member

Issue date

Identity and country of relevant competent body

Purpose

Disclosure, Support and/or Target

Support received by type

Dissemination level

Face Value

Conversion Tag & Storage Tag

Label(s) *

Carbon Footprint *

Timestamp *

Production Device Module *

Radioactive waste *

Additional on Electricity Certificate

High-Efficiency Cogeneration

High Efficiency Cogeneration Criterion Met?

- Y/N
- If Yes, then also following fields are mandatory

Lower Calorific Value

Use of Heat

Primary Energy Savings

- % PES
- Absolute PES

CO2 Emissions

- %
- Absolute

Fossil energy sources

CO2 Emissions

Nuclear energy sources

Radioactive Waste

Legend:

Mandatory information field

*Optional information field

Additional on Gas certificate

(= Energy Gas / Hydrogen)

Type of Gas

See Fact Sheet

Whether Higher or Lower Calorific Value

GHG Emissions Saved & Produced *

• + Methodology reference

Sustainability Criteria met?*

 Y/N; requirements, scheme, name Certification Body, reference to report

GHG saving criteria met?*

Calorific value *

End-Use of gas category*

Source-Shares *

Production Device Module(s) *

Description, capacity, date operational

Pre-Conversion support info *

PurityOfGas *

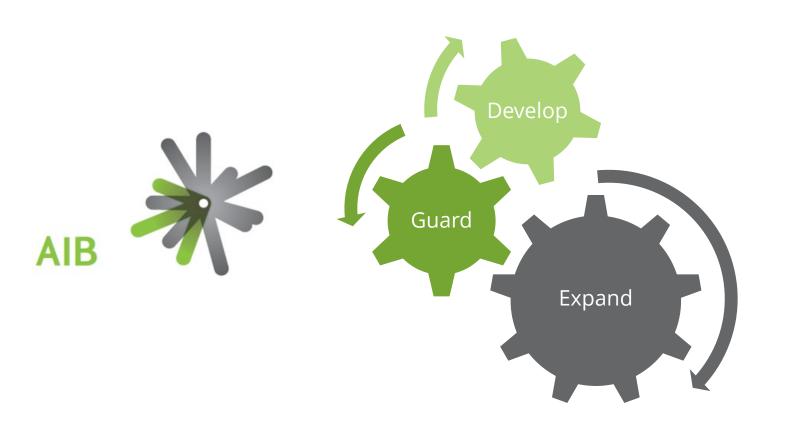
CompositionCriteriaReference *

Advanced Biofuel Criteria Met? *

11

Guarantees of Origin







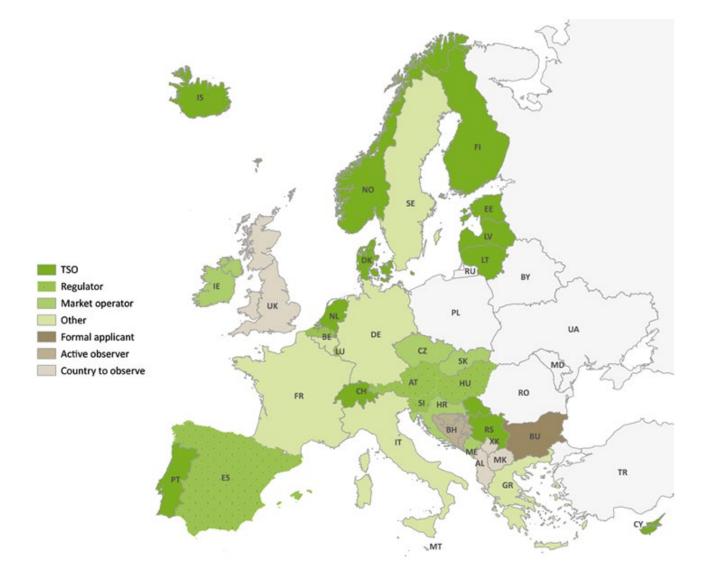
AIB Facts & Statistics

The AIB



AIB Facts

- → AIB was founded in 2002
- → International Non-Profit Association
- → Headquarters in Brussels
- → Developer and custodian of the EECS™ standard



AIB



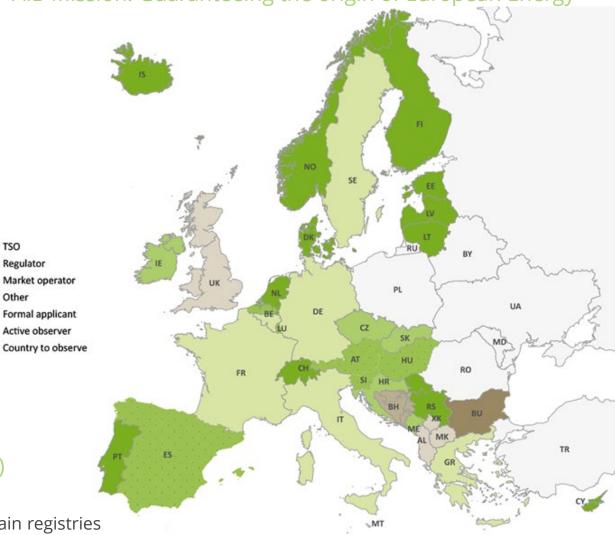
The Association of Issuing Bodies - Facts

- → AIB: non-profit association founded in 2002
- → Now 28 countries connected (33 members)
- → Geographical scope: EU EFTA Energy Community
- → Issuing Bodies have diverse roles: regulator, market operator, TSO, ministry, power exchange etc.
- → 31 AIB's current members are issuing bodies for electricity GOs
- → About half AIB's members are also competent bodies for the supervision of electricity disclosure
- → 12 AIB members assigned by their government for issuing GOs for gases - more to follow
 - Austria (E-Control), Belgium Brussels (Brugel), Belgium Flanders (VREG), Belgium Wallonia (SPW), Energinet (Denmark), Estonia (Elering), Finland (Gasgrid Finland), Italy (GSE), Lithuania (Amber Grid), Portugal (REN), Slovenia (AGEN-RS), Switzerland (Pronovo)
- → Developer and custodian of the EECS[©] standard

Pillars of the European Energy Certificate System (EECS[©])

- **EECS Rules**: engaging into quality and harmonisation
- IT hub: enables GO transfer between national/regional Domain registries
- Peer reviews and **audits**





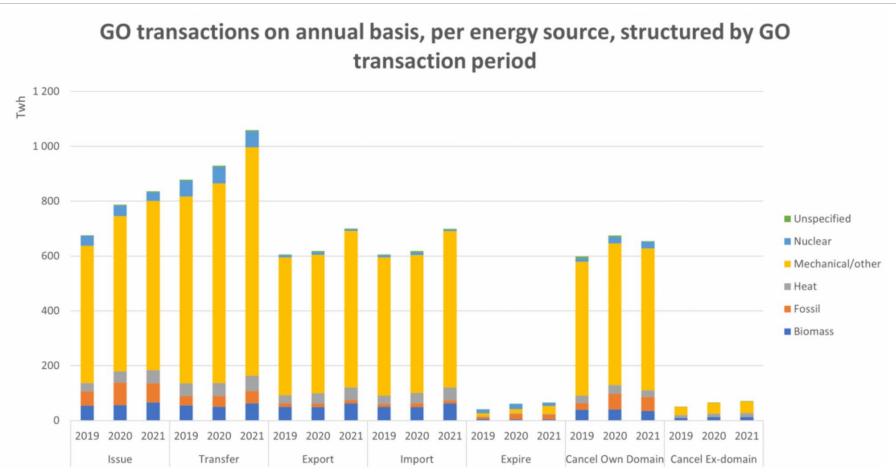
www.aib-net.org

Size of the market for electricity GOs



AIB Facts & Statistics

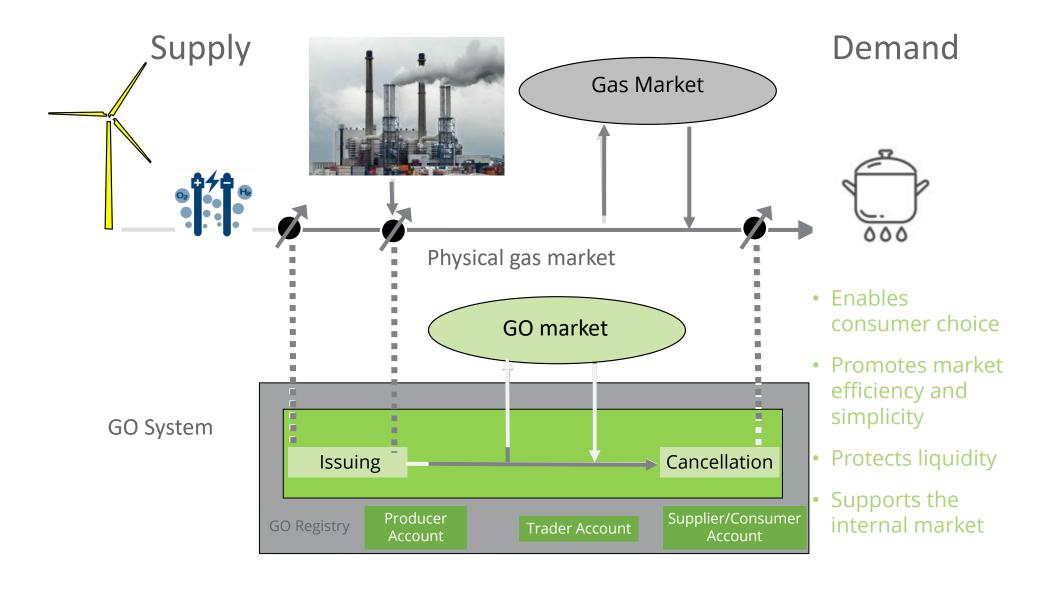
Annual EECS transactions by transaction date (TWh)



Framework

Book and Claim Certificate System





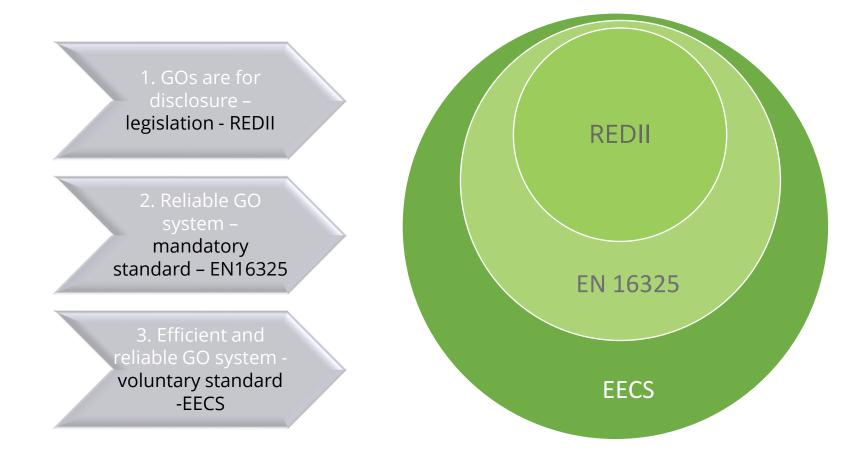
Why isn't the law enough?



- → Differences between national markets
- → Infrastructure / technology differences
- → Lack of precision
- → Interpretation
- → Efficiency when handling volumes

Framework for cross border harmonisation of guarantees of origin





Note: EECS covers also other products than guarantees of origin

REDII: Formal European standard EN16325 (CEN)



Framework

Renewable Energy Directive 2018/2001/EU - Art 19.6

- "Member States and designated competent bodies shall ensure that the requirements they impose comply with the standard CEN- EN16325"
- Transposition by 30/6/2021

EN16325: standard on guarantees of origin related to energy

- Drafted in 2013, updated in 2015
- Revision opened 7/2/2020 in CEN Joint Technical Committee 14 Working Group 5
- · Aim:
- ✓ Facilitate multi-energy carrier,
- ✓ Update towards REDII,
- ✓ Integrate improvements from practice

Why do we have standards?



Framework





Try plugging that in!

Relationship EN16325 (CEN) and EECS™



Framework

EN16325 Principles for

reliable GOs

- Under discussion in CEN, in addition to EECS today:
- ✓ Data field on the GO "Type of Dissemination of the physical energy"
- ✓GOs for heating and cooling new attributes e.g. temperature range
- √ Hydrogen blending into the gas grid
- ✓ Export & Import maintain same perimeter as in residual mix

EECS

Reliable and efficient operation

- EECS going beyond CEN
 - ✓Operational details, needing flexible adaptation
- ✓IT facilitation of international transfers and joint needs
- ✓ Platform for sharing experiences
- √Co-creation by issuing bodies
- ✓ Standard procedures for robust decision- making

The European Energy Certificate System (EECS)



Framework

EECS Rules

- Certificate Administration
 - √Core principles objectives & aspirations
 - ✓ Plant registration
 - ✓ Certificate issue, transfer and cancellation
- EECS participation rules
 - ✓ Membership, admission, compliance, disputes & change
- Scheme specific rules ✓E.g., electricity, gas ...

"subsidiary documents"

Detail

- Decision-making disputes, voting etc
- Registry system & networking standards
- Approval of agents
- Change management
- Assignment of codes
- Audit & periodic reviews

Dynamic information

"fact sheets"

• Addresses, membership details, codes, guidelines ...

Domain protocols

• Description of regulations in a specific country

Mirrored in EN16325, based on EECS



The AIB HUB



Framework

→ International transfers of electronic documents

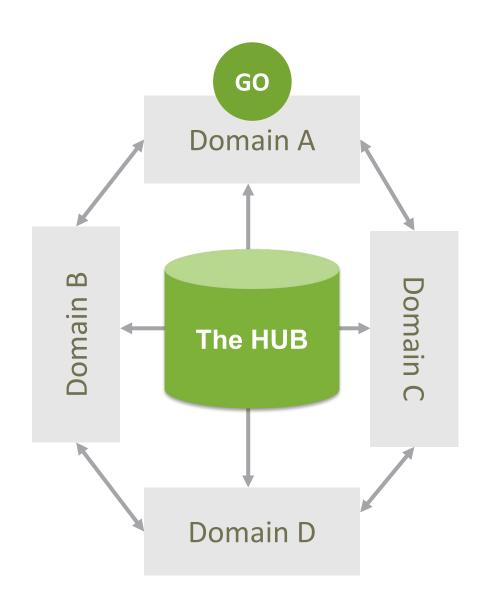
- 2020:
 - o 618 million GOs cross border transfer
 - 27 Domains

\rightarrow How

- Standardised
- Automated
- Jointly operated

\rightarrow Why

- Efficiency
- Trust
- Fraud prevention



The AIB HUB

AIB

Framework

→ International transfers of electronic documents

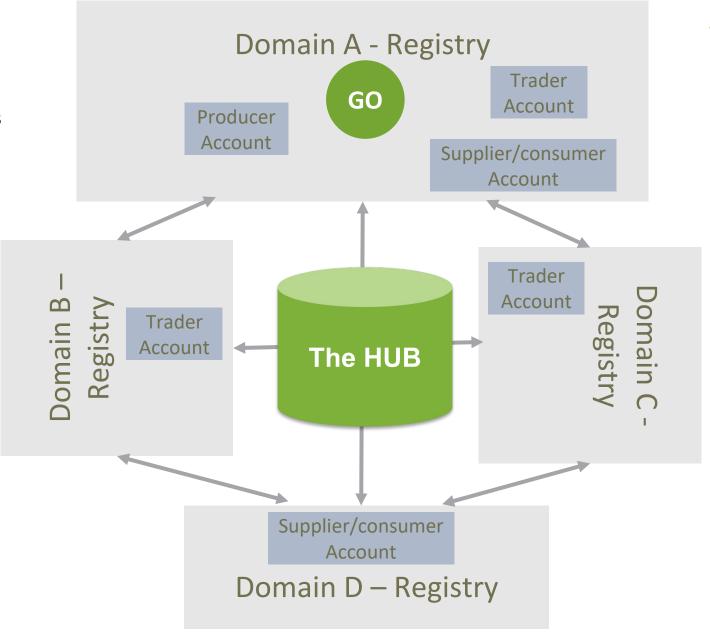
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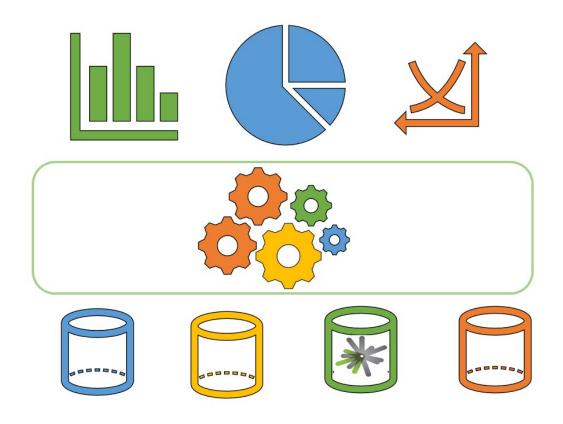
→ Why

- Efficiency
- Trust
- Fraud prevention



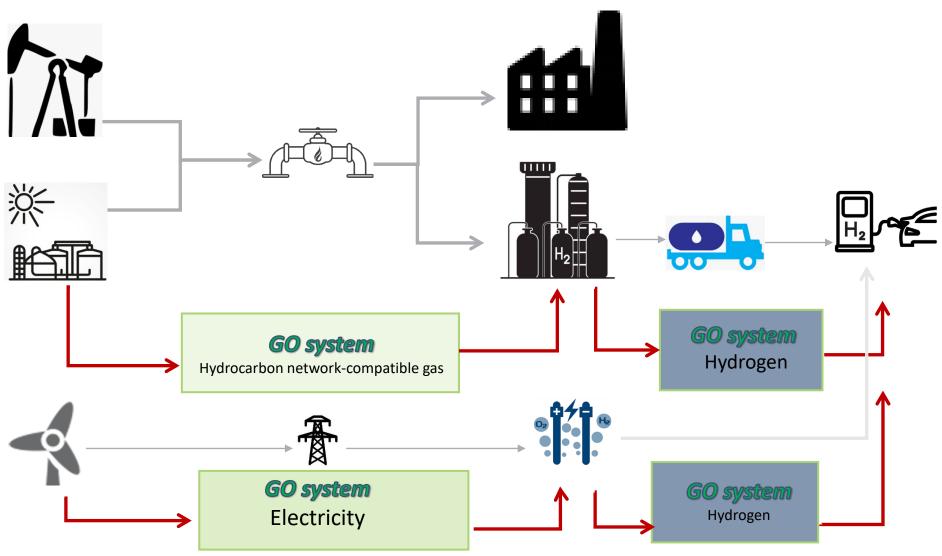
AIB Hub Roadmap - Going Modular





Why a generic GO system for all energy carriers?

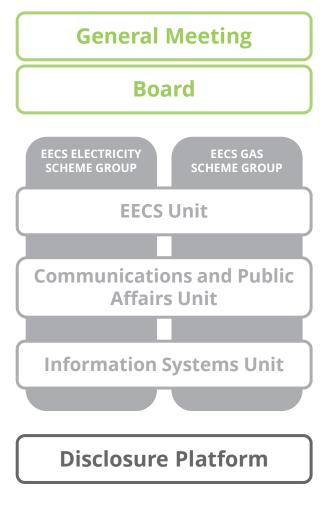
GO Conversion Issuance



AIB organised to facilitate multi-energy



- 1. AIB Hub facilitates cross-registry transfer of gas certificates in Q4 2022.
- 2. EECS Energy Carrier Conversion Rules
 - → Since September 2019
 - → Gas issuing bodies will be enabled to import electricity GOs, Electricity issuing bodies (31) will be enabled to import gas GOs. Issuing EECS Gas GOs requires membership to EECS Gas Scheme Group.
- 3. Separate decision making for Electricity and Gas specifics
 - → Since February 2020
 - i. Electricity Scheme Group
 - Electricity Scheme = section N of the EECS Rules
 - Voting members
 - ii. Gas Scheme Group
 - Existing members
 - Observer Scheme co-developer status
 - Forum for discussion and resolution of challenges
 - EECS Gas Scheme: Chapter O of the EECS Rules (since nov 2019)



Relation with Independent Criteria Schemes

Independent Criteria Schemes as EECS Products



Categories of ICSs

- → Operator
 - AIB
 - External Scheme operator
- → Legal status
 - Non-Governmental Certificate
 - Legislative Certificate

Independent Criteria Scheme: agreement between ICS operator and AIB



EECS Rules Section D 'EECS Products'

D2.4 ICS Certificates

D2.4.1 For a type of ICS Certificate to be accepted as an EECS Product:

- a) the type of ICS Certificate must relate either to:
 - i. the energy source for the associated Output;
 - ii. the technology used in producing the associated Output;
- b) the Scheme Operator of the relevant ICS Scheme must have entered into an agreement with the AIB regarding the operation of that ICS Scheme.

Independent Criteria Schemes may only be added to or removed from the Fact Sheet "Independent Criteria Schemes" by the General Secretary and with the support of the relevant Scheme Group.

Criteria for the agreement between AIB and ICS operator

- 1. Clear Scope
- 2. Shared Geographical Scope
- 3. EECS Compliance
- 4. Not competing with GO schemes and other legislative schemes
- 5. Clear authorisation and compliance criteria for issuing bodies under the ICS Scheme
- 6. Framework description for Scheme Update and Maintenance
- 7. Legal entity operating the Scheme
- 8. Clear Exit Conditions

Note: Issuing Bodies using the AIB Hub for cross-registry transfer shall comply with the EECS Rules.

Guaranteeing the origin of European Energy



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