



# I-REC Standard: Past, Present and Future

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**The International REC Standard Foundation**

# Agenda



## Introduction

- Introduction of the I-REC Standard Foundation and the global EAC background

## Present development

- Growth across the board
- Important developments for Electricity
- New products – new product codes

## Looking into the Future

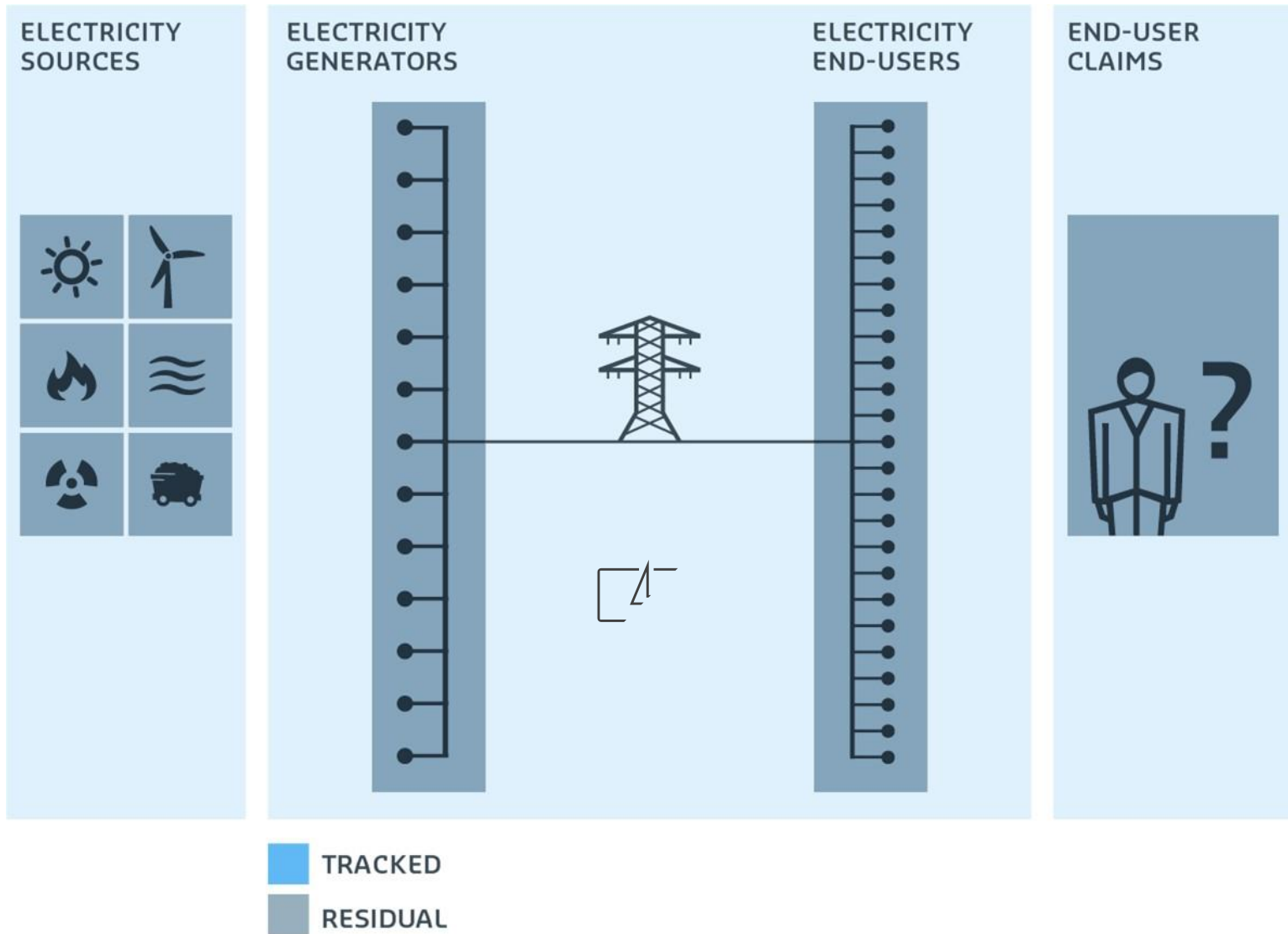
- Challenges and opportunities

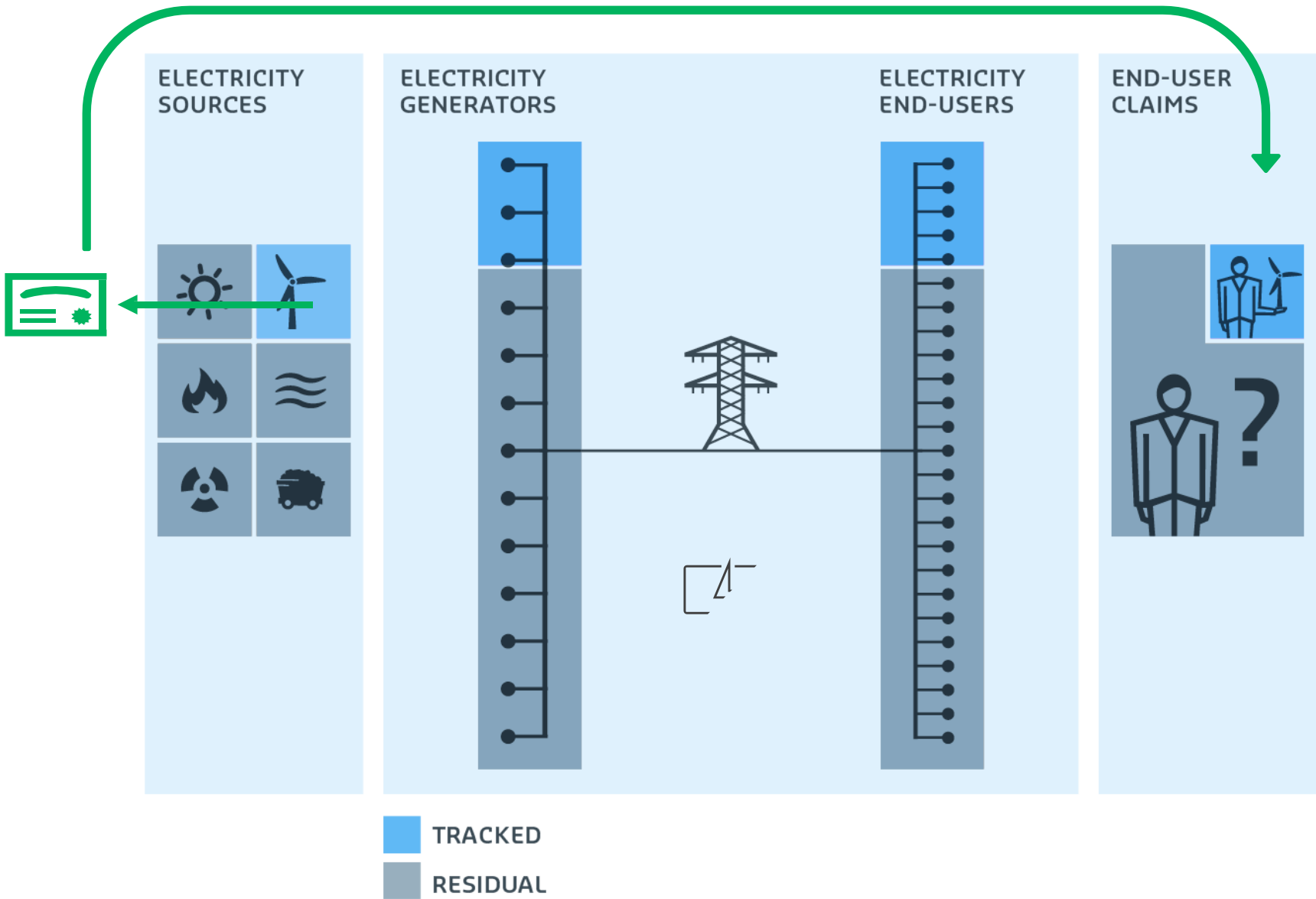
## Engaging stakeholders

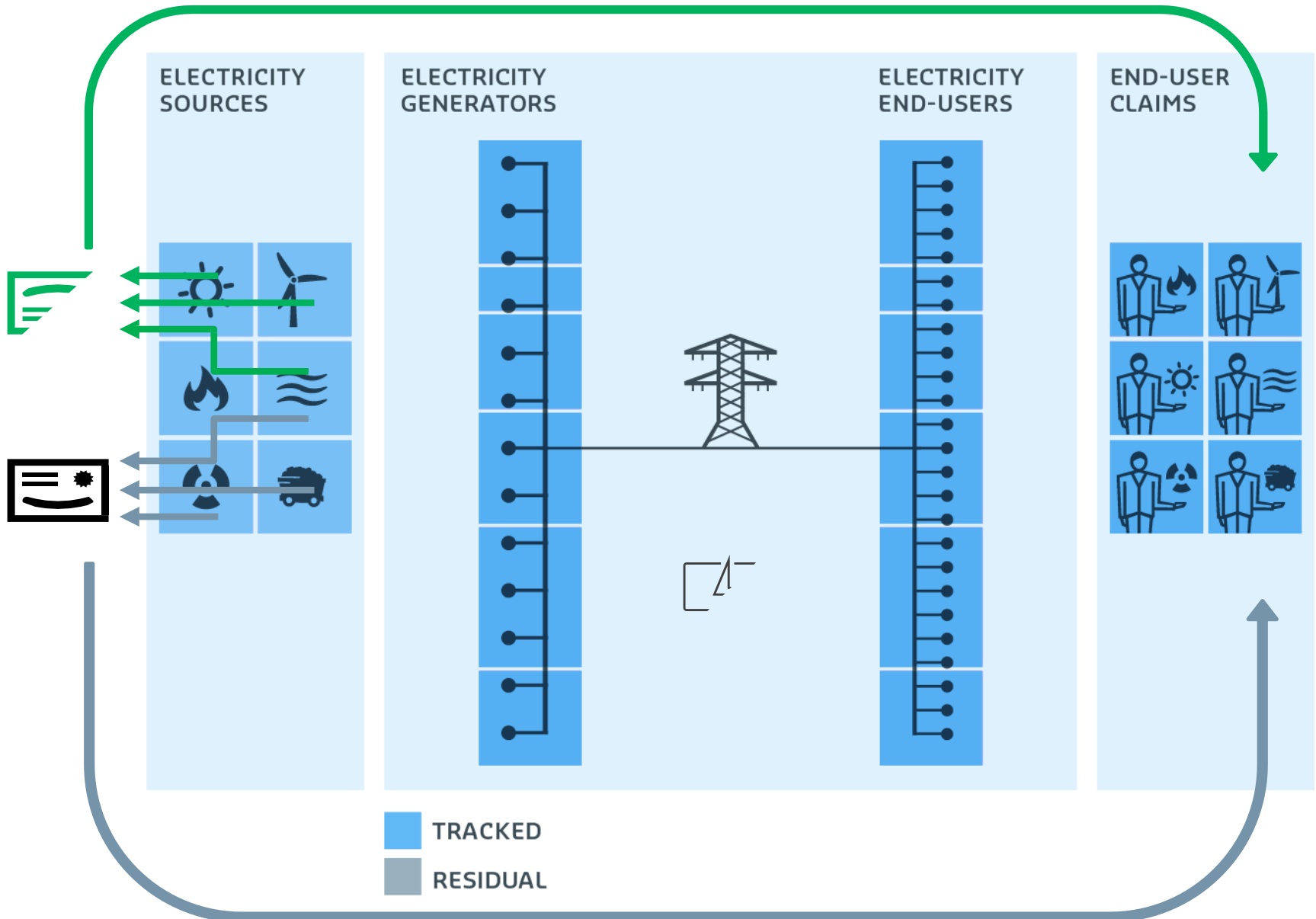
- Conference 2022 in Bangkok

## Closing

- Questions







## The why and how of EAC schemes



ELECTRICITY  
SOURCE



ELECTRICITY  
GENERATOR

TRADER

SUPPLIER

ELECTRICITY  
END-USER



END-USER  
CLAIM

### Renewables

- wind
- solar
- hydro

### Non-Renewables:

- coal
- gas
- nuclear

**Electricity is a homogeneous product**  
**Green or grey electricity does not exist!**

A book and claim system is the only way  
to:

- Inform the end-users about the origin of their electricity procurement
- Give end-users a voice in the electricity product they consume
- Give end-users the ability to impact production of electricity

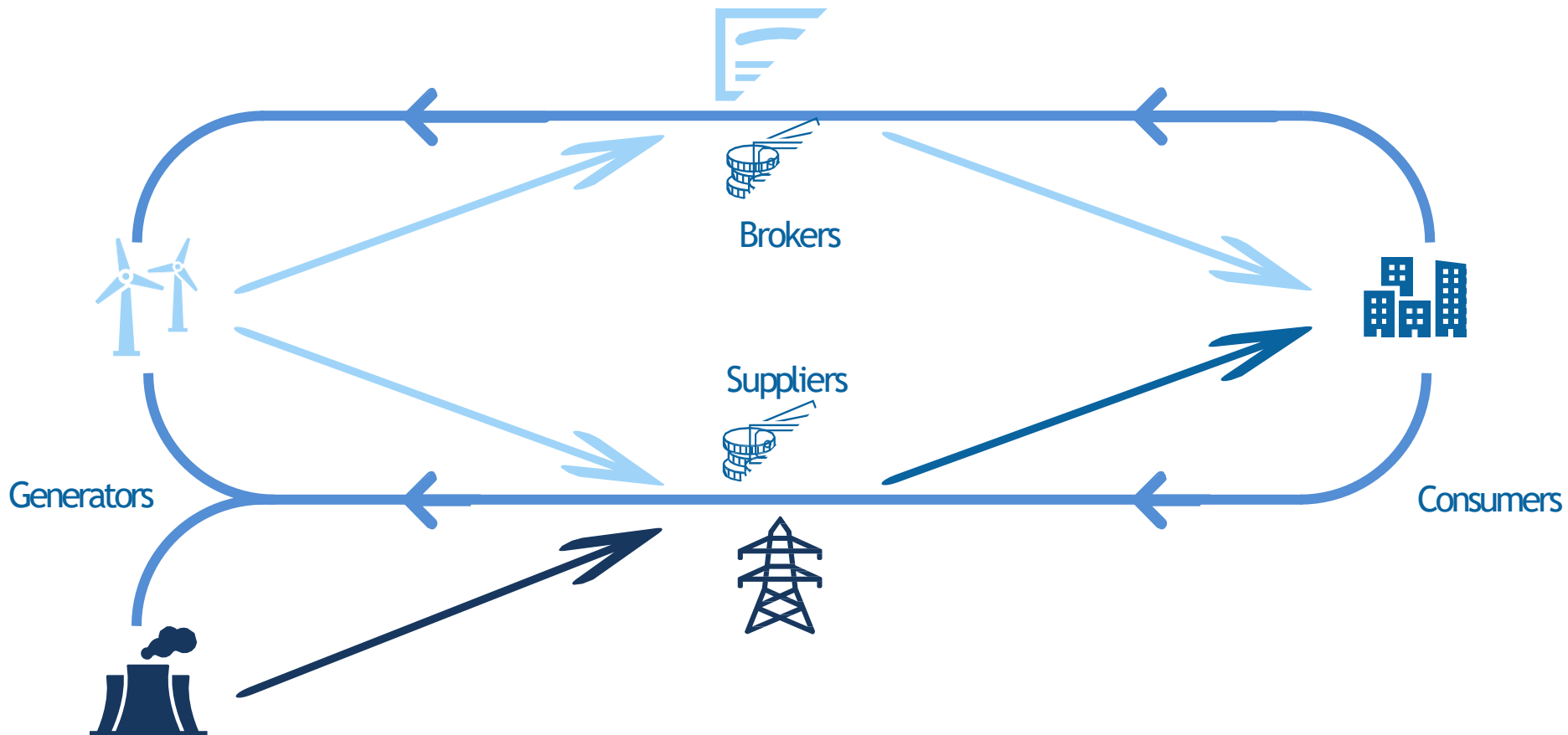
‘I purchased renewable electricity’

‘my carbon foot print for the Scope 2 emissions is zero’

‘I contributed to the support of (new) RES power’

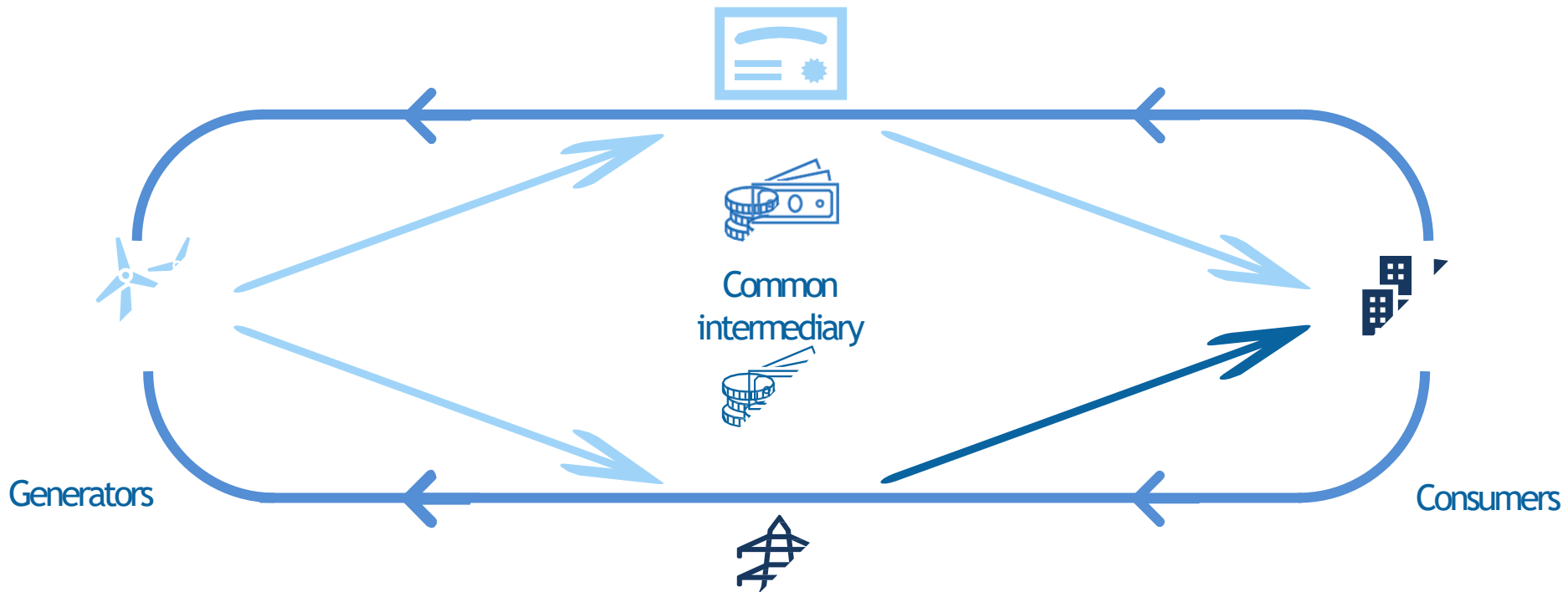
# Buying renewable energy (1/3)

## Separate power and certificates (unbundled)



# Buying renewable energy (2/3)

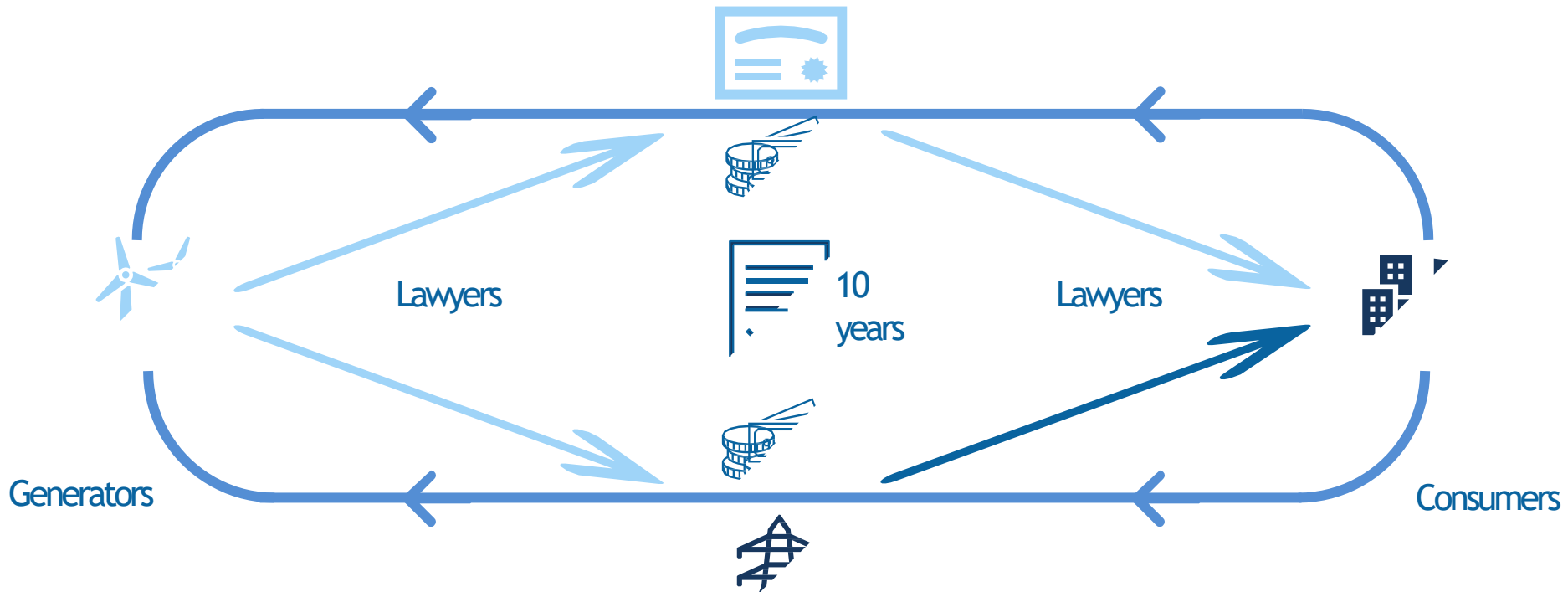
## Joint power and certificates (bundled)





# Buying renewable energy (3/3)

## Renewable PPA



## Who uses Energy Attribute Certificates (EACs)

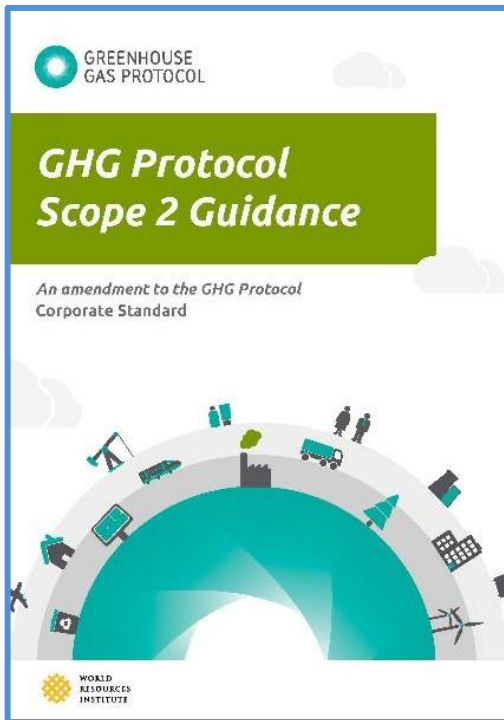
More than +8000 companies  
report to CDP worldwide...

...their energy usage, using the  
GHG Protocol Scope 2 reporting  
criteria

...and documenting this with  
GOs adherent to the EACS  
Standard, RECs adherent with US  
law or I-RECs adherent to the  
International REC Standards



# The role of reporting standards

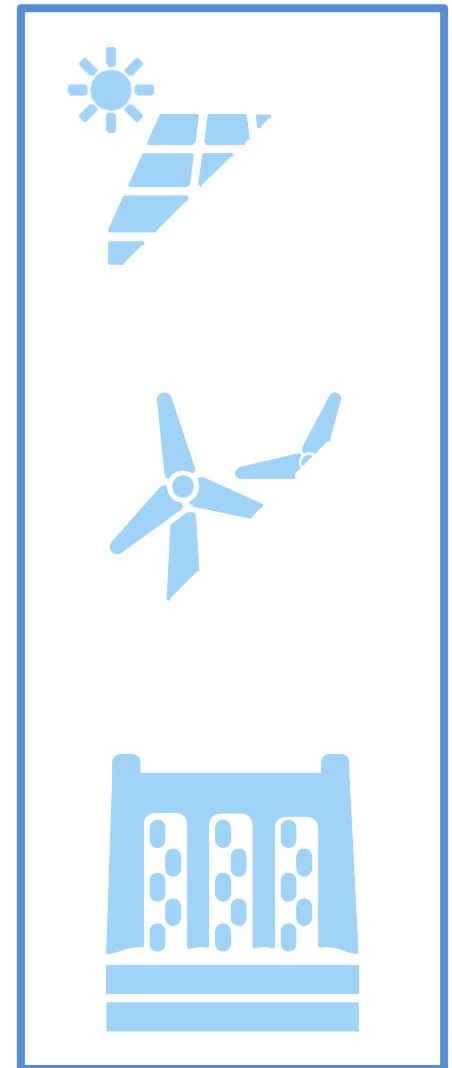
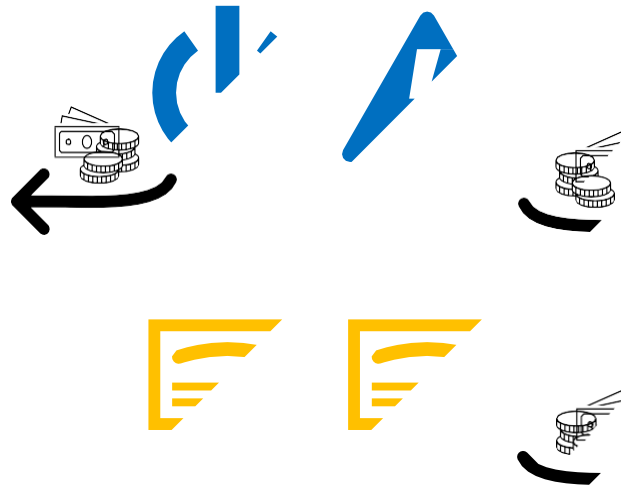
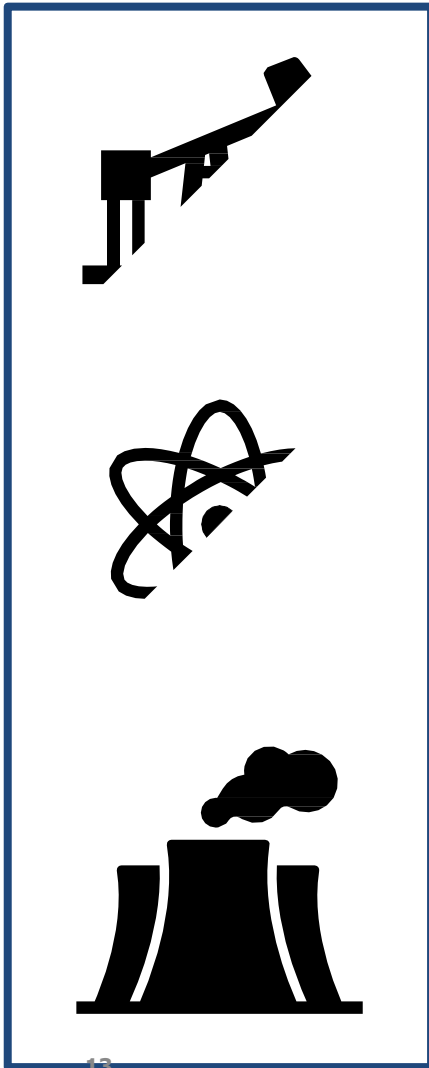


<b>7,000+</b> companies	<b>620+</b> cities
<small>Over 7,000+ companies responded to our climate change, water, forests and supply chain questionnaire this year.</small>	<small>disclosed environmental information through CDP this year.</small>
<b>\$3.6tn</b> purchasing power	<b>\$96tn</b> investor assets
<small>CDP's 125 supply chain members represent a combined purchasing power of \$3.6 trillion.</small>	<small>Over 525 investors with US\$96 trillion in assets request information on climate change, water or forests.</small>
	<b>120+</b> states and regions
	<small>Over 120 of the world's states and regions now measure their environmental impacts through CDP.</small>

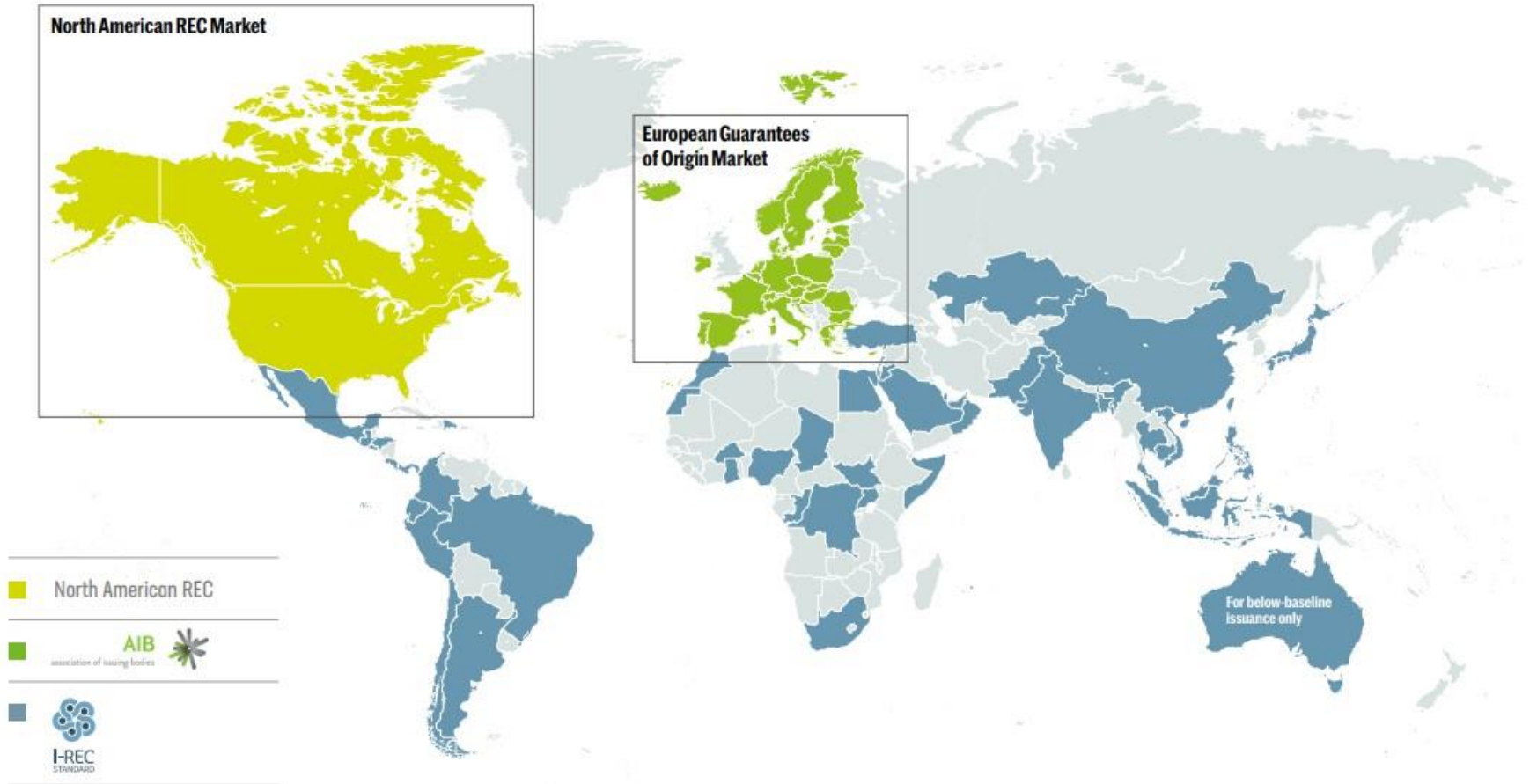




# The why and how of EAC schemes

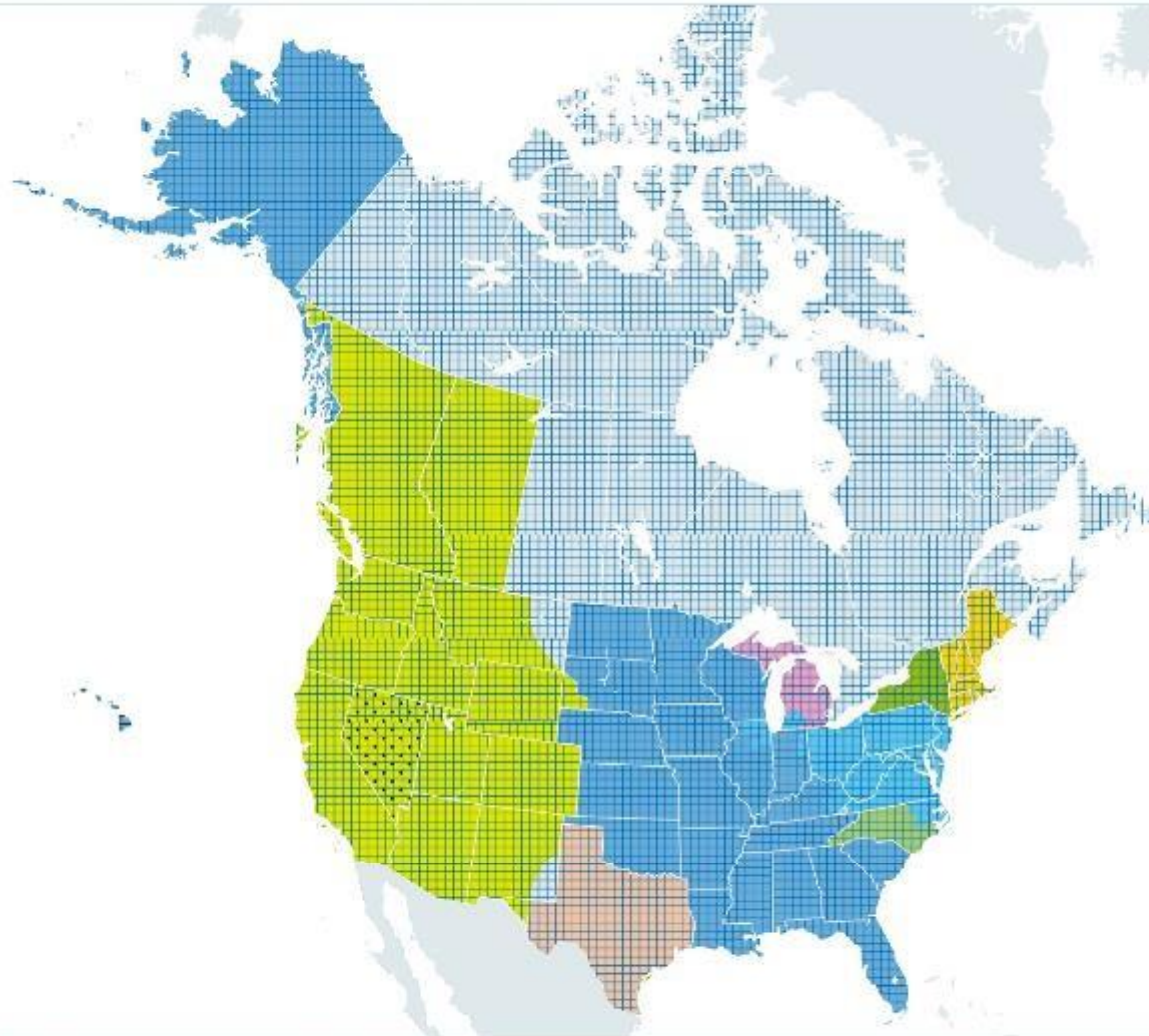


## Voluntary Energy Attribute Certificate (EAC) Markets around the world



### International EAC Markets

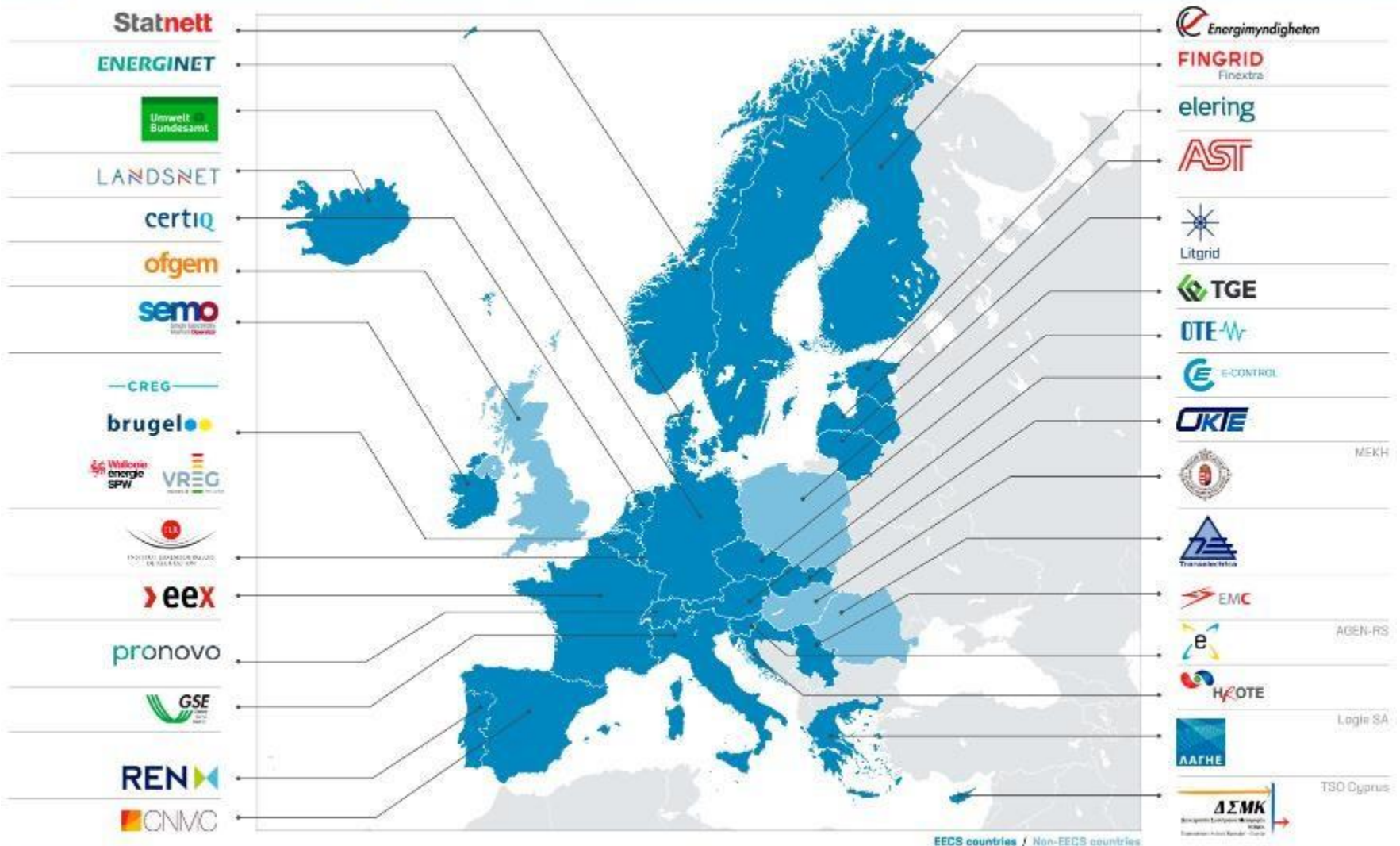
## North American REC Market Issuers



-  NVTREC
-  M-RETS <sup>\*</sup>
-  WECC
-  MIRECS
-  NEPOOL
-  nyserda
-  pjmeis
-  NC-RETS
-  North American Renewables Registry
-  ERCOT

\* M-RETS is on a voluntary basis active in all states and provinces.

## European Guarantees of Origin Market Issuers





# The why and how of EAC schemes

## Energy (power) market



## EAC SYSTEM STANDARDS

## Certificate market



LEGISLATION / REGULATIONS

CONSUMER CLAIMS STANDARDS

The International REC Standard Foundation (I-REC Standard) is a non-profit organization that provides a robust standard for developing attribute tracking systems. The I-REC Standard is committed to ensuring unbiased access to product information and allowing end-users to confidently procure products whose origins are well documented and clearly accounted for, thus empowering end-users to choose low-carbon and sustainable products around the world.

### **The I-REC Standard's Accredited Products are recognized by major reporting frameworks**

Products adherent to the I-REC Standard, such as the I-REC for electricity issued by nationally appointed issuers are recognized by myriad organizations such as the Greenhouse Gas Protocol (GHGP), CDP, and RE100 as the reliable backbone for claiming renewable electricity consumption.

### **The I-REC Standard's International Attribute Tracking Standard, is a globally recognized standard**

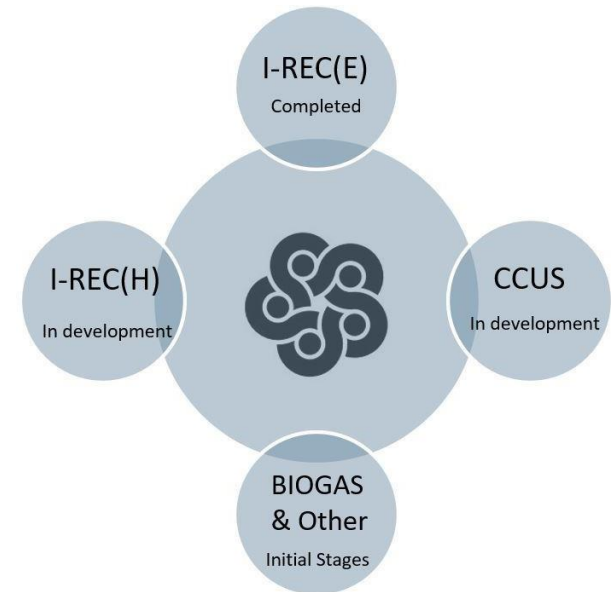
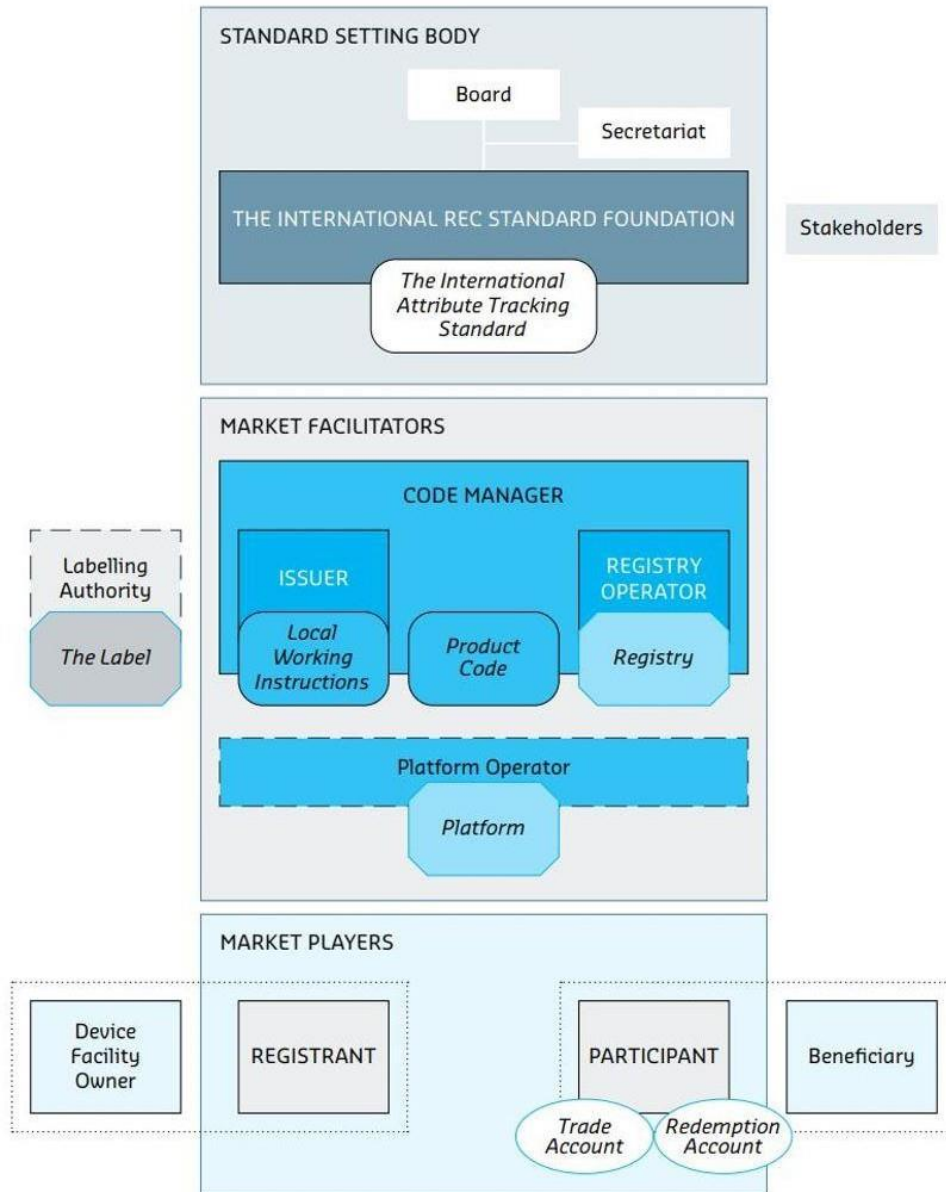
Robust, auditable solutions adherent to the International Attribute Tracking Standard can be implemented for products both within and beyond the energy sector to promote standardization, recognition, market support, and independent oversight.

### **The International Attribute Tracking Standard ensures best practice in market facilitation**

The Standard ensures market facilitators adhere to best practices and good governance principles while ensuring a fair market for all stakeholders and end-users who make use of the system.

### **Leader in supporting governments, stakeholders and local entities in taking control of tracking markets**

A core principle of the I-REC Standard is global standardization with local implementation. As a result, coordination with governments and local stakeholders is our highest priority.



LEGEND

- ORGANISATION
- ENTITIES ACCREDITED BY FOUNDATION
- MARKET OPTIONS, NOT REQUIRED
- DOCUMENTS
- PRODUCTS ACCREDITED BY FOUNDATION
- PRODUCTS APPROVED BY FOUNDATION
- DOCUMENTS ACCREDITED BY FOUNDATION
- TYPE OF ACCOUNT ON REGISTRY

# History of the International REC for Electricity

## Lessons learned from other robust REC markets

Voluntary market development leads to robust and reliable markets.

Voluntary markets involve the whole chain from producers to consumers.

Voluntary markets support national stakeholders in creating internationally accepted markets.

Its all about **not** reinventing the wheel!

❖ Providing a standard simplifies the development of a EAC tracking and the associated RE markets for all parties

❖ Generators, suppliers, market players and consumers

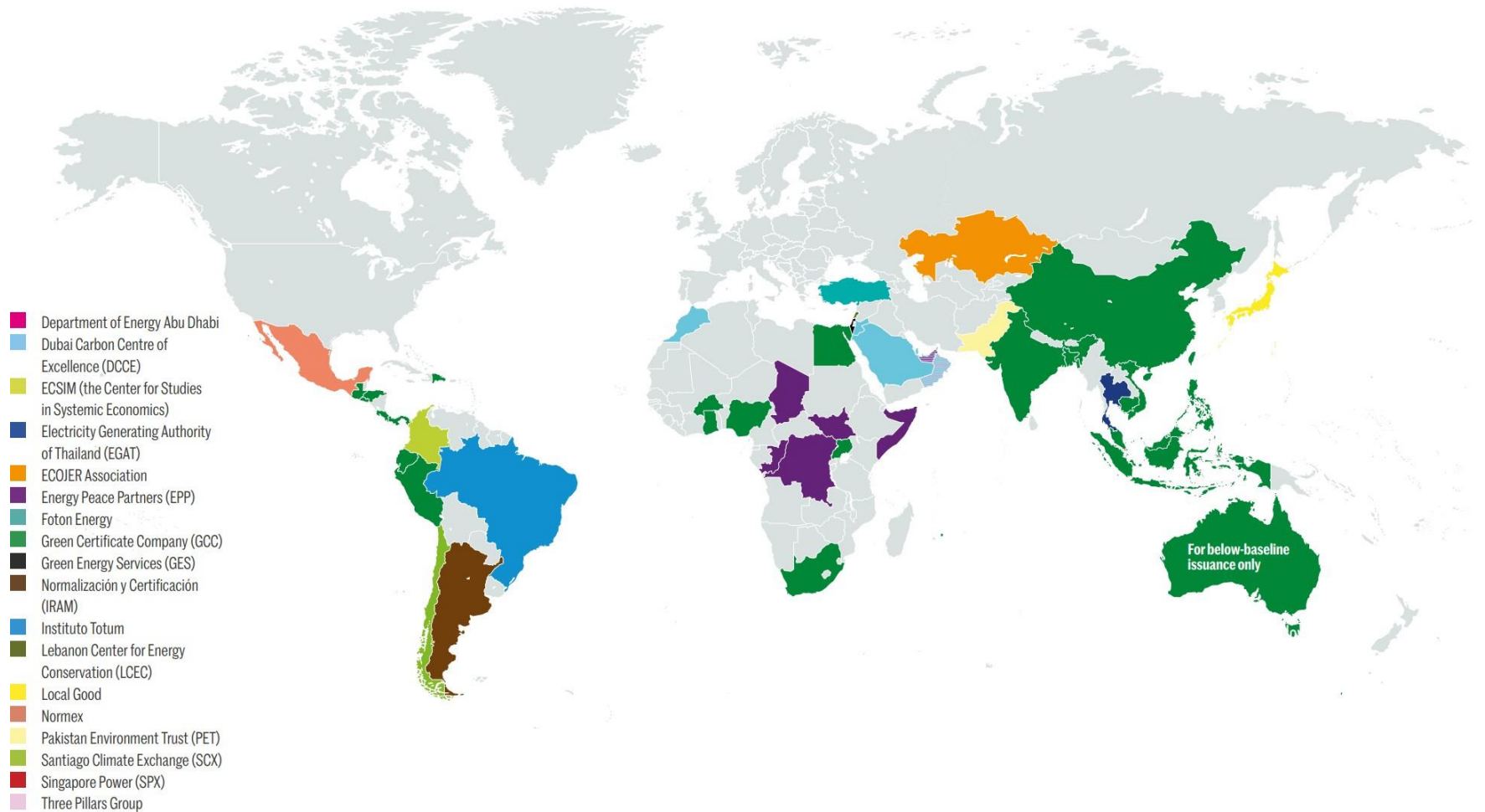
# What did we learn from these REC markets?

## Standards for tracking instruments...

- ...increase the use of the attribute tracking system by end-users which can increase demand-driven growth and foreign investment
- ...simplify the choice and trust consumers have when choosing renewables
- ...eliminate implementation problems when starting a new system
- ...reduce or even eliminate costs around implementing a REC system
- ...allow a simplified development path for all stakeholders to join the developments, including NGO stakeholders such as labels

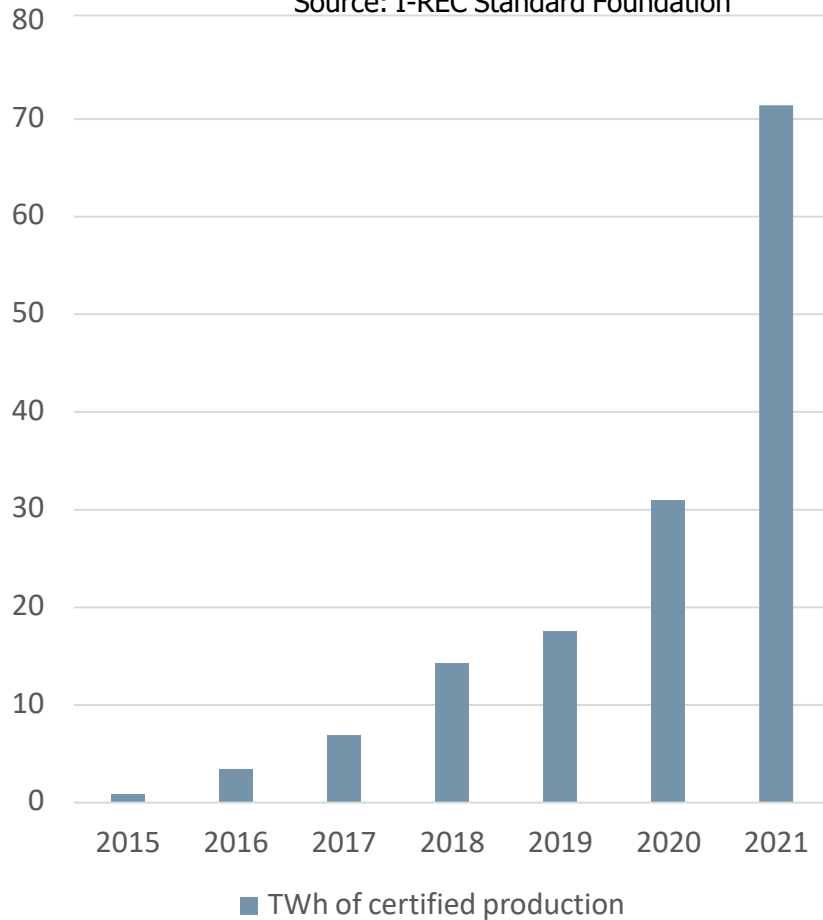


## International REC for electricity Market Issuers



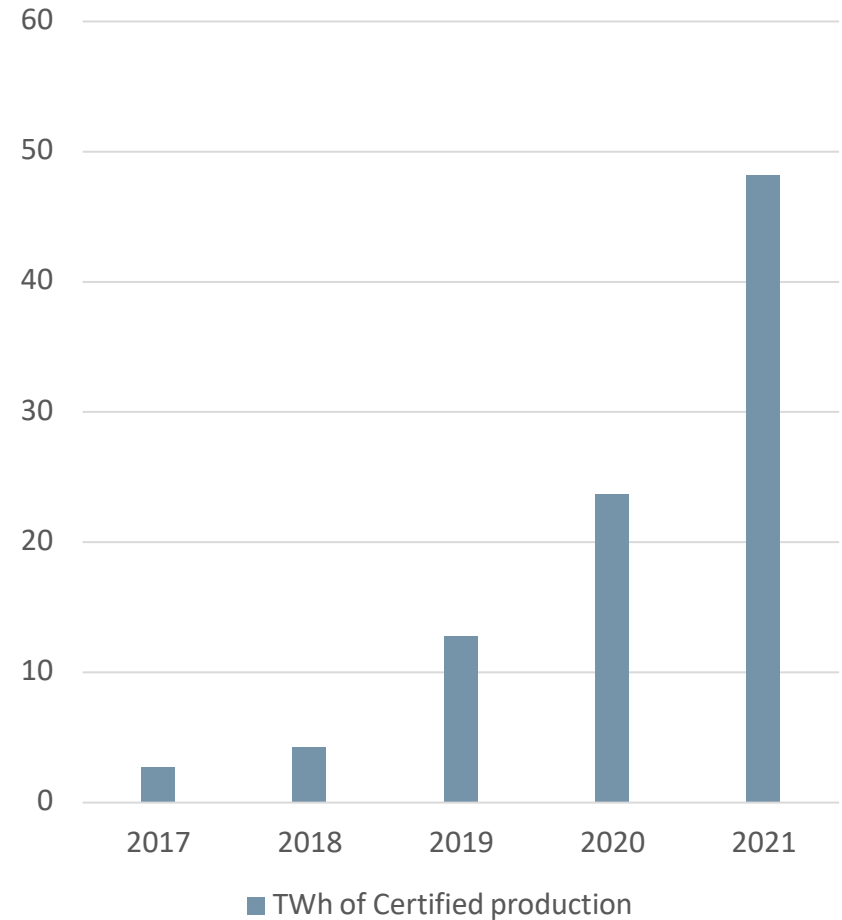
### Global I-REC for Electricity Issuance (TWh)

Source: I-REC Standard Foundation



### Global I-REC(E) Annual Redemptions (TWh)

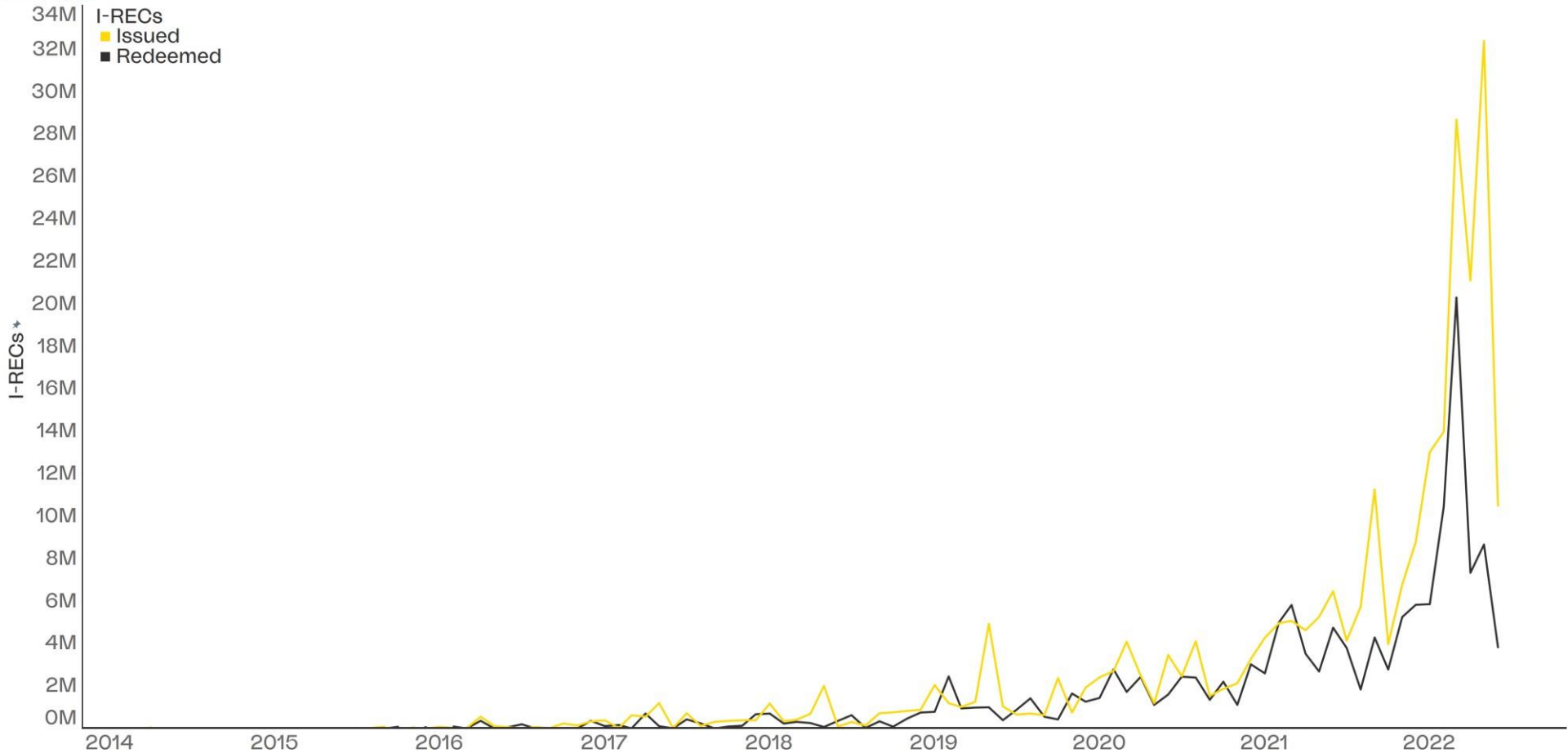
Source: I-REC Standard Foundation



Ev. I-REC STANDARD

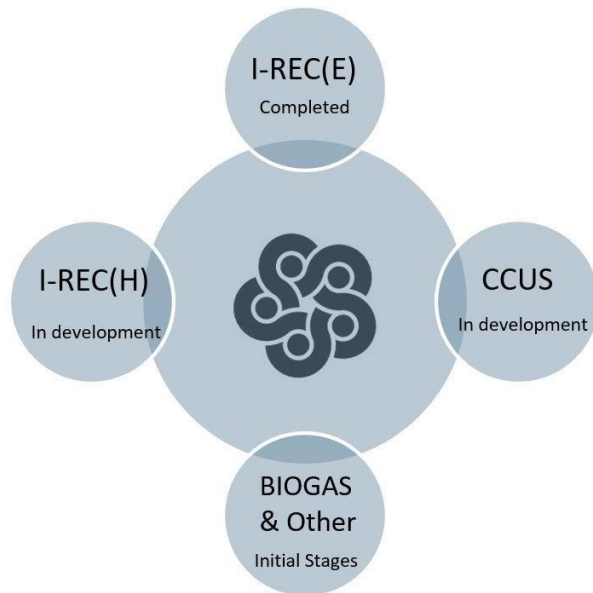
I-RECs  
■ Issued  
■ Redeemed

Issuance and Redemption month by month





# Updates on new Products



## Electricity

- Temporal granularity (Time-stamping) is already being implemented into the Evident registry
- Platform role being actively introduced into the Code structure and first Platforms being accredited by the Foundation

## Hydrogen

- The Hydrogen Code accredited by the I-REC Standard is currently being finalized and negotiations are ongoing for the first use cases in the Middle East.

## CCUS and others

- The I-REC Standard Foundation is actively supporting the development and accreditation of a Carbon Dioxide Removal (CDR) Attribute Tracking Certificate system called C-Capsule, that allows consumers to mitigate emissions, while providing a revenue stream for CDR activity.

## GAS-REC

- Possibilities for the code development are being assessed by the I-REC Foundation Secretariat

## The Center for Strategic and International Studies on CBAM

The Center for Strategic and International Studies (CSIS) has published [an article](#) on the European Union's carbon border adjustment mechanism ([CBAM](#)).

The article [cited](#) the I-REC Standard Foundation (I-REC Standard) and our concerns around the current country and sectoral embedded emissions calculations.



The I-REC Standard Foundation has proposed potential means of solving this issue: through greater granularity in renewable energy procurement and traceability and the role that energy attribute certificates (EACs) can play in promoting greater transparency and accountability within renewable energy markets

# Importance of energy claims related to specific commodities

## Green Aluminium Project of EGA in Abu Dhabi

In February 2021, Emirates Global Aluminium (EGA) announced the sale of 40,000 tonnes of their CelestiAL – aluminium produced with renewable solar power – to BMW Group.



The solar power used to produce EGA's CelestiAL was procured from Dubai Electricity and Water Authority (DEWA) and the Mohammed bin Rashid Al Maktoum Solar Park. DEWA supplied EGA with roughly 560,000 megawatt hours (MWh) of solar power over the course of a year which allowed EGA to generate 40,000 tonnes of aluminium. DEWA was issued I-RECs from the Dubai Carbon Centre of Excellence (also referred to as Dubai Carbon or DCCE), the approved I-REC Issuer in the UAE for each MWh of solar power energy produced.





# The I-REC Standard Conference (ISC) 2022

## ISC 2022

- Bangkok, Thailand
- 1-2 November 2022
- Pre-conference on 31 Oct. 2022

## ISC Newsletters

- First announcement was published 01-02-2022
- Second announcement set for 10-03-2022

## Speakers & Sponsors

- Currently there are only Meeting sponsor positions left – these do not have speaker roles.
- Speakers – invitations will be going out shortly.

Having trouble viewing? [Read the online version.](#)



Standardizing  
Global Attribute  
Markets



The I-REC Standard Conference (ISC) 2022 will take place on **1-2 November 2022** in **Bangkok, Thailand** at the beautiful **Millennium Hilton Bangkok Hotel.**

The ISC 2022 is an opportunity for global I-REC market actors and other stakeholders to share their thoughts, visions, and experiences with their peers from around the world.

November 2022

**1-2**

Pre-conference sessions will be held on the 31st of October 2022.



### Pre Conferences – 31 October 2022

<p>14.00-16.00 Grand Ballroom <b>PRE-CONFERENCE 1</b> <b>Introduction to the I-REC Standard</b></p>	<p>14.00-16.00 Thonburi <b>PRE-CONFERENCE 2</b> <b>Southeast Asian Renewables Procurement</b></p>
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### Day 1 – 1 November 2022

<p>09.30-10.45 Grand Ballroom <b>Opening Session 1</b> <b>Standardizing Global Attribute Markets</b></p>	<p>11.15-12.15 Grand Ballroom <b>SESSION 2A</b> <b>ASEAN EAC Market Integration</b></p> <p>11.15-12.15 Thonburi <b>SESSION 2B</b> <b>Development of Hydrogen Tracking Systems</b></p>	<p>13.30-14.30 Grand Ballroom <b>SESSION 3A</b> <b>Global EAC Standardization and the Impacts of Carbon Border Taxes</b></p> <p>13.30-14.30 Thonburi <b>SESSION 3B</b> <b>Use of Renewables across the Supply Chain</b></p>	<p>14.00-16.00 Grand Ballroom <b>SESSION 4A</b> <b>I-REC Growth in Emerging Markets</b></p> <p>14.00-16.00 Thonburi <b>SESSION 4B</b> <b>Granularity and the role of Platforms</b></p>	<p>16.30-17.30 Grand Ballroom <b>KEYNOTE SESSION 5</b> <b>End-User Round Table</b></p>
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### Day 2 – 2 November 2022

<p>09.00-10.00 Grand Ballroom <b>SESSION 6A</b> <b>Volume and Prices, Value of Renewables around the World</b></p>	<p>10.30-11.30 Grand Ballroom <b>SESSION 7A</b> <b>Thailand Leading as an Example for Innovation</b></p>	<p>12.00-13.00 Grand Ballroom <b>KEYNOTE SESSION 8</b> <b>The vision for EAC Markets</b></p>
<p>09.00-10.00 Thonburi <b>SESSION 6B</b> <b>Carbon Removal and Reduction Mechanisms</b></p>	<p>10.30-11.30 Thonburi <b>SESSION 7B</b> <b>EAC Registries and Marketplaces— More than Just an IT Solution</b></p>	

# Questions?

Thank you

**Oleg Dobrovolsky**  
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