

Sourcing Renewable Energy Certificates 采购可再生能源证书

Karl Trutschmann – Jan 30th, 2023

EVERY CONNECTION COUNTS

A stylized globe composed of a network of glowing green and blue lines and nodes, representing global connectivity or a digital network.

**SAVE. REUSE.
BE GREEN.**

Move to Certified Renewable Energy

转向经认证的可再生能源

Green electricity certificates are transferable guarantees of origin that companies can buy separately from physical electricity contracts
绿色电力证书是可转让的来源担保证书，可以与电力供应分开购买

Benefits (利益) :

- ⇒ Provide companies, institutions, and individuals a simple way to offset their carbon footprint & support clean energy
- ⇒ Ability to claim energy generated from renewable source
- ⇒ Currently an acceptable method under SBTi (Science Based Targets Initiative)
- ⇒ Complimentary to your own production i.e., Solar...
- ⇒ See Next slide for types and locations
- ⇒ 为公司、机构和个人提供一种简单的方法来抵消他们的碳足迹并支持清洁能源
- ⇒ 能够申请可再生能源产生的能源 目前是 SBTi (科学碳目标倡议组织) 下可接受的方法
- ⇒ 可再生能源可以为公司运行节约成本，比如太阳能
- ⇒ 参照下一页介绍类型和地区

Options on how to proceed:关于如何进行的选项：

1. Choose a provider who supplies both electricity and certificates
 2. Pick an electricity supplier who buys certificates and sells you both separately
 3. Separately tender for electricity supply and green electricity certificates.
 - This means you may opt for two different suppliers
- ⇒ You will need to know your forecasted annual kWh volume
 - ⇒ You can source partial or full volume as well as source for future years
1. 选择既供电又提供证书的供应商
 2. 电力供应商有绿电证书并可以销售绿电给公司、机构或个人
 3. 电力供应和绿电证书分别寻求供应商
- ⇒ 需要预测公司的年度用电量
 - ⇒ 可以部分或者甚至全部绿电，并可以规划到未来的几年

What, Where & How?

哪些是绿色再生能源证书，可以在哪里买以及怎么买？

IREC's: America's and China 美国和中国

- International Renewable Energy Certificates
- 国际可再生能源证书
- USA also called **Green-e®**

GO's: Europe 欧洲

- Guarantee of Origin Certificate
- 原产地保证证书

TIGR's. India 印度

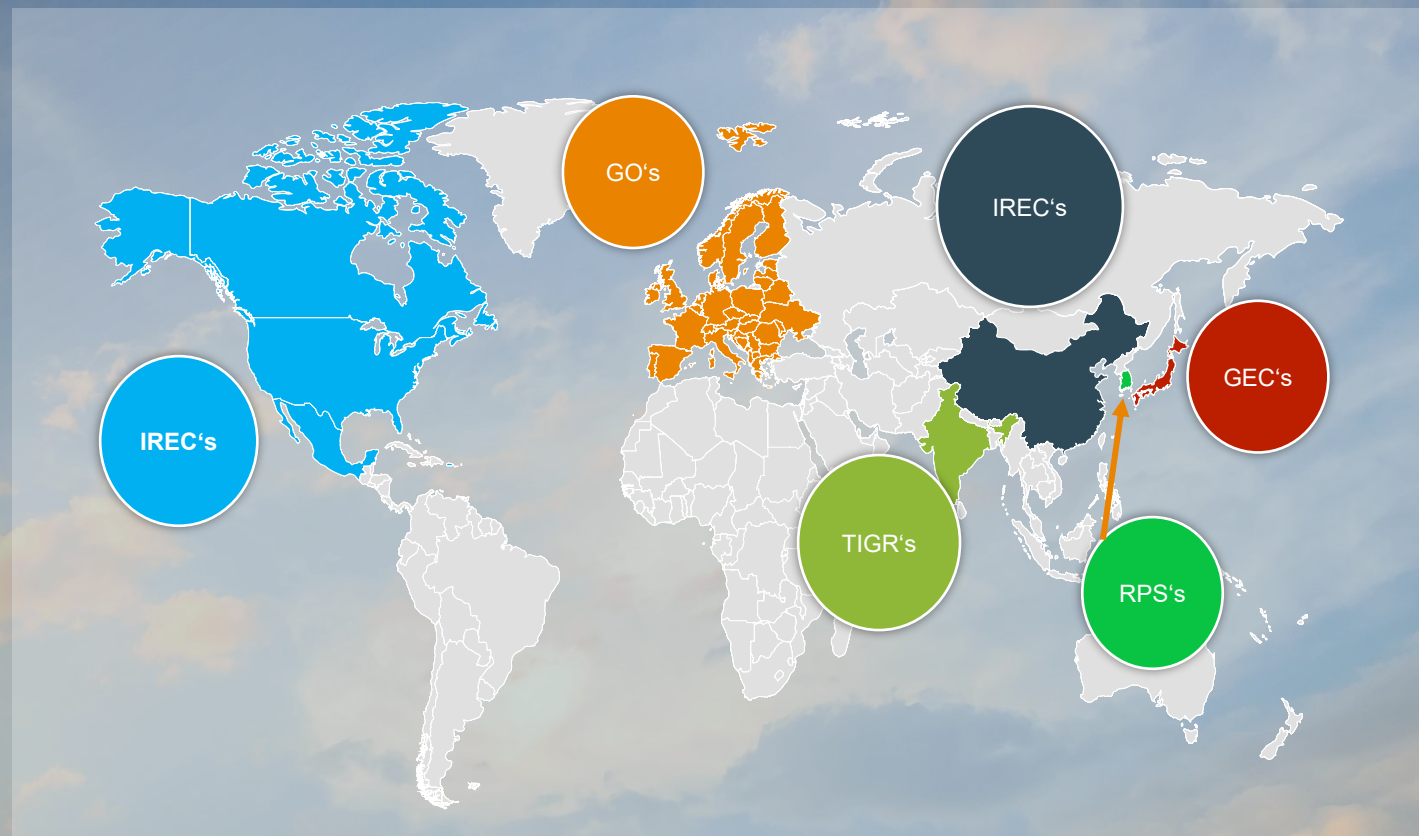
- Tradable Instrument for Global Renewables
- 全球可再生能源的可交易工具

GEC's: Japan

- Green Electricity Certificates
- 绿色电力证书

RPS's: Korea

- Renewable Portfolio Standard 可再生能源组合标准



- Contact your energy provider for further options in your region
- Reach out to the above certification organizations to ensure compliance to national regulations

- 联系当地区域的能源供应商，寻求更多的选择
- 联系以上认证机构，并确保符合国家法规

- Reach out to reputable energy consultants
- Ensure Certificates are recognized by local auditors
- REC's are a current option - VPPA's (virtual power purchase agreements are another option)

- 联系知名的能源顾问
- 确保证书得到当地审核员的认可

REC 是当前选项 - VPPA (虚拟购电协议是另一种选择)

FAQ's



Why Purchase Renewables?

- TE, our Customers and Shareholders are requesting increases in renewable electricity – TE is already >65%
- Straightforward method of addressing Scope 2 emissions equaling a Scope 3 reduction for TE
- Part of current path to TE 2030+ sustainability targets
⇒ Recognized industry objectives (Paris Accord & G7/G20...)
- Spur Investment into Renewable Production Projects

What is accepted as Renewables?

- Solar, Wind, Biomass, Geothermal, Hydro, Tidal
- Nuclear is NOT classified as Renewable

Pricing is Market Driven:

- Current price ranges of \$2-\$10+ per MWh
- Given the lack of significant investment, the Certificate pricing will likely remain volatile and is expected to rise due to demand increase for REC's over the years
- Plan your sourcing strategy ahead of time

为何要购买可再生能源？

- TE、我们的客户和股东要求增加可再生电力—TE 已经超过 65%
- 解决范围 2 排放等同于范围 3 减排的直接方法
- 实现 TE 2030+ 可持续发展目标的当前路径的一部分
⇒ 公认的行业目标 (巴黎协议和 G7/G20.....)
- 刺激对可再生生产项目的投资

哪些是公认的可再生能源？

- 太阳能、风能、生物质能、地热能、水能、潮汐能
- 核能不属于可再生能源

市场驱动的定价：

- 当前价格范围为每兆瓦时 2 美元至 10 美元以上
- 鉴于缺乏大量投资，证书定价可能会保持波动，并且由于多年来对 REC 的需求增加，预计会上涨
- 提前计划采购策略

FAQ's

Will we need to purchase Renewables annually?

- There is a yearly requirement to re-certify

Where and How to Buy Renewables?

- Inform yourself and use certified entities.
- Seek guidance or work with from Energy Consultants or your current energy supplier
- For Reference only:
 - ⇒ TE partners with Siemens Energy & Sustainability Management
 - ⇒ TE sources Renewable Certificates in multiple countries via certified partners such as Climate Impact Partners or Summit Energy Services (Schneider Electric)
 - ⇒ Renewable Energy Certification bodies exist in a majority of countries, contact them to ensure what you are purchasing is not “Fake” and is auditable per your reporting standards

FAQ's



需要每年购买可再生能源吗？

- 需要，目前是年度认证的要求

如何购买可再生能源？

- 咨询能源顾问或您当前的能源供应商，请知晓使用经过认证的实体：

以下仅供参考：

- TE 与西门子能源与可持续发展管理部门合作
- TE 通过 Climate Impact Partners 或 Summit Energy Services (Schneider Electric) 等认证合作伙伴在多个国家/地区获取可再生能源证书
- 大多数国家/地区都有可再生能源认证机构，请与他们联系以确保购买的不是“假货”并且可以根据您的报告标准进行审核

Recap & Next Steps



- **Know your future volume requirements**
- **Contact:**
 - ⇒ **Current utility providers and review their offer**
 - ⇒ **Other certified organizations that sell Certificates independent to your current provider**
- **Our expectation is that you invest in renewables**
- **Share your plan with TE team direct or via Survey by end March 23'**
- **知晓本公司的未来用用电需求**
- **联系方式：**
 - ⇒ **当前的市政供应商，查看报价**
 - ⇒ **其他可提供证书的经认证的组织或供应商**
- **我们期望您投资可再生能源**
- **在 3 月 23 日之前直接或通过调查与 TE 团队分享您的计划**

IREC Certification Process

- The following are links to the IREC website and a visual aid representing the REC (Renewable Energy Certificate) certification process:

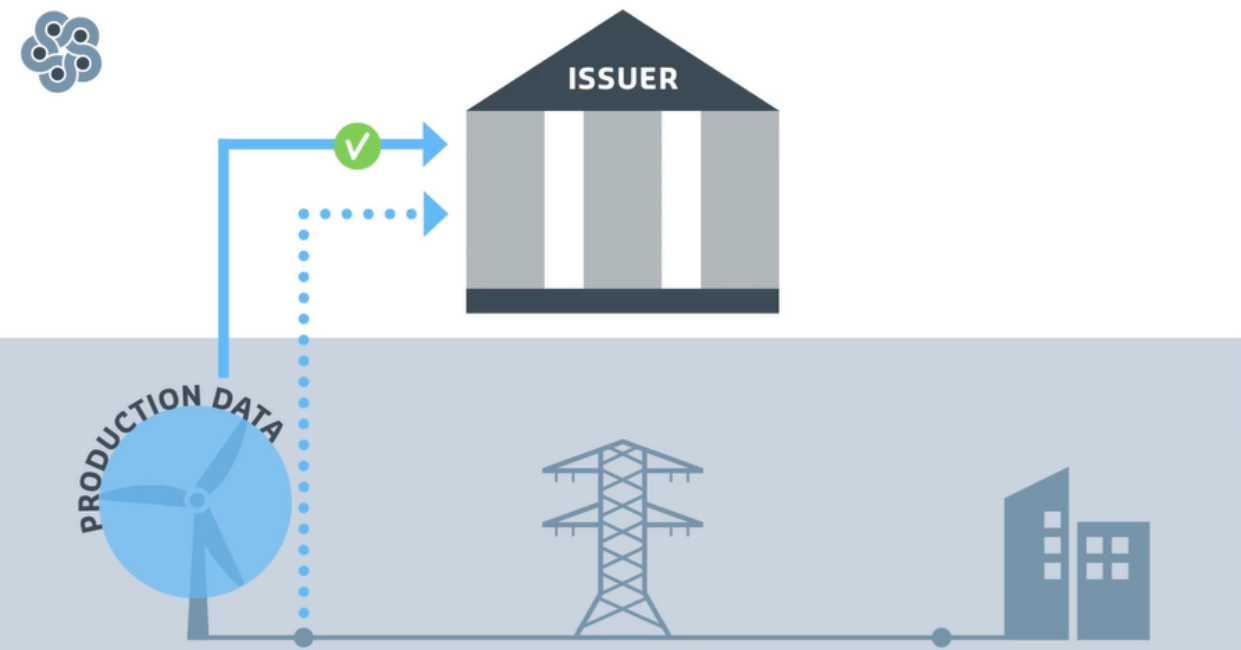
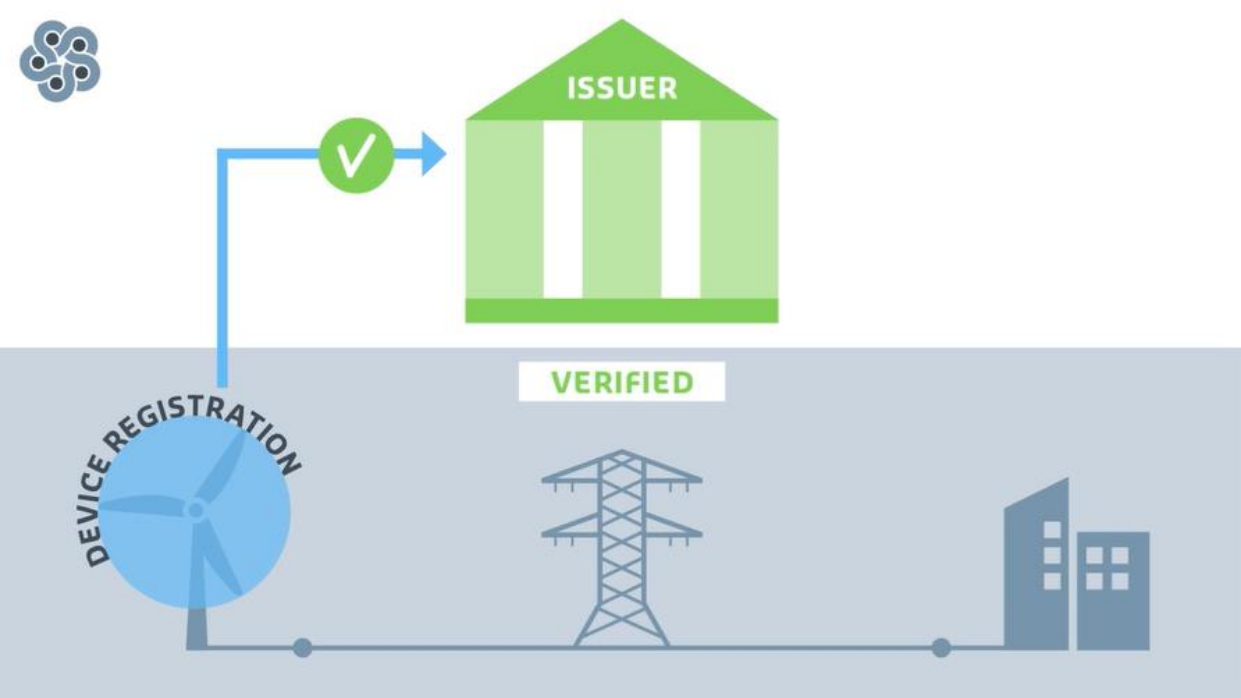
⇒ <https://www.irecstandard.org/>

⇒ <https://vimeo.com/141543977>

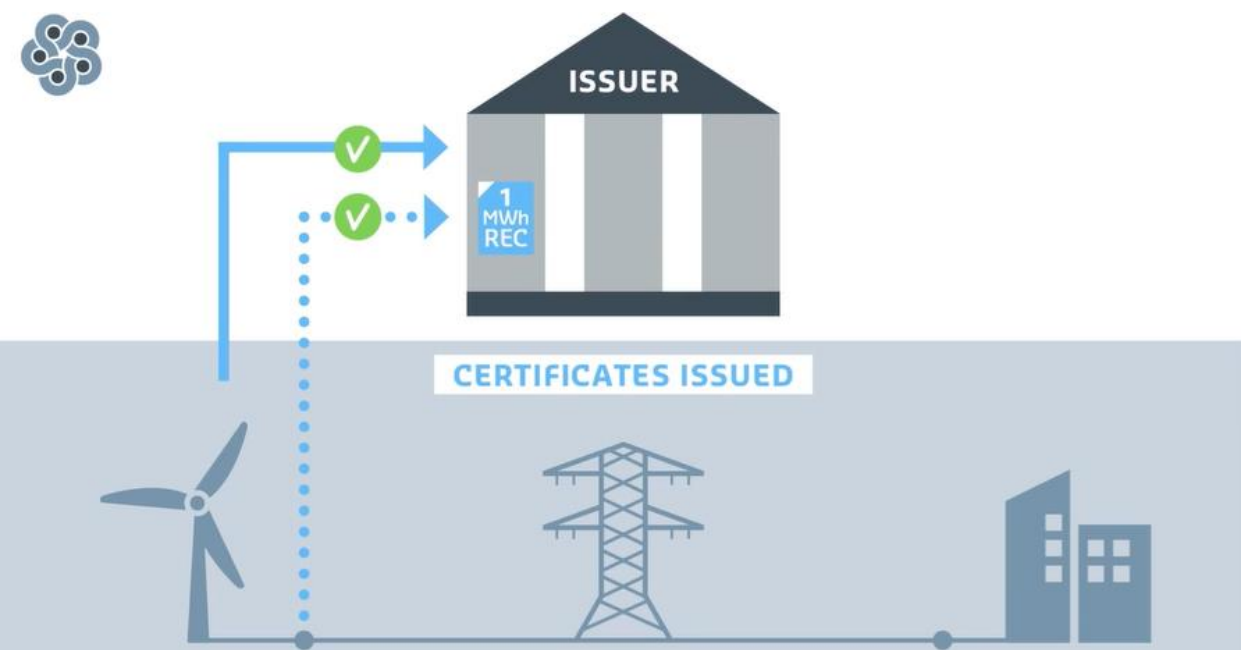
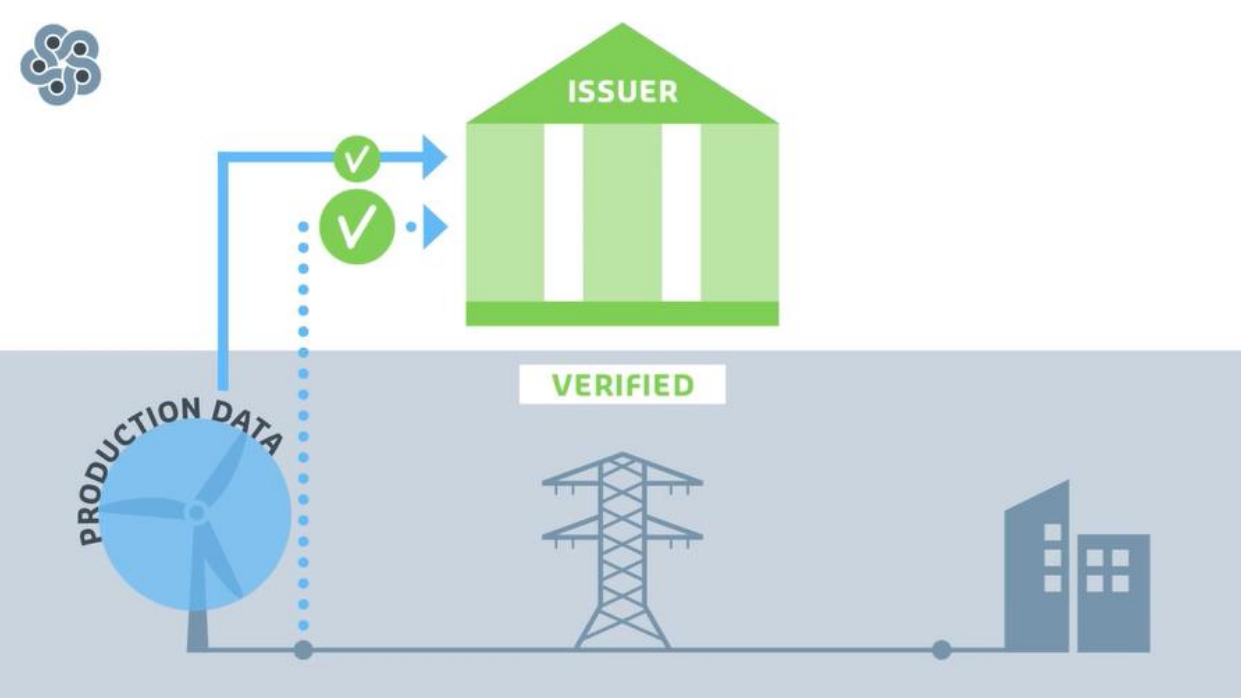
- The following slides are an extract of the video

- 以下是 IREC 网站的链接和代表 REC（可再生能源证书）认证过程的视觉辅助工具：
 - <https://www.irecstandard.org/>
 - <https://vimeo.com/141543977>

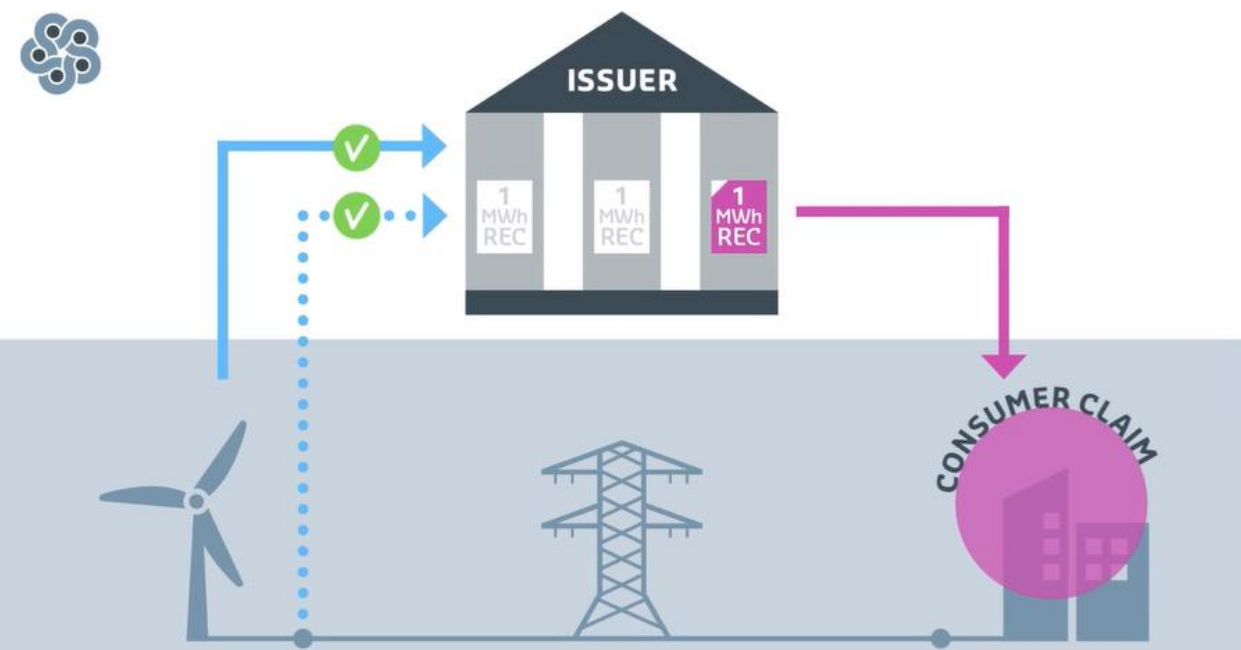
之后的幻灯片是视频的摘录



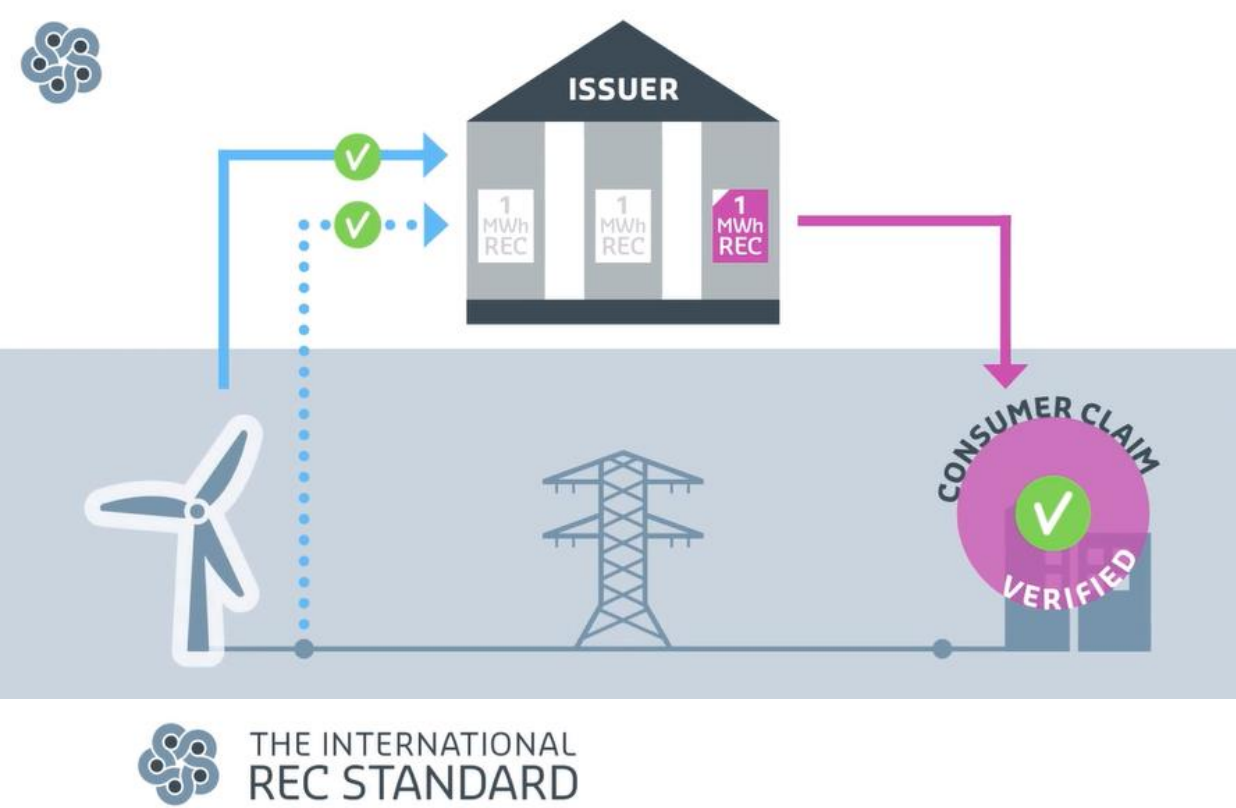
- In order to source Renewable Energy i.e., from windmill
 - ⇒ The device owner must first register it on the IREC registry by submitting detailed information about the device
 - ⇒ All documents are verified by a 3rd party
 - ⇒ Once approved the registrant must then submit meter reading information to inform them of the volume of energy being produced in MWh
- 为了获取可再生能源，如从风车
 - 设备所有者必须首先通过提交有关设备的详细信息在 IREC 注册表中注册
 - 所有文件均由第 3 方验证 一旦获得批准，
 - 注册人必须提交抄表信息，以告知他们正在生产的能源量（以兆瓦时为单位）



- This must be again verified by a 3rd party and only then can REC's be issued
- The IREC's represent a contractual agreement between the electricity generator and the electricity consumer
- IREC's introduce verifiable attribute ownership and encourage the development of green electricity markets
- IREC's can be traded within the central registry and can only be redeemed by a single consumer
- 这必须由第 3 方再次验证，然后才能发布 REC
- IREC 代表发电商和电力消费者之间的合同协议
- IREC 引入可验证的属性所有权并鼓励绿色电力市场的发展 IREC 可以在中央登记处进行交易，并且只能由单个消费者兑换



- Based on the IREC, consumers can make a public statement
- This statement is:
 - ⇒ Unique
 - ⇒ Reliable
 - ⇒ Transparent
- In order to make the statement more credible and verifiable, you should have a third-party audit your certificate redemptions
- Auditors should verify the correct number and type of certificates that have been redeemed
- 基于 IREC ， 消费者可以发表公开声明
- 这个声明是：
 - 独特
 - 可靠的
 - 透明的
- 为了声明更可信和可验证，您应该让第三方审核您的证书兑换
- 审核员应验证已兑换证书的正确数量和类型



- IREC's represent individual products and not commodities
- Every certificate is as unique as the generator that produced it
- Consumers can decide which type of production (renewable) they wish to purchase
- IREC 代表单个产品而不是商品
- 每个证书都与生成它的生成器一样独一无二
- 消费者可以决定他们希望购买哪种类型的（可再生）产品

Introduction to **How I-REC works**

This animation is developed by The International REC Standard
For more information go to www.irecstandard.org

PRODUCTION BY **VA** COMMUNICATION BY DESIGN

**ANY
CONNECTION
CAN CHANGE
THE WORLD**

EVERY CONNECTION COUNTS

