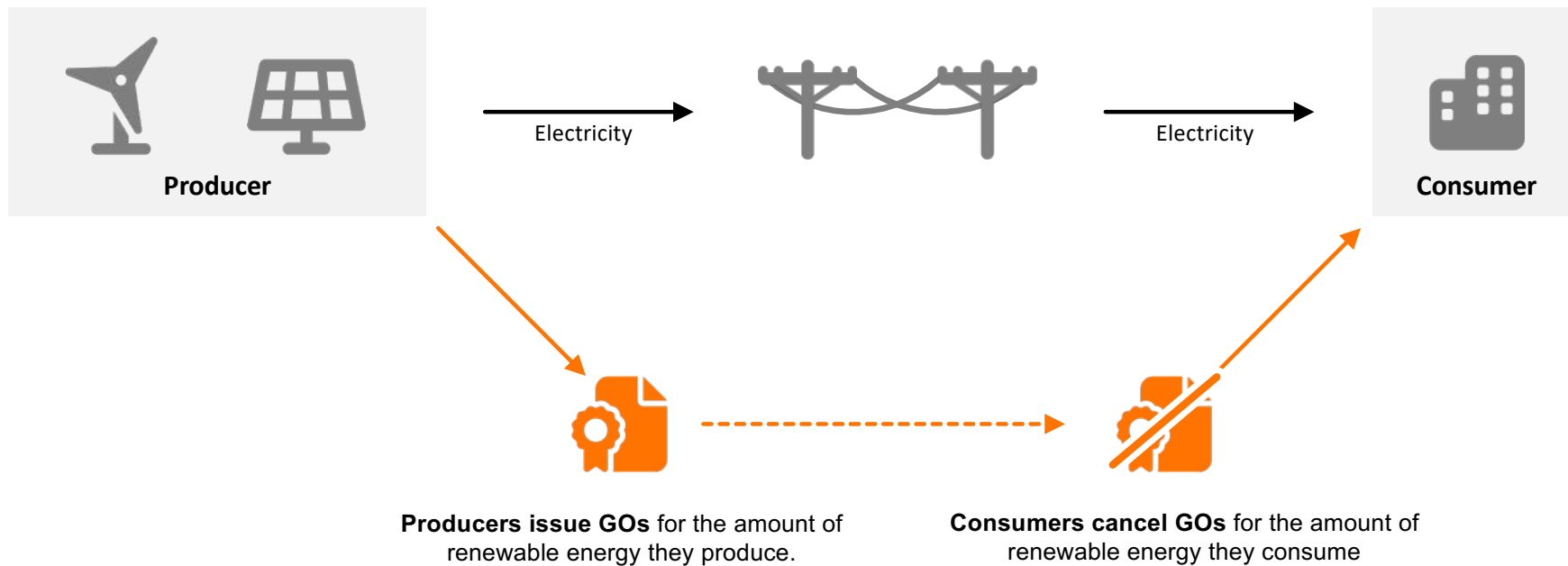


Energy Track & Trace

Granular registry in Europe for 24/7 carbon-free energy

8 November 2023 | RGI Expert Workshop "Industry in Transition"

Guarantees of origin (GOs) allow consumers to choose the source of the electricity they use and are basis for green tariffs.



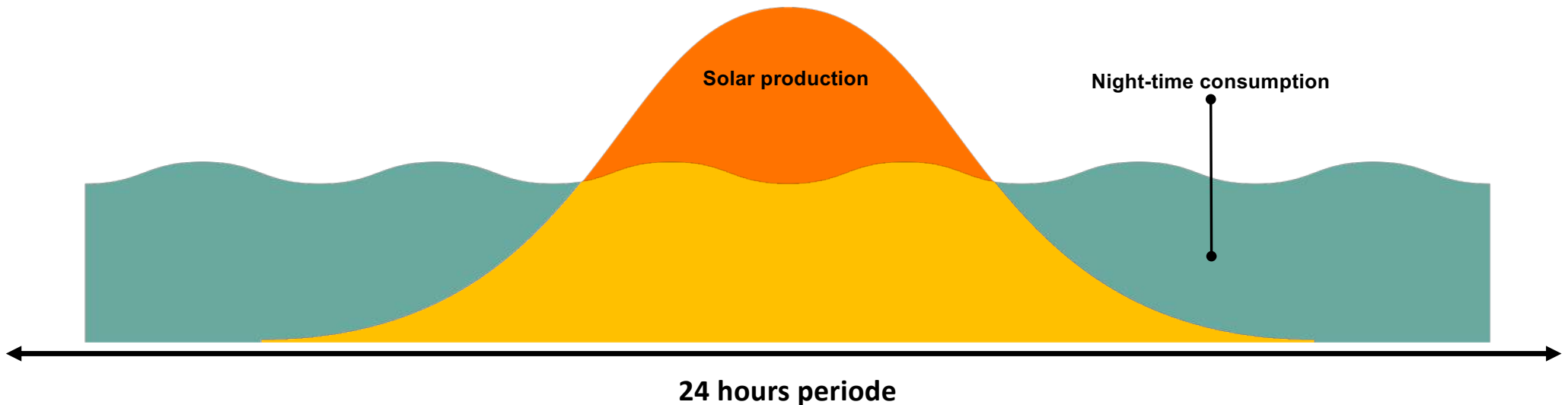
This system only does an annual matching of annual production and annual consumption.



Target: Guarantees of origin (GOs) should...

- ... standardise the status of green electricity in Europe ✓
- ... represent an additional value component for green electricity ✗
- ... support the investments in RE expansion ✗

Problem: Lack of consideration of the time dimension in the GO system



Physical reality

Generation and consumption have to be at the same time (simultaneity) due to a lack of good storage facilities.

In some hours we will reach 100 % RE in the next years; the last few hours will be particularly challenging.

Reality in the GO system

In the GO system, certificates are valid for one year; there is no simultaneity of generation and consumption.

This makes it easy to achieve 100 % RE that does not contradict the reality of the system. GOs also offer no price incentive for system-friendly behaviour.

Problem: Lack of consideration of the geographical dimension in the GO system

Physical reality

The capacity of the electricity grids between the various European countries is (unfortunately) limited.

Electricity exchange is therefore only possible to a limited extent, and there is no grid connection to Iceland at all.

Reality in the GO system

GOs can be traded between countries without restriction.

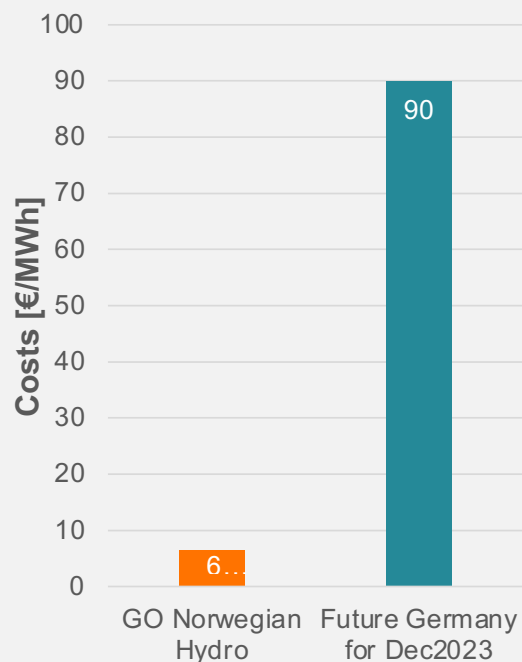
Physical boundaries of the electricity grid are not included.

Example Germany: Far more GOs are imported from countries such as Iceland and Norway than electricity.



Result: Non-consideration of temporal and geographic dimensions creates uninteresting product with limited value

Price comparison GO and electricity market price



Conclusion:

- GOs do not differentiate by time of production
- The geographical origin and the generation plant are less important

Consequences:

- Not an interesting product for customers
- No scarcity of certificates
- Low prices for certificates

Due to the low price level of GOs, they hardly incentivise any investment in RE



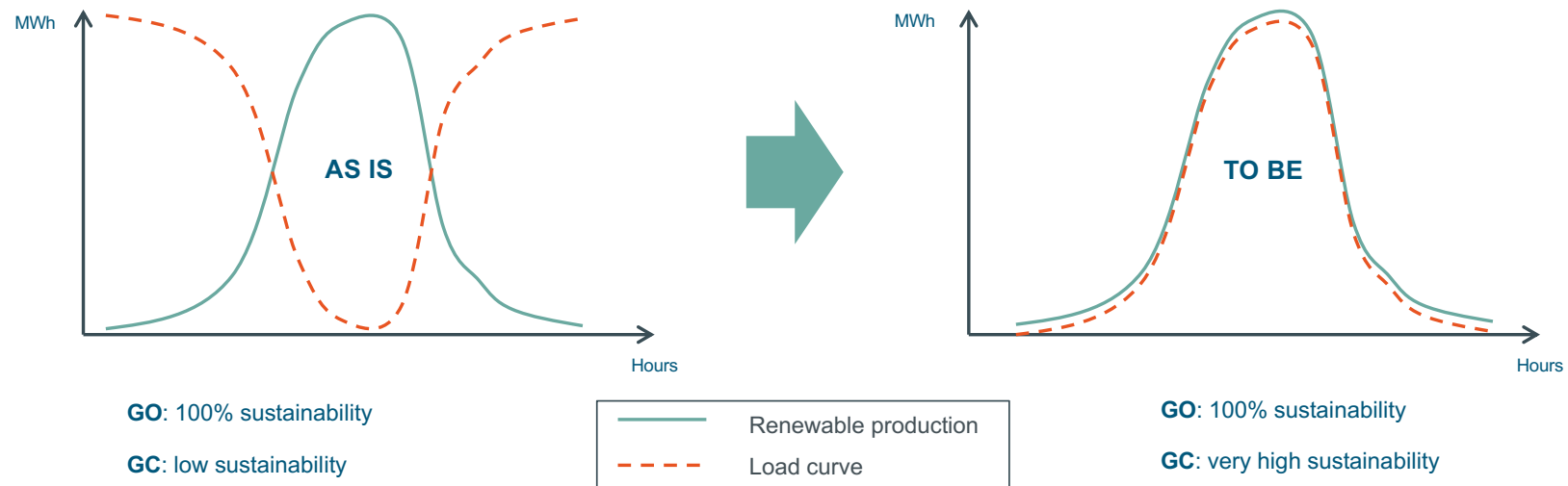
Reality: Guarantees of origin (GOs) have...

- ... a high administrative burden
- ... little benefit for the energy transition

We want to change this with Granular Certificates (GCs)

A system of granular certificates creates an incentive for demand to follow generation, and is more transparent

Indicative example:



WHY granular certificates?



Better integrate renewables



Incentives for storage investments



More transparency on sustainability



In anticipation of upcoming legislation (REDIII, GHG, ...)

Who is Energy Track & Trace?

Int. TSO and Issuing Body set-up to provide the tracking system

Purpose: Development of a **granular tracking solution** for 24/7 Carbon-Free Energy (CFE) that is applicable on European scale and includes cross-border exchange.



East Germany and Belgium



Estonia



Denmark



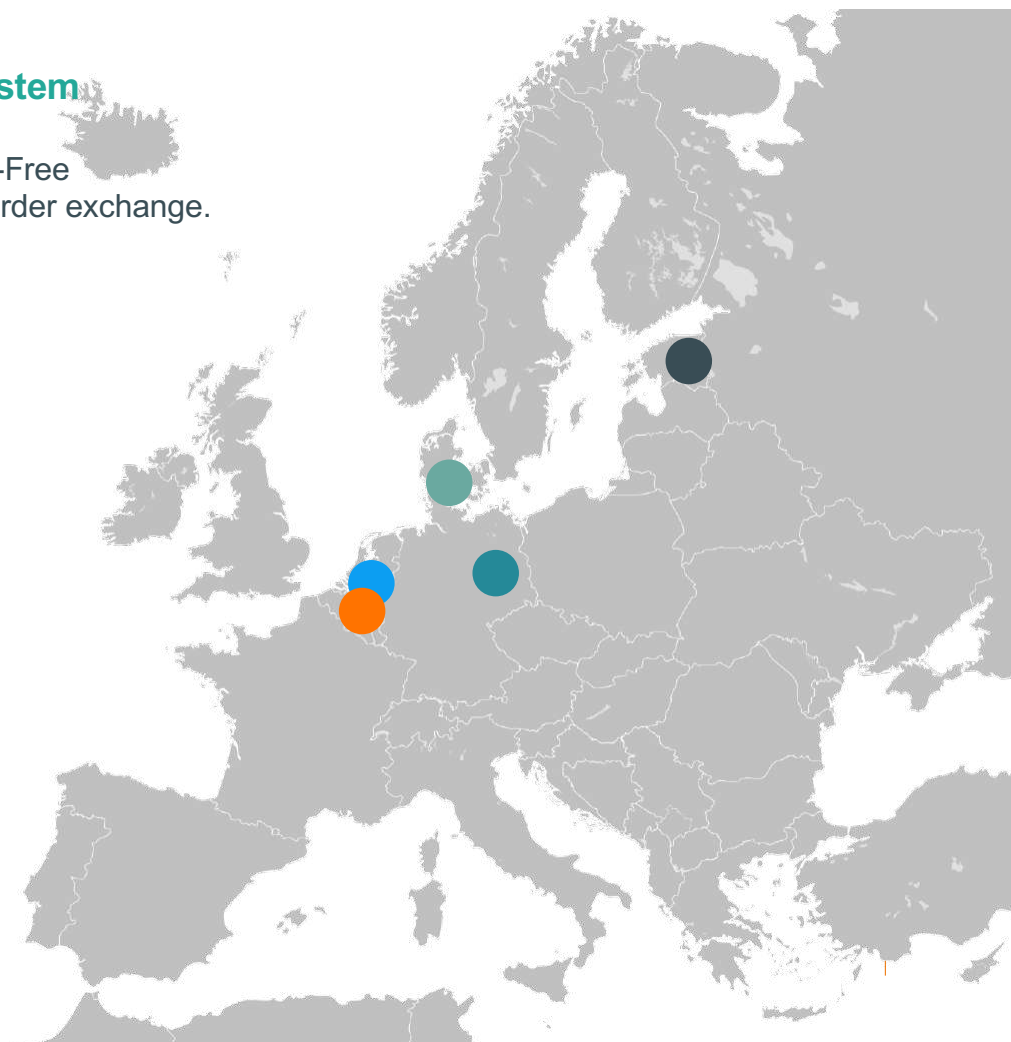
Netherlands

And a strong group of partners

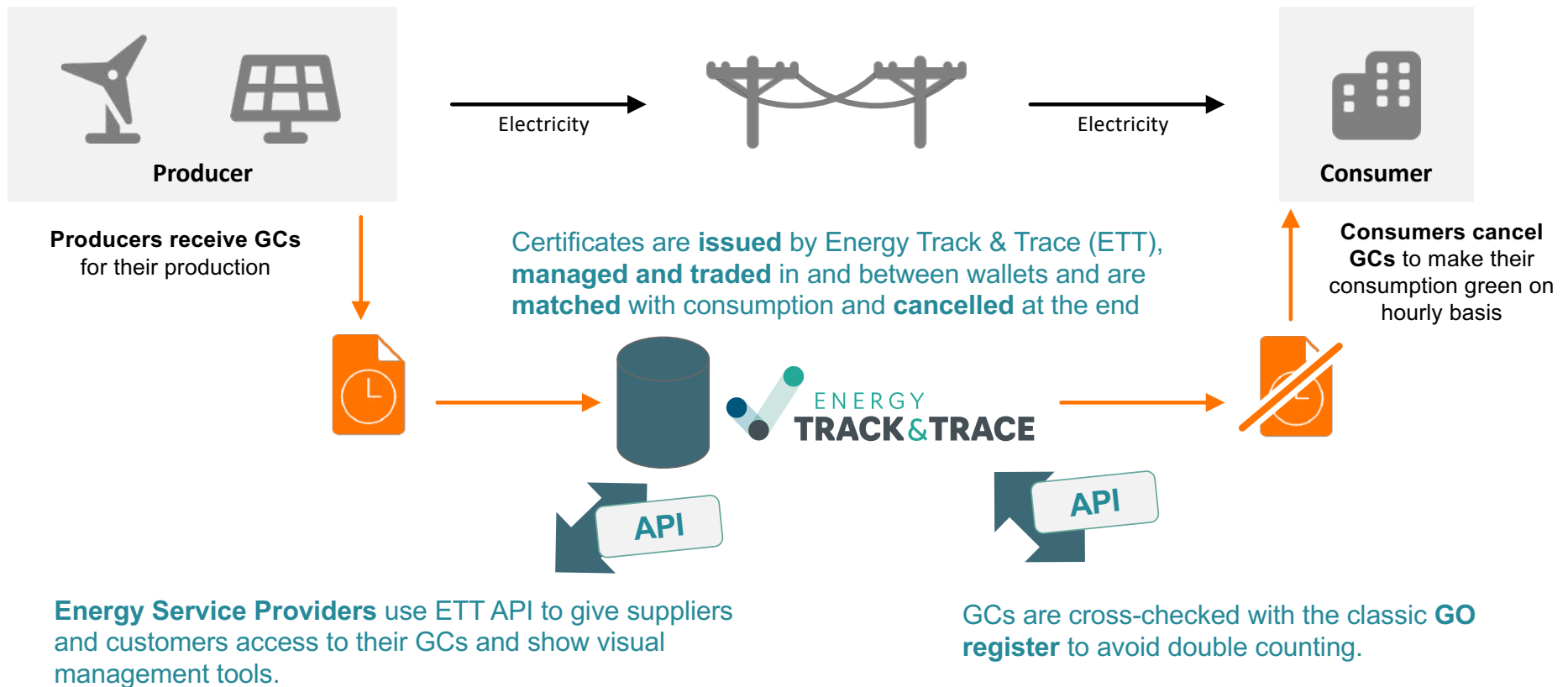
Energy Suppliers that provide clean energy and want to offer 24/7 CFE products.

Energy Buyers that develop and execute 24/7 CFE procurement strategies.

Service providers that offer market solutions, management systems and matching algorithms for Granular Certificates (GCs).



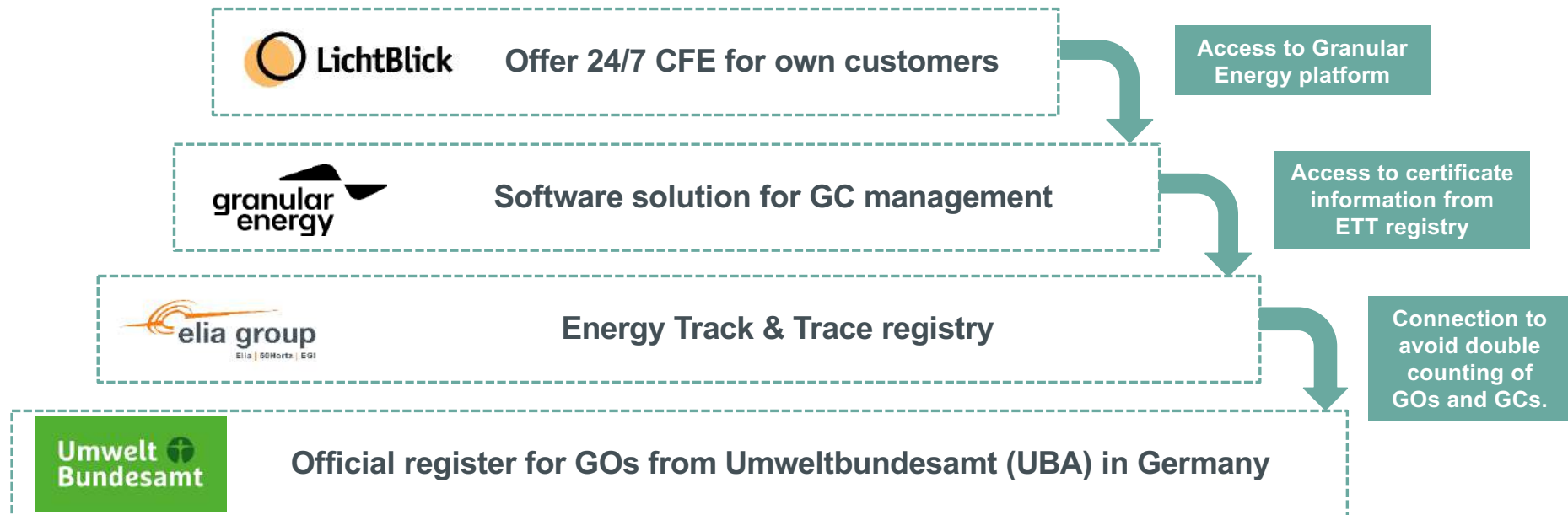
Analogue to the classic GOs Energy Track & Trace (ETT) generates granular certificates (GCs)



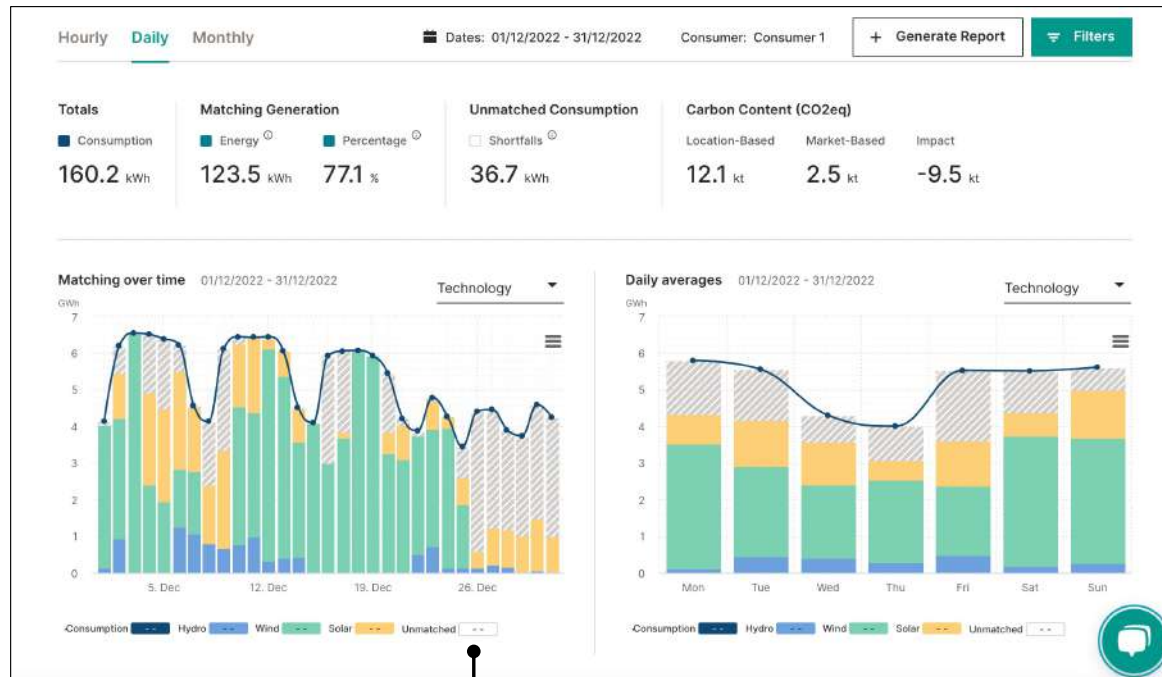
Results:

- **24/7 green electricity score** between 0 % and 100 % ✓
- **Matching corresponds to the physical possibilities** in the grid (simultaneousness, trading between countries only possible within the framework of grid capacities) ✓
- **Detailed visualisation** of the characteristics of your own electricity ✓
- **GCs as a value component** incentivise RE expansion ✓
- Strongly varying GC prices over time **incentivise investments in storage and flexible operation** (supporting the electricity price signal) ✓

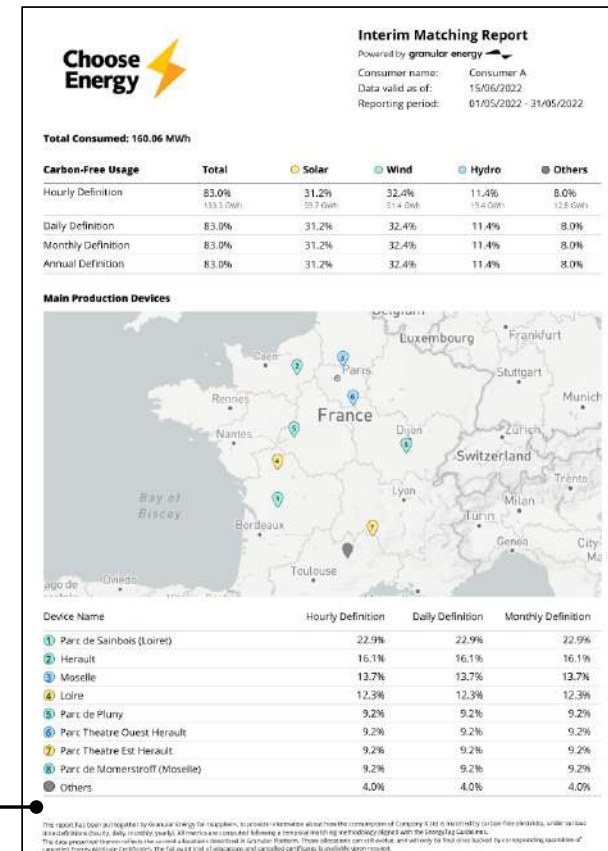
In a pilot project, we currently test 24/7 CFEs in Germany over their entire route with the official GO registry as basis



Example view of Granular Energy: Deeper insight for consumers into their electricity consumption.



Live Dashboards



PDF Reports

You can support Energy & Trace and our vision of granular certificates for green electricity in this way



As transmission system operator (TSO) or issuing body (IB):

- The local companies are responsible for setting up a granular register.
- As Energy Track & Trace, we are happy to include other companies from European countries in our group.
- Common standards and a common code base help to ensure that certificates can also be traded between the various registers in different countries

As electricity producer, supplier or large consumer:

- The first registers are already available in some of the countries where Energy Track & Trace has been implemented to date.
- Test the register together with us and gain your first experience with granular certificates!





Join our partner meeting

- For all people interested in Energy Track & Trace
- 14 December 2023, 10.00 – 11.30 am
- Online @Microsoft Teams
- Register [here](#)



Thanks for the exchange

Contact:

Marius Klemm

030/ 5150 3670

Marius.Klemm@50hertz.com

More information:

energytrackandtrace.com

