
A European Tracking System for Electricity (E-TRACK)

Background of the project

Presenter's Name

E-TRACK Consultation Meeting

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Point of departure (1/2)

Several **EU and MS policies** require to account for certain "attributes" of electricity (generation)

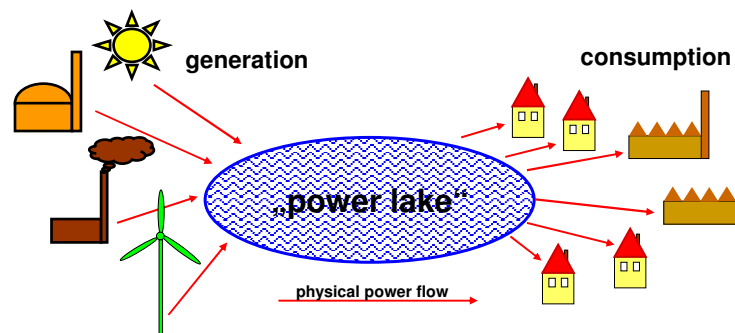
- Electricity disclosure / labelling
- EU targets for market shares of certain fuel sources and technologies (e.g. RES-E)
- Public support schemes, e.g. for RES-E and CHP
- Differentiated electricity tax (based on e.g. fuel source)
- Guarantees of Origin (GO) for RES-E and CHP
- Green Power for voluntary demand
- Statistical reporting on power generation and demand
- (other ?)

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Point of departure (2/2)

- Such “attributes”, which need to be accounted for, include
 - Fuel sources
 - Generation technologies (e.g. CHP)
 - CO₂ emissions and radioactive waste production (if not calculated based on average data)
 - Public support granted for generation
 - Accounting of RES-E generation for the EU target of the generation country
 - (Additional plant data?)
- Some of these attributes need to be “tracked” from generation to the final supplier or consumer
- The electricity market currently does not support such tracking 3

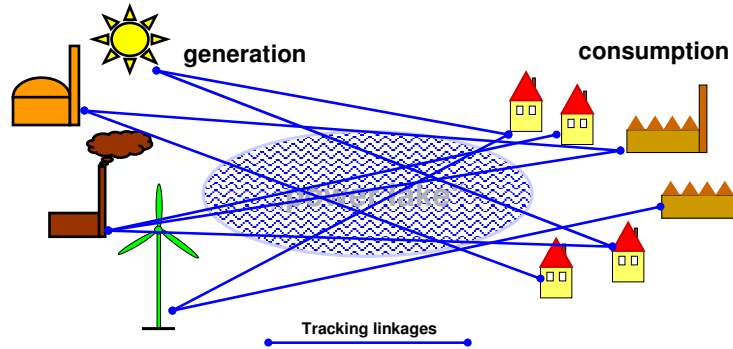
Tracking of electricity attributes (1/3)



Definition of “tracking”:

- Create unambiguous links between power plants and electricity sold to final consumers
- Transfer information about power generation attributes to consumers or other parties (e.g. regulators, governments)

Tracking of electricity attributes (2/3)



Definition of “tracking”:

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- Transfer information about power generation attributes to consumers or other parties (e.g. regulators, governments)

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Tracking of electricity attributes (3/3)

“Explicit” vs. “implicit” tracking mechanisms:

- **“Explicit” tracking:**
Tracking based on a mechanism, which creates a link between generation and consumption
Options for “explicit” tracking:
 - Tracking based on a certificate system (such as RECS)
 - Contract based tracking
- **“Implicit” tracking:**
Tracking using statistical data or averages
e.g. UCTE/Nordel generation mix, national generation mix, individual company generation mixes

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Examples of existing (explicit) tracking schemes

- USA:
 - Texas (ERCOT)
 - New England Power Pool Generation Information System (NEPOOL GIS)
 - Pennsylvania, New Jersey, Maryland (PJM region)
- Netherlands: E-Certificate system for RES-E
- UK, Sweden, Poland and other MS: certificate schemes for RES-E obligations
- Austria: certificate scheme for disclosure
- Several MS: Implementation of Guarantees of Origin (GO) for RES-E (CHP to come)
- Renewable Energy Certificate System (RECS)

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Some major issues for the design of tracking schemes

- Definition of the **relation** of the tracking system to the different policies (disclosure, support, RES-E targets etc.)
Compatibility of the tracking scheme with support schemes, e.g. feed-in or obligations
- **Bundling** of all relevant attributes together or **separation**? (e.g. as a multi-certificate system)?
- Separation of attributes from electricity **contracts** or not?
- Issuing of attributes **on request only**, for certain parts of the electricity market or full coverage?
- Introduction of a **redemption** mechanism for attributes
- Central **registry**, several registries or no registry?
- Single **organisation** for issuing of attributes?
- **Data content** of the attributes, standard size (e.g. 1 MWh), reference time period

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Some criteria for the evaluation of tracking options

- Practicability
- Compatibility with existing procedures and data
- Effects on electricity markets and electricity attribute markets (e.g. market liquidity, support policies)
- Reliability (robustness against errors or fraud)
- Accuracy of results
- Cost
- (other ?)

The order of criteria shown here does not indicate preferences.

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Most relevant previous projects and other activities

- Consumer Information on Electricity (CIE)
http://europa.eu.int/comm/energy/electricity/publications/index_en.htm
- Consumer Choice and Carbon Consciousness for Electricity (4C Electricity)
<http://www.electricitylabels.com>
- Renewable Energy Guarantees of Origin: Implementation, interaction and policy instrument (RE-GO, part of the SETREC/GO project)
<http://www.re-go.info>
- Association of Issuing Bodies (AIB) (operation of RECS system and RE-GO schemes)
<http://www.aib-net.org>, <http://www.recs.org>

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Objectives and work plan of the project

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Project objectives

Overall goal of the project

- To draft a **harmonised standard** for tracking electricity generation attributes in Europe

Additional project objectives

- To cover **all relevant tracking requirements** which are imposed by European and national policies (disclosure, guarantees of origin, support schemes, Green Power etc.)
- To **facilitate cross-border trade** of electricity and generation attributes
- To **avoid multiple counting** of electricity attributes (e.g. from renewable energy sources)
- To simplify **verification** of tracking procedures

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Expected results

- An **analysis of existing schemes** for the allocation of electricity generation attributes
- Detailed insight into the **policy and market requirements** for the design and operation of tracking systems
- A **draft blueprint for a harmonised standard** for tracking electricity in Europe (technical and non-technical aspects), covering generation from all sorts of energy sources
- A detailed **assessment of the cost and benefits** of a European tracking scheme
- Results from **intensive consultations** with stakeholders on the European and national level
- A **revised blueprint** for the tracking standard, which takes into account the results from the consultations
- A variety of **dissemination** activities

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Project team

Project consortium

- Oeko-Institut – DE (coordinator)
- Energy Research Centre of the Netherlands (ECN) – NL
- Pure Energi – GB
- Austrian Energy Agency (AEA) – AT
- IT Power – GB
- Observatoire des énergies renouvelables (Observ'ER) – FR
- Lithuanian Energy Institute (LEI) – LT
- Büro für Energiewirtschaft und technische Planung (BET) – DE
- Energie-Control GmbH – AT
- Gestore della rete di trasmissione nazionale (GRTN) – IT
- Agence de l'Environnement et de la Maîtrise de l'Energie (Ademe) – FR

Intended subcontractors

- Eidg. Anstalt für Wasserversorgung etc. (EAWAG) – CH
- EC Baltic Renewable Energy Centre IEO – PL

Consultation Partners

- NordPool
- TenneT – NL
- Vattenfall – SE
- Energy Agency of the Republic of Slovenia (Agen-RS) – SL
- Energinet.dk – DK
- Etrans/Swissgrid – CH
(to be extended)

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Relationship with the Association of Issuing Bodies (AIB) and RECS-International

- AIB is the only European organisation on standardisation of electricity generation attributes (“system providers”)
 - AIB operations are covering more than 15 countries
 - Current focus on RES-E, but broader scope envisaged
- Several E-TRACK participants are AIB members
- RECS International is the key organisation of users of (renewable) electricity generation attributes

Therefore the project team suggests:

- E-TRACK is a project independent from AIB operations, but synergies should be exploited where possible
- RECS International is an important stakeholder group for E-TRACK

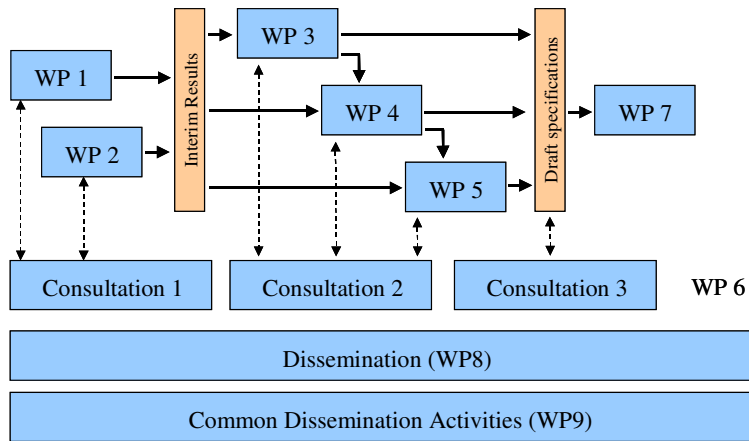
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Work packages and WP leaders

WP 1: Analysis of existing allocation schemes	ECN
WP 2: Analysis of the framework conditions for tracking	ECN
WP 3: Non-technical specifications	Oeko
WP 4: Technical specifications	Pure Energi
WP 5: Cost Assessment	AEA
WP 6: Consultation Process	Oeko
WP 7: Finalisation of system specifications	Pure Energi
WP 8: Dissemination	IT Power
WP 9: Common Dissemination Activities	Oeko
WP10: Project Management	Oeko

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Logical project structure



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Project schedule

Project phases	Inception					Draft design										Review					Dissemination								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Duration of the project (in months)																													
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Project Coordination																													
Project meetings																													
Consultation workshops																													
Project Conference																													
Steering Committee																													
Deliverables																													

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Interaction of the tracking scheme and RES-E policies

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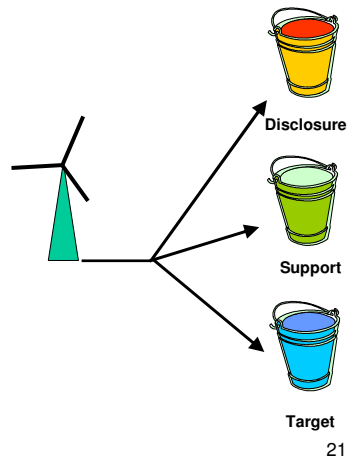
A selection of most relevant RES-E policies

- **Guarantees of Origin (GO)** might be used for purposes of trading RES-E and for electricity disclosure
→ **“Disclosure attribute”** for the tracking scheme
- **Public support schemes** are used to give incentives to investors and operators of RES-E plants.
Such schemes usually limit the accumulation of support from different schemes
→ **“Support attribute”** for the tracking scheme
- **EU targets** for market shares of RES-E can be fulfilled by qualifying cross-border trades
Each unit of RES-E should only be counted in one country
→ **“Target attribute”** for the tracking scheme

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Three major purposes of a tracking scheme for RES-E

- Tracking the **“Disclosure attribute”**
Who owns the value for the respective unit of RES-E for disclosure purposes?
- Tracking the **“Support attribute”**
Has the respective unit of RES-E been supported by a public support scheme?
- Tracking the **“Target attribute”**
Who owns the value for the respective unit of RES-E for disclosure purposes?



A fundamental design question

Should tracking schemes keep the three attributes (disclosure, support and target) always together or could they also be separated?

More detailed questions:

- Should Guarantees of Origin be the only carrier of information about the “target attribute” or could it be handled separately?
- Should the “support attribute” always be linked to Guarantees of Origin or could the support be handled separately? (e.g. by a separate certificate system)
- If separation of attributes is allowed, how can multiple counting of attributes be prohibited?
- Can systems with and without bundling of attributes coexist in the internal energy market?