

## A European Tracking System for Electricity (E-TRACK)

### Overview on the status of the project

[speaker]

Third Consultation Workshop [country]  
[place, date]

### 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 **support 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



## Some highlights and recent developments

- E-TRACK project receives attention by major stakeholders
- Commission is interested in findings
- E-TRACK has supported decision-making by governments in several countries (e.g. in the Nordic area)
  
- The next challenge is the implementation of the Guarantee of Origin for high-efficient CHP by Member States (due ~ June 2007)
  - Commission focuses on harmonised implementation, EECS system as reference
  - E-TRACK can give guidance on how to do this

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Intelligent Energy  Europe

## A European Tracking System for Electricity (E-TRACK)

### Overview on the status of the project

Christof Timpe (Öko-Institut)

Third Consultation Workshop Germany  
Berlin, 21 November 2006

### Recent developments in Spain

- A legislation has been passed for disclosure : Real Decreto 1454/2005 2nd December 2005  
Chapter 3 « Measures for protecting consumers », art 110 bis:
  - obligation to detail energy sources used for the electricity supplied during the preceeding year
  - Provision of information on CO2 emissions and nuclear waste produced during the same year
  - Detail of source of purchase : bilateral physical contracts / imports / power exchanges
  - Power exchange operator has to supply the same information to buyer
- Still no GO legislation, but a project of decree from 23rd Feb 2006. CNE would be in charge of registry, GOs would be redeemable
- Proposal for CHP GO from 20 sept 06

A European Tracking System for Electricity (E-TRACK)  
3rd Workshop - Paris - 20th December 2006

### Recent developments in France

- Decree for GO passed : n°2006-1118, 5th september 2006
- GO for CHP and RES
- Beginning and end date of production period, corresponding to metering period
- No indication of support received
- Not tradable
- Not possible to ask for GO before 1st January of current year
- Controls on samples up to 3 years after declaration
- Can be earmarked
- « A ce jour aucune garantie d'origine n'a été délivrée en France depuis la parution du décret 2006-1118 »
- Decree 30 April 2004 (n°2004-388), but still no guidelines for disclosure

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## A European Tracking System for Electricity (E-TRACK)

### Revised Tracking Options

[speaker],  
Dominik Seebach (Öko-Institut)

Third Consultation Workshop [country]  
[place, date]

### Scenarios as a tool for a structured analysis of options for tracking systems

- The analysis in WP 3, WP 4 and WP 5 is based on a number of scenarios (“Options”) on how tracking could be implemented
- The scenario tool provides a structured and harmonised basis for the discussion of tracking options
- The scenarios assume the implementation of **one co-ordinated** tracking system in one or several countries (“E-TRACK bubble”)
- “Exports” and “imports” refer to the interaction with countries or regions with different types of tracking schemes
- A first set of options presented in the 2nd Consultation Round and the respective evaluation was revised and extended based on the feedback by stakeholders

## Major descriptors for the scenarios

### General features of tracking scheme

- Use of explicit tracking
- Use of registries
- Use & type of statistical averages (implicit tracking)
- Handling of electricity without known attributes

### Tracked information

- Energy sources
- Environmental indicators
- Support

### Uses of tracking

- Inclusion of GO
- Disclosure
- Support schemes (facilitation of support or transparency only)
- RES-E target accounting

### Reliability and verification measures

- Redemption
- Independent verification

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## Selection process

- Discussion and rough evaluation of a larger number of scenarios
- Pre-Selection of three scenarios and refinement
- Development of a first draft recommendation
- Consultation on first draft recommendation
- **Revision and extension** of scenarios and evaluations
  - All systems are assumed to be mandatory
  - New: Option 0 (contract based system)
  - Cost as separate assessment criterion
- Definition of a Draft E-TRACK Standard providing for a minimum level of both individual quality and harmonisation of different tracking systems
- **Consultation on draft E-TRACK Standard**
- Finalisation of the E-TRACK Standard

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## Rough numeric assessment including sub-criteria

Criterion	Option O	Option A	Option B	Option C
Sub-aspect	Contract	Ex post	Certificates + RM	Ambitious Certificates
<b>Informational value</b>	3	3	4	5
product differentiation/distinction of products	0	0	+	+
generally usable for support and target accounting	-	-	0	+
<b>Accuracy</b>	2	2	4	5
avoiding multiple counting	0	-	+	+
correct data input	-	0	+	+
<b>Robustness</b>	2	1	3	4
resistance against distortions (intended or unintended by market actors)	-	-	0	+
<b>Feasibility</b>	2	4	4	2
accordance to regulatory and legislative framework	+	+	+	-
accordance to market principles	-	+	+	-
effects on liquidity of markets	-	+	+	+
fair participation of all market players	0	0	0	-
<b>Cost</b>	2	4	3	1
Cost for implementation	+	+	0	-
Cost for operation	-	0	0	-
<b>Flexibility</b>	4	4	3	1
ability to adapt to different national or regional frameworks	+	+	+	-
ability to adapt to changes over time	+	+	0	0

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## NEW: Tracking Option 0: “Contract based system“ (1)

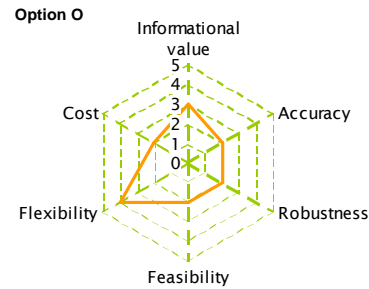
- Trade of attributes **can not be de-linked** from contracts for physical delivery of electricity
- **Explicit tracking** is mandatory except for electricity of unknown origin (best available information)
- Implicit tracking includes an internal **power exchange mix** and (uncorrected) **production statistics**
- **GO** not integrated in the tracking scheme, **certificates** are no essential aspect of the tracking option
- Basic level of **standardisation** (definition of energy clusters, production period, etc.)
- **Selective verification** by the regulator

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## Tracking Option 0: “Contract based system“ (2)

### Evaluation

- Likely to increase complexity and to reduce liquidity of electricity markets
- Trading on exchanges not much affected (exch. mix)
- Provides useful information (close to electricity market)
- Uncorrected production statistics result in double counting
- Cost vary depending on the level of verification
- Flexible



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## Tracking Option A: "Ex post contract tracking" (1)

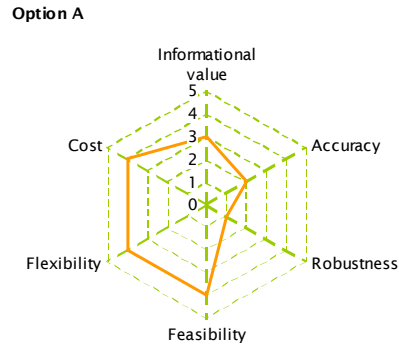
- Attributes are allocated mainly based on the [net electricity trading activity](#) between market participants
- The allocation requires an [iterative, ex-post calculation](#) procedure, which approximates the “ideal” figures
- Power purchased from exchanges and undisclosed imports will be assigned with default data ([production statistics](#))
- [Other tracking options](#) (contracts with attributes and certificates, in parallel to the main scheme) required for specific products
- Energy sources are not standardised
- GO not integrated in the tracking scheme

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## Tracking Option A: "Ex post contract tracking" (2)

### Evaluation

- Ex post contract tracking is in between of explicit and implicit
- System is very flexible, cost could be low
- Fits well with markets, but acceptance not clear
- Coexistence of tracking options (GO, certificates, ...)
- Statistics limited, however no residual mix
- Verification can be difficult



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## Tracking Option B: "Voluntary certificate system plus residual mix" (1)

- Explicit tracking based on **certificates, mandatory for RES-E and HE-CHP**, optional for all other generation
- Implicit tracking based on **regional residual mixes; caps** on the use of residual might be introduced
- Undisclosed imports: use exporters' residual mix (if available)
- Exports must be disclosed and registered (residual possible)
- Energy sources standardised, env. indicators included
- **GO fully integrated** in the tracking scheme, RES-E targets can be verified based on tracking results
- The whole system is **mandatory only for RES-E and HE-CHP** (other options exist), redemption of certificates required
- Support for RES-E and HE-CHP can be independent from tracking certificates

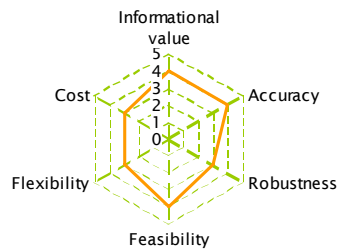
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## Tracking Option B: "Voluntary certificate system plus residual mix" (2)

### Evaluation

- Within the system, accuracy and robustness are high (RES-E, CHP)
- Informational value depends on market share of the residual mix
- Feasibility and flexibility relatively high
- Support certificates might confuse markets
- Availability of other tracking options reduces overall accuracy and robustness
- This option could be an interim stage towards a more comprehensive system depending on market development and needs

Option B



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## Tracking Option C: "Ambitious certificate system" (1)

- Fully **mandatory certificate system** for all types of generation
- **Residual mix** only allowed for **limited** purposes, e.g. losses (calculated from unused certificates on a European level)
- **GO fully integrated** in the tracking scheme, RES-E targets can be verified based on tracking results
- Single European certificate registry
- Exports and imports should be associated with attributes
- Energy sources standardised, envir. indicators and full information on support included
- System is **mandatory for disclosure**, no other tracking options
- Support for RES-E and HE-CHP can be included in tracking system (separate allocation procedure possible)

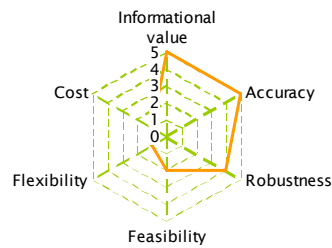
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## Tracking Option C: "Ambitious certificate system" (2)

### Evaluation

- Comprehensive and exclusive tracking system
- High share of explicit tracking
- Mandatory redemption of certificates
- Robustness slightly reduced due to option for a separate support allocation mechanism
- Very strict system strongly reduces feasibility (e.g. automatic issuing of certificates)
- Advanced system has only very limited flexibility

Option C



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<b>Feasibility</b>	2	4	4	2
accordance to regulatory and legislative framework	+	+	+	-
accordance to market principles	-	+	+	-
effects on liquidity of markets	-	+	+	+
fair participation of all market players	0	0	0	-
<b>Cost</b>	2	4	3	1
Cost for implementation	+	+	0	-
Cost for operation	-	0	0	-
<b>Flexibility</b>	4	4	3	1
ability to adapt to different national or regional frameworks	+	+	+	-
ability to adapt to changes over time	+	+	0	0

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## A European Tracking System for Electricity (E-TRACK)

### Proposal for the Tracking Standard (Part 1)

[speaker],  
Christof Timpe, Dominik Seebach (Öko-Institut),  
Herbert Ritter (AEA), Diane Lescot (ObservER)

Third Consultation Workshop [country]  
[place, date]

### Lessons from the discussion on tracking options

- Contract tracking and de-linked tracking can be combined, as long as the proper accounting of attributes is ensured.
- Any tracking system should feature explicit and implicit tracking.
- The share of implicit tracking should be reduced to the extent necessary, because it does not support differentiation in the market with regard to attributes.
- Explicit tracking should be based on registries, which allow the ownership of attributes to be tracked.
- Guarantees of Origin for RES-E and CHP should be integrated into the explicit tracking mechanism.
- Inter-registry transfers should be provided by a centralised hub.
- Implicit tracking should be based on a Residual Mix.

## Tracking standard vs. tracking systems

- The second round of consultations has discussed certain tracking **systems**, which could be implemented in a country.
- Different from this, the project is developing a **standard** for tracking electricity in Europe, which will be able to accommodate a variety of individual tracking systems.
  - This approach follows the subsidiarity principle.
  - The term “standard” is not (yet) implying a formal standard under CEN or Cenelec rules.
- The use of any tracking systems outside of the standard can lead to multiple counting and should be avoided.

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## Explicit vs. Implicit Tracking

- Explicit
  - Use of certificates or contract-based methods, such that the ownership and status of attributes can be specifically identified at any point in time.
- Implicit
  - Retrospective allocation using production averages and statistics.
- Explicit evidence is to be used wherever feasible and practical.
- Implicit information should be used only where explicit evidence is unavailable or impractical.

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## Explicit Tracking

Working with registries

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## Schemes & Domains (1)

- A scheme represents a certain policy for which results of tracking can be used, e.g. disclosure, a certain support system, or RES-E target accounting.
- A domain consists of a geographical area (e.g. a Member State) and one or several schemes.
  - E.g. Disclosure in Austria
- A domain is set up by one or several Scheme Authorities, which also appoint the Issuing Body and other actors.
  - E.g. a ministry responsible for disclosure
- The relationship of different schemes and between schemes and the tracking system must be clarified.
  - E.g. how is supported RES-E generation allocated to final suppliers for purposes of disclosure?

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## Schemes & Domains (2)

- Within each domain, certificates for explicit tracking can be issued, transferred and redeemed (certificate life cycle).
- Based on the Tracking Standard, certificates can also be transferred to other registries (e.g. the same scheme in another country), and can be redeemed there.
- Specific regulations for Disclosure:
  - Disclosure domains also provide for a residual mix procedure.
  - Disclosure statements must be based on a sufficient number of redeemed certificates, or the residual mix.

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## Certificates & Registries (1)

- Certificates carry the evidence of electricity generation (usually 1 MWh), and the related attributes and scheme associations.
- Certificates can be issued based on plant accreditation and meter readings.
- Registries track the existence and ownership of certificates.
- Certificates can be redeemed in order to realise their value.

Certificate
Cert No. XYZ123
Face Value: 1 MWh
Scheme associations: Disclosure
Energy Source: Coal
CO2 Emissions: 890 g/kWh
Nuclear waste: 0 µg/kWh
Plant code: XYZ
....

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## **Certificates & Registries (2)**

- Guarantees of Origin are integrated in the certificate system.
  - The qualification of a certificate as GO is recorded as one of the attributes.
  - A biomass CHP plant, which is eligible for GO both for RES-E and HE-CHP, will receive certificates with attributes for both types of GO.

## **Certificate-based Approach: Aspects of Using Certificates**

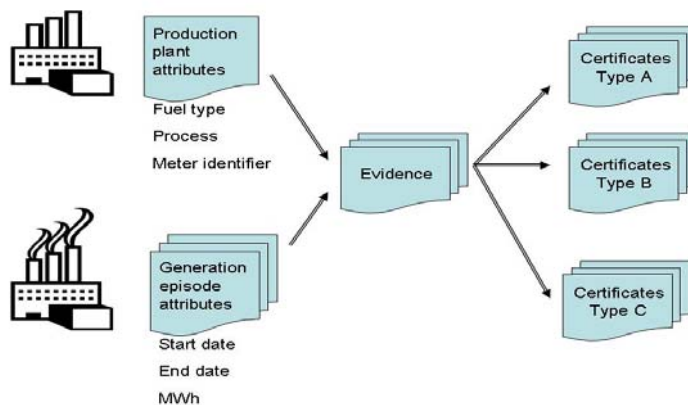
- Generation attributes are separated from the energy.
  - Can be traded independently
  - No adverse impact on commodity energy trading
  - No electrical connection necessary between producer and consumer (but not clear whether such certificates should be acceptable for disclosure)
  - Very similar to carbon trading in many ways
- If required, certificates can also be used for contract tracking
  - Electricity contracts would then include agreement on the transfer of certificates between the parties of the contract
- Ownership is certain at any point in time
  - Independently verifiable

## Principle of Uniqueness

- For **each use** evidence must:
  - Exist once and only once
  - Be owned exclusively
  - Be only used once
- For the E-TRACK standard this means:
  - Data is independently verified
  - Evidence relates to an event that actually happened
  - The tracking system must be secure
    - i.e. must not lose or create data itself
  - Upon use, that evidence is no longer eligible

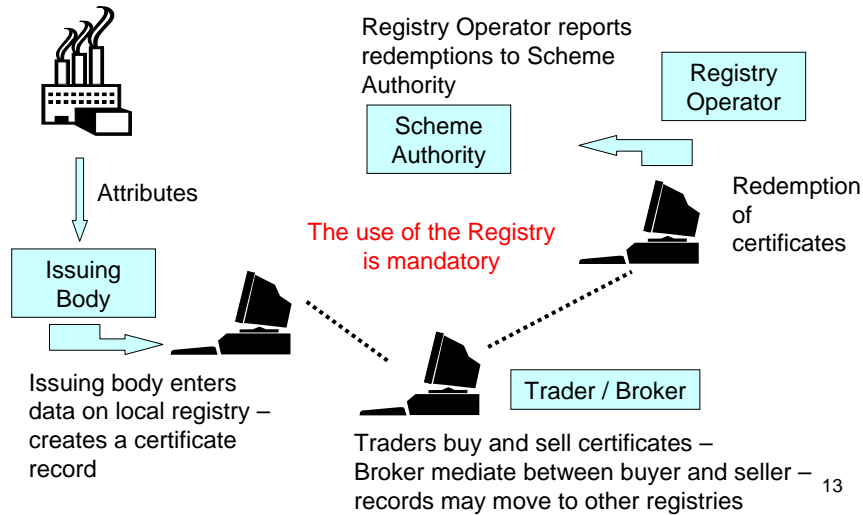
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## Overall Concept



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## Lifecycle of Certificates



## Data Collection Requirements

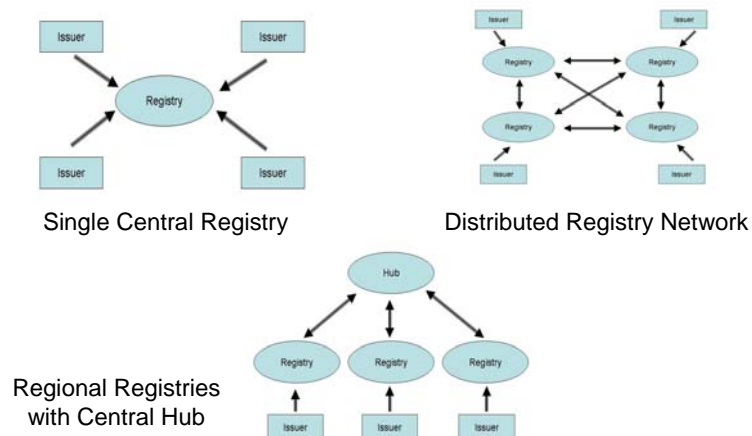
- A production plant must register with an issuing body for the domain in which the plant is located
- Production data must only be presented to the tracking system at one entry point
- Data collected must be verified by an independent organisation
- The metering data should be such that auxiliary generator data and station consumption can be identified
- The attributes from multi-fuelled or multi-mode production devices should be allocated according to energy source factors calculated using the mass and calorific values of each fuel used
- Data collection should be automated wherever economic to do so

## Data Collection – in practice

- Production plant attributes
  - Do not normally change much
  - Collected as part of the registration process
- Generation attributes
  - Metered electrical output
    - Real-time or system balancing information not required
    - Already collected by, or on behalf, of network operator
    - Often already automated
    - Often already verified for energy or use of system payments
  - Multiple fuel / multi-mode input data
    - Reported monthly
    - May already be done for other purposes (e.g. emissions)

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## Registry Infrastructures



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## Management of Data

- Certificates only exist electronically
- Independent operation of registries
- Regional registries linked by a central hub offers most flexibility
- A registry should provide transparency and support user assurance in the system and the accuracy of reported information
- Transfer between registries requires a common approach to identifiers in order to facilitate the infrastructure and to maintain uniqueness
- Transfers within the E-TRACK standard must be initiated by the seller, but do not need to be confirmed by the buyer prior to transfer
- For reasons of cost and availability, the transfer medium should be the Internet using a commonly available XML based file format

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## Compliance Procedure Requirements

- The tracking system should provide a controlled environment for participants to demonstrate their compliance with any obligation and to realise the value of their evidence
- Certificates should be transferred into an account holder's redemption account for that scheme
- Only the account holder can transfer certificates into his redemption account
  - Onus is on the participant to demonstrate compliance
- Redemption accounts should be within the country (or region) of the scheme authority
- Compliance is measured by the volume of certificates in a redemption account at the specified time and date
- On redemption, the certificates must be retired from circulation

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**A European Tracking System for Electricity  
(E-TRACK)**

**Proposal for the Tracking Standard  
(Part 2)**

[speaker],  
Christof Timpe, Dominik Seebach (Öko-Institut),  
Herbert Ritter (AEA), Diane Lescot (ObservER)

Third Consultation Workshop [country]  
[place, date]

**Implicit Tracking**

Determining and using default values for disclosure

## Aspects of Using Implicit Tracking

- An implicit tracking option will be required in any comprehensive tracking system
  - Provides a default set of attributes for disclosure
  - Should only be used if no explicit tracking information is available (Best Available Information approach)
- Little or no infrastructure needed
- Potentially inexpensive – but has hidden costs
- Offers no differentiation between retailers, therefore does not support EU policy objectives related to disclosure
- Prone to double counting if the default value is not determined as a Residual Mix
- Can take a long time to collate information

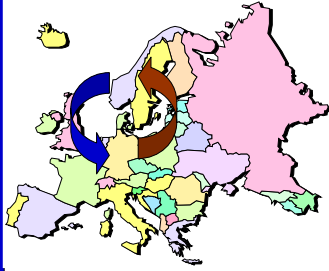
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## Implicit Allocation Procedure Requirements

- Allocation is of the **residual mix** of attributes
  - Not simply the national generation mix ratio
  - Calculated after all explicitly tracked claims have been removed
  - Residual mix has attributes and a **volume**
- Residual mix can be calculated:
  - On a national basis
  - For a region
  - For the whole of the EU and treaty states, including CH
- All countries within the area of the residual mix must use a common approach and timing

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## Example of Residual Mix Issue



- Norway sells all its hydro attributes to Germany (but does not export physical energy)
- Norway's residual has low volume and no hydro. What should happen in Norway?
  - Ignore the export and declare hydro in Norway?
    - Double counting with Germany
  - Scale up the Norwegian residual?
    - Overestimates the other attributes
  - Import a residual from within Nordic area?
    - Same problem on higher level
  - Import the residual from Germany?
    - Possible, but similar relations to other countries exist as well
- Germany has more attributes than physical consumption. What should happen in Germany?
  - ... (similar discussion)

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## Residual Mix Calculation (1)

- Explicit tracking should be used for disclosure where possible.
  - Redeemed disclosure certificates must be used for disclosure (or returned in time to the residual).
- The Residual Mix must be used if no explicit tracking information is available.
- On an annual basis, all disclosure registries calculate the **attributes** and **volume** of the Residual Mix for their domain, which is used as a default value for implicit tracking.
- As a start, the Residual Mix is calculated for a single country or a group of countries.
  - Following the further integration of electricity markets, the Residual Mix should ultimately be calculated as one mix for all countries participating in the E-TRACK standard.

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## Residual Mix Calculation (2)

- In some countries, the calculation of the Residual Mix must take into account the effects of “independent reliable tracking systems”.
  - These allocate electricity generation attributes to final consumers for purposes of disclosure, but
  - Are independent from the certificates handled by the E-TRACK registries.

Typical examples for independent reliable tracking systems are support systems for RES-E, which allocate the attributes of supported RES-E generation to final consumers (e.g. the German feed-in system).

(Existing private tracking initiatives should be integrated in the E-TRACK tracking systems.)

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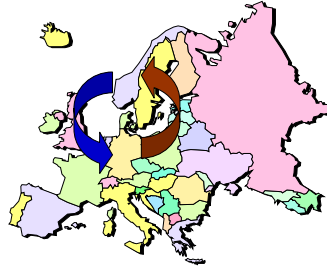
## Residual Mix Calculation (3)

- The Residual Mix must take into account those attributes which are allocated based on redeemed certificates.
- At the same time it is important to maintain the integrity of the accounting periods for disclosure (the calendar year).
- The Residual Mix should be available for disclosure purposes as soon as possible after the end of the calendar year.
- In order to fulfil these requirements, the lifetime of disclosure certificates relating to a certain calendar year must be limited to a period before the publication of the Residual Mix:
  - Time (X): Finalisation of meter readings and issuing
  - Time (X+Y): Deadline for transfers and redemptions
  - Time (X+Y+Z): Publication of Residual Mix
- [Is such a deadline for transfers and redemptions acceptable?](#)

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## Residual Mix Calculation (4)

- The calculation of the Residual Mix must take into account the balances of cross-border exchanges of physical electricity and of attributes.
- The objective is to calculate a Residual Mix, which has a volume equivalent to the difference between physical delivery in a given year and the volume of attributes available from explicit tracking.
- In order to do so, some compensations between countries with excess and shortages of attributes are necessary.



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## Residual Mix Calculation (5)

The Residual Mix should be calculated in two steps:

### 1. Calculation of the Preliminary Internal Residual Mix for each Residual Mix Area

- Attributes of all electricity generation
- +/- attributes from im/exported disclosure certificates
- attributes from redeemed disclosure certificates
- attributes allocated by independent reliable tracking systems
- = Preliminary Internal Residual Mix

Total of attributes available:

Redeemed disclosure certificates + allocation by independent reliable tracking systems + Preliminary Internal Residual Mix

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## Residual Mix Calculation (6)

### 2. Calculation of the final Residual Mix for each RM Area

- Each Residual Mix Area compares the volume of total electricity delivered to final consumers with the volume of all attributes available in the RM Area.
- Those RM Areas with more attributes than electricity delivered send their surplus in a joint European Residual Mix.
  - In those RM Areas, the final Residual Mix is equivalent to the Preliminary Internal Residual Mix.
- This European Residual Mix is used to “fill up” the deficits in the other RM Areas.
  - In these RM Areas, the final Residual Mix is the total of the Preliminary Internal Residual Mix and the fill-up from the European Residual Mix.

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## Controlling the Process

Governance Issues

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## Roles within each Domain

### Service providers

- Issuing body
  - Accredited by the governance organisation
  - Appointed by scheme authorities
- Registry operators
  - Accredited by the governance organisation
  - Appointed by scheme authorities
- Accreditation bodies
- Data collectors
  - Normally accredited under national law (e.g. TSO, DSO)
- Audit and monitoring body

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## Governance and Independence of Actors

- The Scheme Authority represents the highest governance level and appoints the Issuing Body.
- The Issuing Body (and its agents) must be independent from market players and must not have own interest in the market.
- Each Domain will lay down rules for the participation of market players in the design and development of the Domain rules.
  
- In addition to the rules within the Domain, a Governance Model on the European level is required as well.

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## **Governance Models for the European Level (1)**

Four possible approaches:

- EU institution managed through Directive
- Series of bilateral agreements
- International requirement set by a standards organisation
- Voluntary independent grouping with a code of practice

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## **Governance Models for the European Level (2): EU Institution**

- Management by Directive may be inappropriate
  - Too high level
  - Potentially insufficiently flexible
- Not all participants are EU Member States
- Could work in a similar manner to UNFCCC CDM Executive Board

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### **Governance Models for the European Level (3): Bilateral Agreements**

- Very difficult to make work
  - Multiple agreements necessary
- Not consistent with EU
- Likely to be very inflexible
- Would need to establish a central organisation

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### **Governance Models for the European Level (4): Standards Organisation**

- Could be implemented through a Directive
  - or be subscribed at national government or regulator level
- Standards organisations only maintain a standard
  - Quality Assurance bodies
    - Required to establish compliance
    - Required to accredit service providers
  - How would enforcement of the standard be carried out?

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### **Governance Models for the European Level (5): Independent Grouping with a Code of Practice**

- Similar to current Association of Issuing Bodies (AIB)
  - Members are the Issuing Bodies from individual Domains
- Recognised by European Commission and governments
  - Relationship with national Regulators must be clarified
  - Periodic EC audit?
  - Funding must be secured
- Maintains Code of Practice
  - Audits of the activities of Issuing Bodies

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### **Governance Models for the European Level (6)**

- No firm E-TRACK recommendation yet
- Preference for independent group with Code of Practice
- Open to suggestion as part of this consultation

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## A European Tracking System for Electricity (E-TRACK)

### Cost Assessment

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Third Consultation Workshop [country]  
[place, date]

### Content

- Aims of Cost-Benefit Analysis
- Costs drivers
- Costs of existing tracking systems based on registries
- Calculation procedure and assumptions
- Results: European E-TRACK costs
- Recommendation for cost distribution
- List of benefits of a harmonized tracking scheme

## **Aims of Cost-Benefit Analysis**

- To develop a cost assessment based on discussions with potential implementers/operators/users of tracking systems
- To develop recommendations on the distribution of cost to the parties involved
- To assess the benefits of a harmonized tracking scheme (qualitative)
  
- The analysis is based on
  - experiences of operators of tracking systems
  - discussions with parties probably being involved in implementation and operation of a tracking system
  - desktop research

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## **Cost drivers: System development and implementation**

- Setting up organisational structures
- Composing detailed system specifications
- Technical development (software for registry, ...)
- Collection of data
- Development of interfaces between national domains
- Capacity building (market actors, users, ...)

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### **Cost drivers: System maintenance**

- Governance of the overall system
- Operation and maintenance of the system
  - Hardware
  - Software
  - Data handling
- User support
- Further development according to policy development and to lessons learned

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### **Cost drivers: System operation**

- Issuing aspects
  - plant certification and auditing
  - verification
- Transfer aspects
  - handling of information transfer (e.g. certificate transfers)
- Usage and redemption aspects
  - conversion of data into format for final use (e.g. disclosure)
  - verification of output data
  - calculation of residual mix

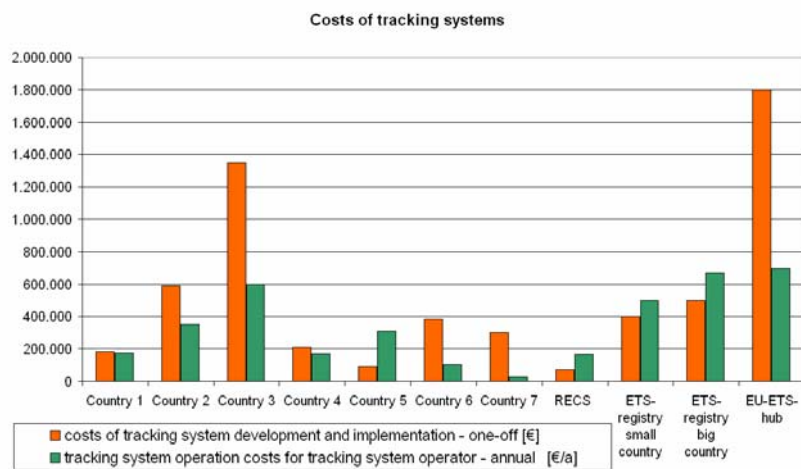
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## Gathering of cost information

- “1st questionnaire” on costs addressing organisations that have experience with tracking systems/registries
- Additional cost information collected: EU-Emission trading scheme (e.g. Central European ETS registry, national ETS registries); RECS
- “2nd questionnaire” on costs focusing on users of tracking systems/registries

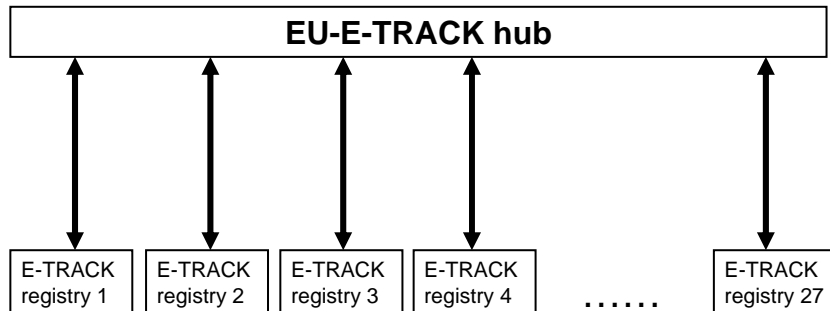
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## Costs of existing systems/registries



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## E-TRACK structure for cost assessment



- 27 E-TRACK registries (EU 25+Norway+Switzerland; assumption one registry per country)
- EU-E-TRACK hub for attribute transfer from one E-Track registry to another

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## Implementation scenarios for the E-TRACK Standard

- 3 implementation scenarios have been developed:
  - **Lower scenario**
    - linked to existing organisations and structures
    - there are already procedures in place which are coherent with procedures for electricity tracking: auditing procedures for RES-E and HE-CHP power plants (automated issuing at least for these two types of plants)
  - **Advanced scenario**
    - represents an extension of the lower scenario
    - “new” organisations for the implementation and operation of the “local” tracking system have to be set up
    - partly integrated system: e.g. endorsement of RES-E support schemes
  - **Upper scenario**
    - represents an extension of the advanced scenario
    - fully integrated system, e.g. to handle national RES-E support schemes
    - high requirements for reliability, accuracy and security
- **Aim: To assess the range of costs for a European Tracking standard.**

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## Cost assessment procedure (1)

- 1) For each implementation scenario
  - the costs for development of one E-TRACK registry on a national level and
  - the operation costs for the registry operator are assessed based on 1st questionnaire's results.
  - costs/investment for existing systems are not deducted in the scenarios

one tracking system		lower scenario	advanced scenario	upper scenario
costs of tracking system development and implementation	[€]	210.000	650.000	1.490.000
tracking system operation costs for tracking system operator	[€/a]	195.000	400.000	660.000

Costs for a single local tracking system in an average country according to different scenarios.

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## Cost assessment procedure (2)

- 2) Scaling up the costs to European level (27 registries) taking into consideration the different cost levels of countries.
- 3) Costs for the EU-E-Track-hub are assessed based on experiences of the central European Emission trading scheme registry
  - same hub-costs for all scenarios are assumed:

hub		lower scenario	advanced scenario	upper scenario
costs for tracking system development and implementation	[€]	2.000.000	2.000.000	2.000.000
tracking system operation costs for tracking system operator	[€/a]	800.000	800.000	800.000

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### Cost assessment procedure (3)

- 4) Assessment of annual costs for plant certification /auditing based on 2nd questionnaire information
- assumption for all scenarios: 2000 plants/year are audited in Europe

		lower scenario	advanced scenario	upper scenario
audited plants per anno		2.000	2.000	2.000
auditing costs per plant	[€/plant]	300	1.000	2.500

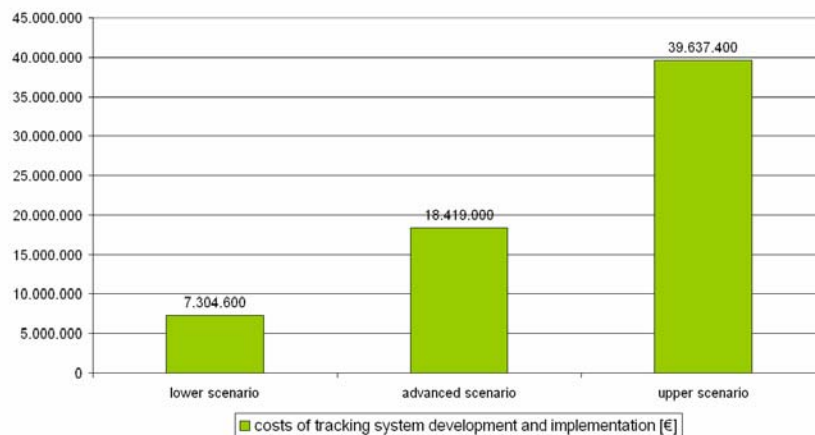
- 5) Assessment of annual costs for external market actors and users at the European level based on 2nd questionnaire information:

		lower scenario	advanced scenario	upper scenario
"external" users actively using the tracking system		600	1.200	1.800
operating expenses for one "external" user	[days/a]	12	24	36
labour costs for one external user	[€/day]	600	600	600

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### European E-TRACK costs (results)

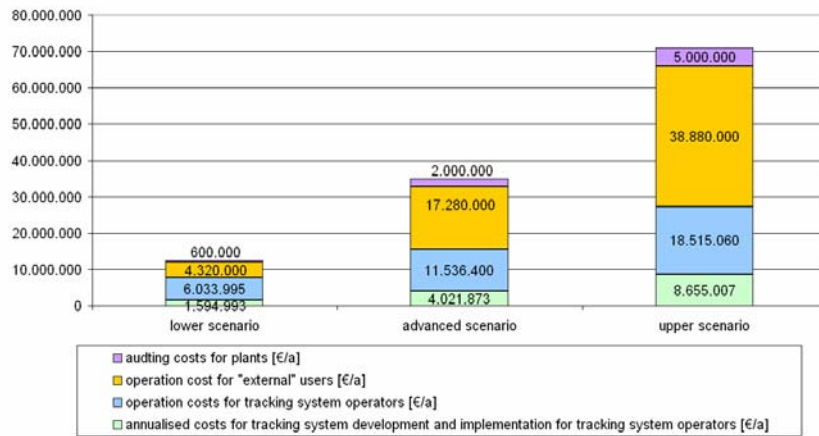
Total one-off costs of tracking system development and implementation in EU25+NO+CH [€]



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### European E-TRACK costs (results)

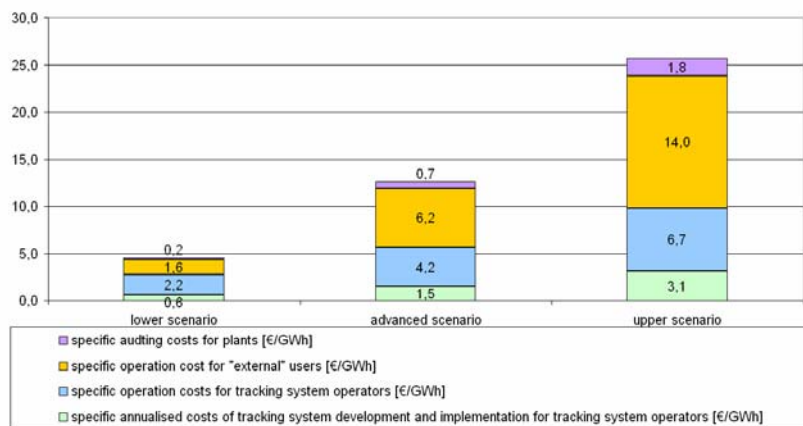
Total annual operation costs for EU25+NO+CH [€/a]



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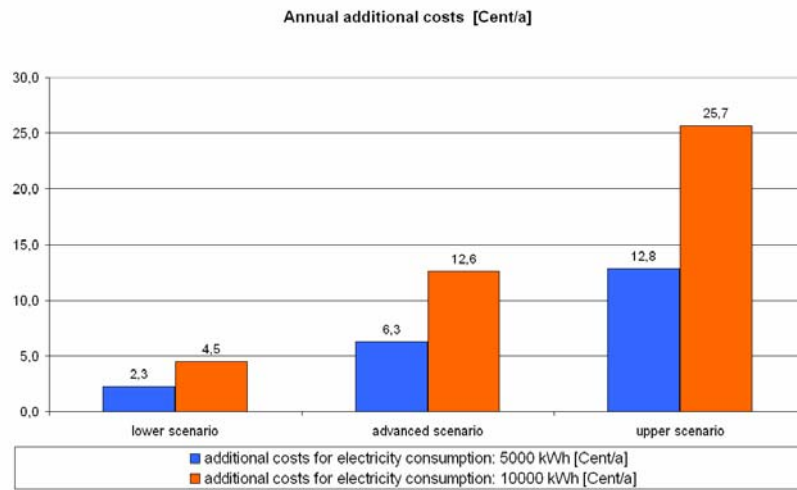
### Specific European E-TRACK costs (results)

Specific total annual operation costs [€/GWh],  
 Basis: electricity consumption 2003 (EU 25+NO+CH)



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## Additional costs for consumers



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## Distribution of cost

- recommendation taking into account where the cost actually occurs and who receives the benefit:
  - costs related to the development/implementation and to the direct operation of the tracking system should be socialized through the electricity tariffs (consumer benefits by an increased market transparency)
  - costs for “external” users should be covered by themselves, (marketing benefits, fulfilling disclosure obligations, etc).
  - costs for auditing plants should be covered by the plant operator

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## **Benefits of an harmonised tracking scheme**

- descriptive and qualitative assessment based on the information given by the market actors
- list of benefits:
  - securing and forcing the attribute market for RES-E
  - increasing market transparency, delivering reliable and high quality information
  - supporting electricity disclosure and green power products
  - contributing to an active electricity product management
  - avoiding of double counting
  - potential synergies with internal accountancy systems and trading systems
  - automatic procedures, e.g. simple cross border exchange
  - synergies with existing support mechanisms
  - basis for new policy instruments



## Project outlook

- Following the third round of consultations, the project team will finalise the proposed tracking standard.
- The final project conference will be in Brussels, on 9 March 2006.
  - A variety of dissemination activities will follow.
- Until the project termination, the team will follow the implementation of CHP-GO.
- A proposal for an E-TRACK phase 2 project has been submitted to the Commission, with a focus on:
  - CHP-GO
  - 12 new member states
  - Consumer requirements

A decision on this proposal is expected before summer 2007. 3

## Final questions to participants

- Do you think that the consultations were helpful for you?
- What did you like most?
- What could be improved?
- Would you be interested to participate in (one) E-TRACK 2 workshop?