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8.6.2016 Oslo

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Residual Mix Workshop 2016

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Markus Klimscheffskij, Grexel Systems Ltd.

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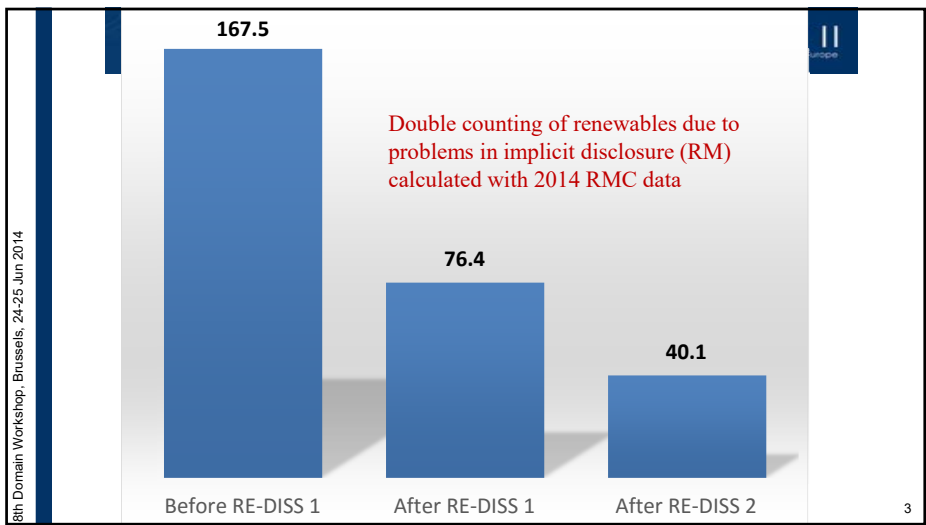
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**RE-DISS II**  
Reliable disclosure systems for Europe

### Conclusions from RE-DISS II

- Without an implicit disclosure regime, explicit electricity tracking (GOs) is double counted!
- Impact of proper implicit disclosure is currently estimated at avoidance of 167.5 TWh of double counting of RES annually
- European Attribute Mix will continue to be counted using a shifted transaction-based methodology
  - Issuance-based methodology continues to be supported and fits well if production and disclosure year of GOs are to large extent the same.

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### What has happened?

- RE-DISS II ended September 2015
  - Recommendation to continue EAM using Shifted-Transaction Based accounting
- AIB decided to facilitate EAM & RM calculations for 2015 and 2016
  - Grexel was selected through tendering as the provider
- EAM & Residual Mixes for 2015 were published 13.5.2016
  - [http://www.aib-net.org/portal/page/portal/AIB\\_HOME/FACTS/European%20Residual%20Mix/AIB\\_2015\\_Residual\\_Mix\\_Results\\_FINAL\\_2016-05-13v2.pdf](http://www.aib-net.org/portal/page/portal/AIB_HOME/FACTS/European%20Residual%20Mix/AIB_2015_Residual_Mix_Results_FINAL_2016-05-13v2.pdf)
- Grexel performs EAM & RM calculations following the legacy methodology of RE-DISS
  - Any methodological development has to be separately agreed

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Date: 10<sup>th</sup> June 2016  
Location: Oslo



Aims of This Session 

- Increase awareness of the Residual Mix Calculation Methodology
- Present and Discuss Results of 2015
- Discuss possible developments for 2016 calculation
  - E.g. New result graphs, need for bilateral support, more explanations, specific data

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Residual Mix Calculation

Residual Mix Workshop 2016

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RE-DISS II  
Reliable disclosure systems for Europe

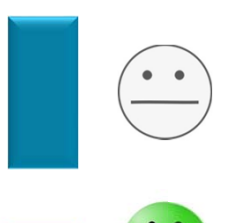
### Renewable Energy Balance in a Country


Producers



GOs

Consumers





NO! If you're gonna track electricity, you need to pay the price!

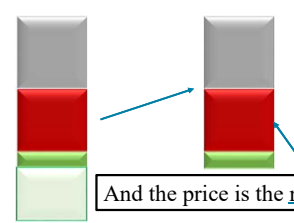
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RE-DISS II  
Reliable disclosure systems for Europe

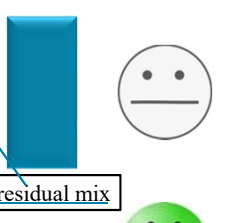
### Renewable Energy Balance in a Country

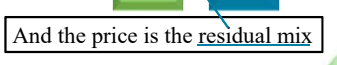
Producers



GOs

Consumers





And the price is the residual mix

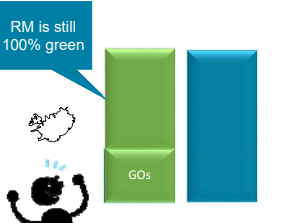
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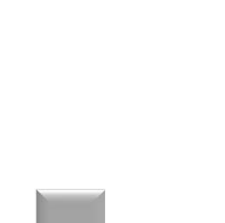
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### International Renewable Energy Balance

RM is still 100% green



GOs



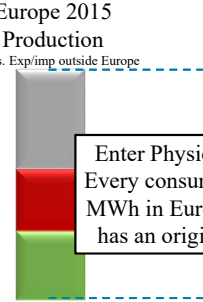
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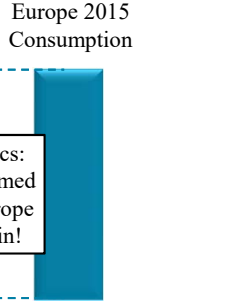
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Reliable disclosure systems for Europe

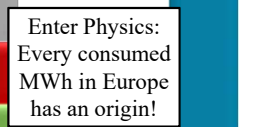
### Balance of Electricity Generation Attributes vs. Consumption

Europe 2015  
Production  
+ phys. Exp/imp outside Europe

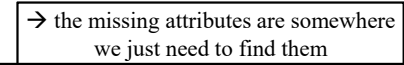


Europe 2015  
Consumption





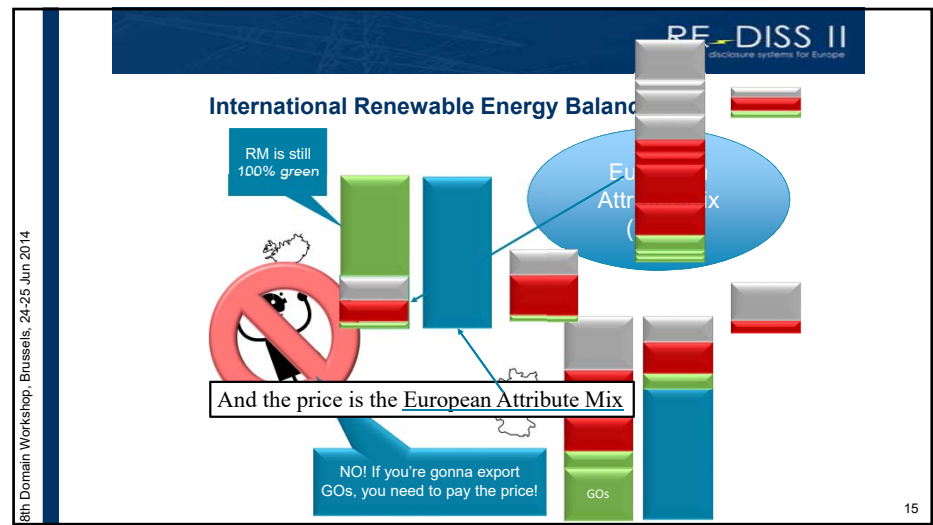
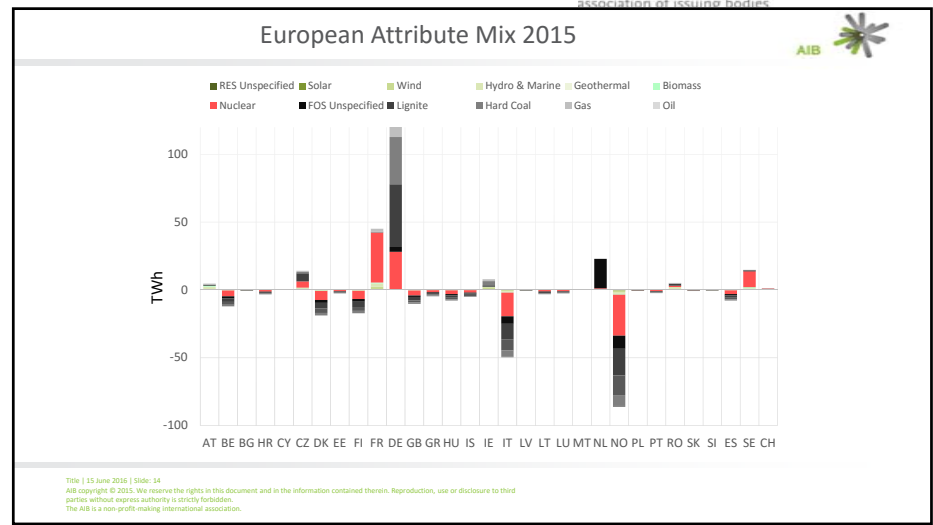
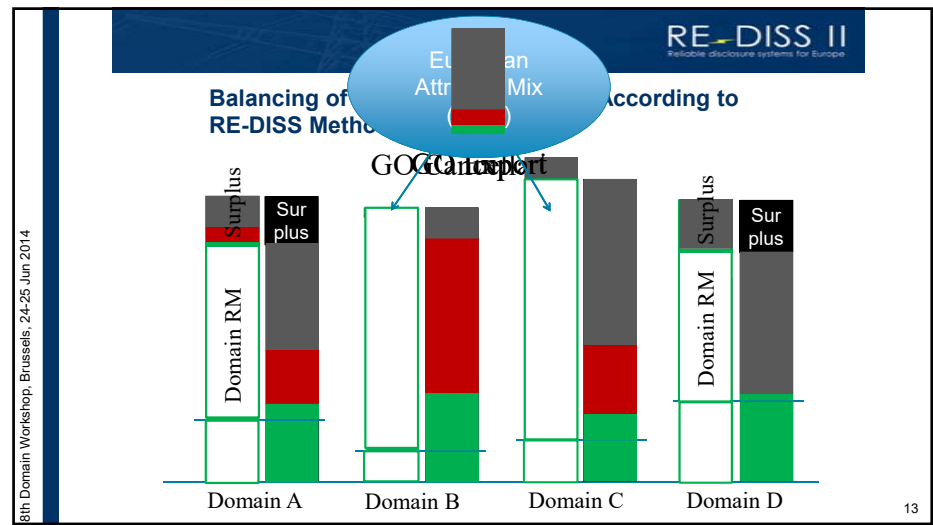
Enter Physics:  
Every consumed MWh in Europe has an origin!



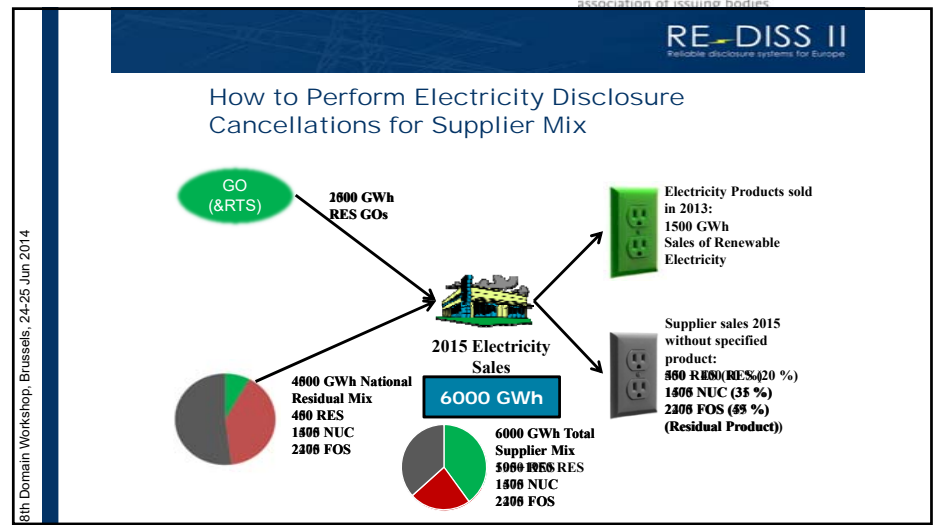
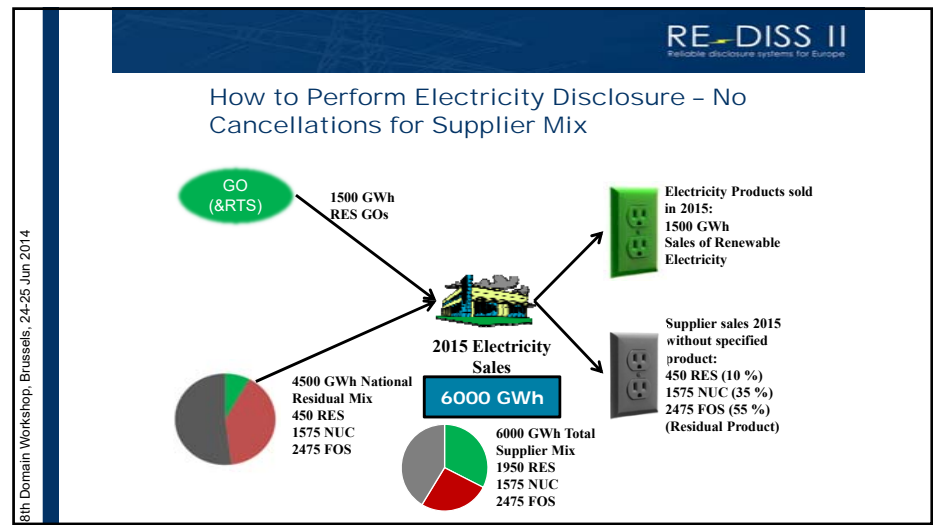
→ the missing attributes are somewhere we just need to find them


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- Couple of Words on Use...**
- Typically suppliers only cancel GOs for part of their total sales
  - Gap between electricity sales and attributes from explicit instruments (GOs) should be "patched up" from the Residual Mix of the respective country
  - Use of the Residual Mix shall be enforced by a Competent Authority (responsible for supervision of electricity disclosure)
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Residual Mix Calculation Results 2015

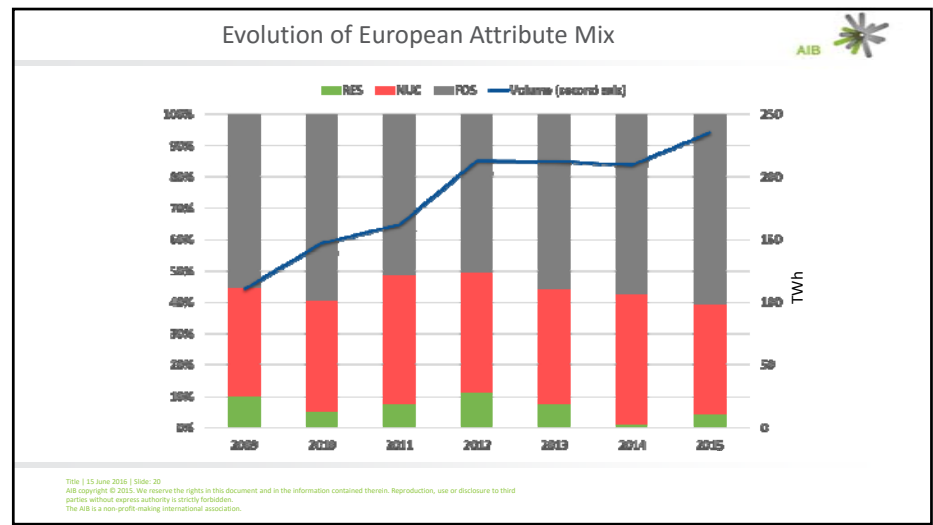
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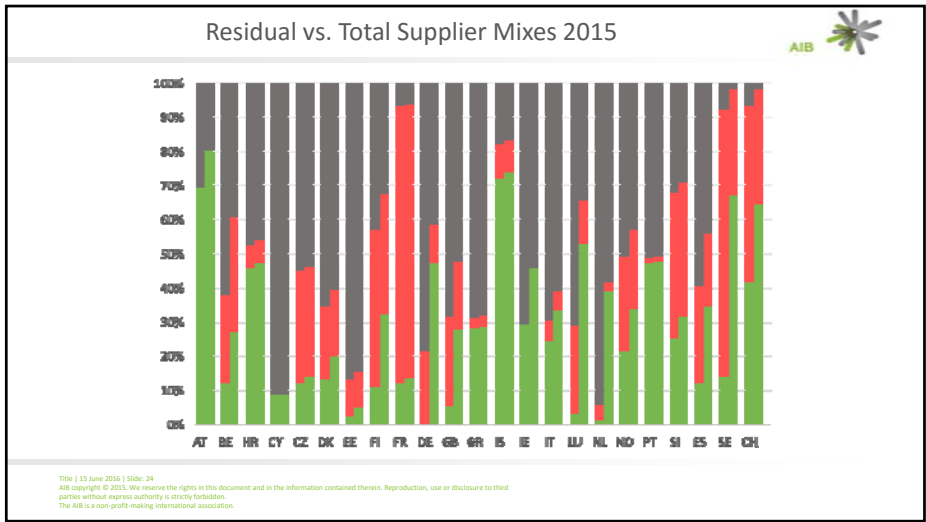
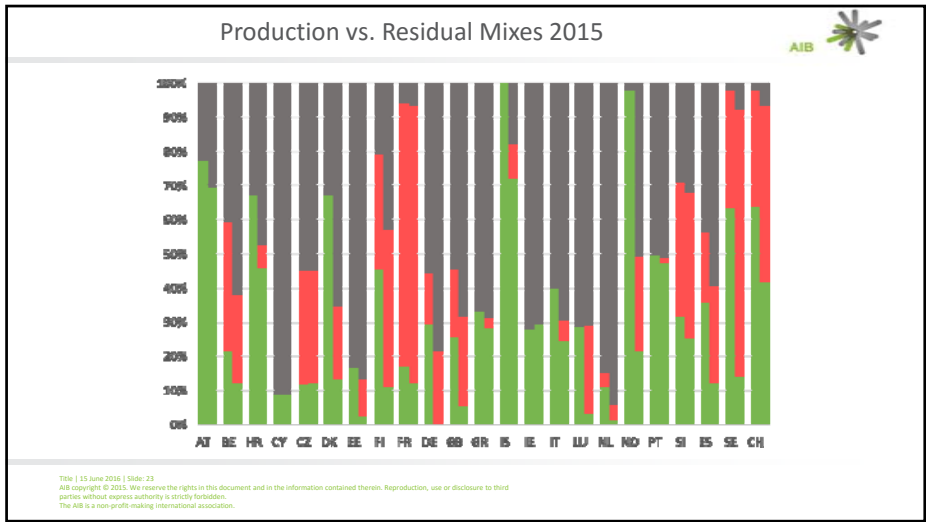
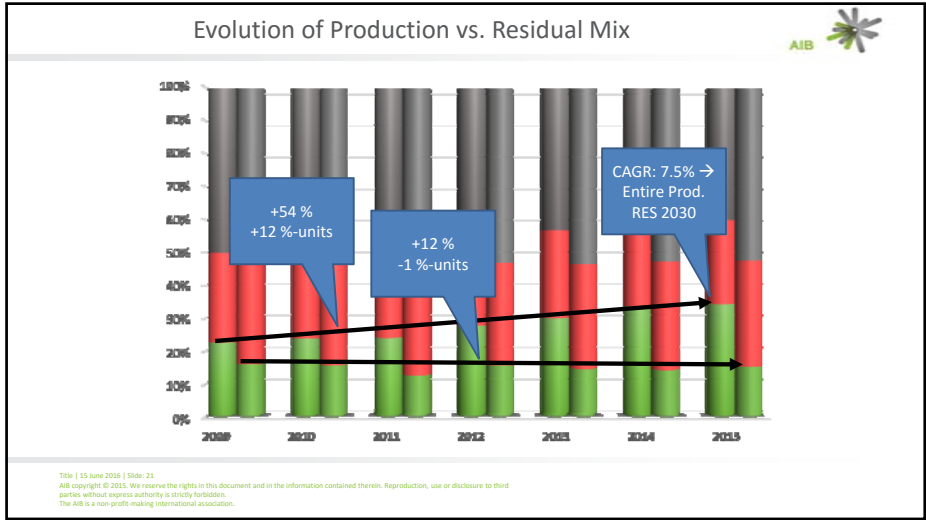
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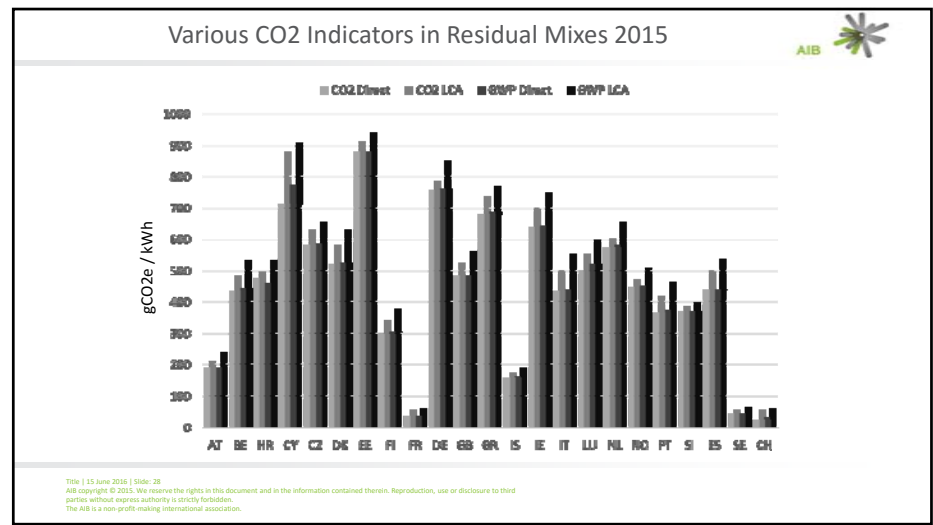
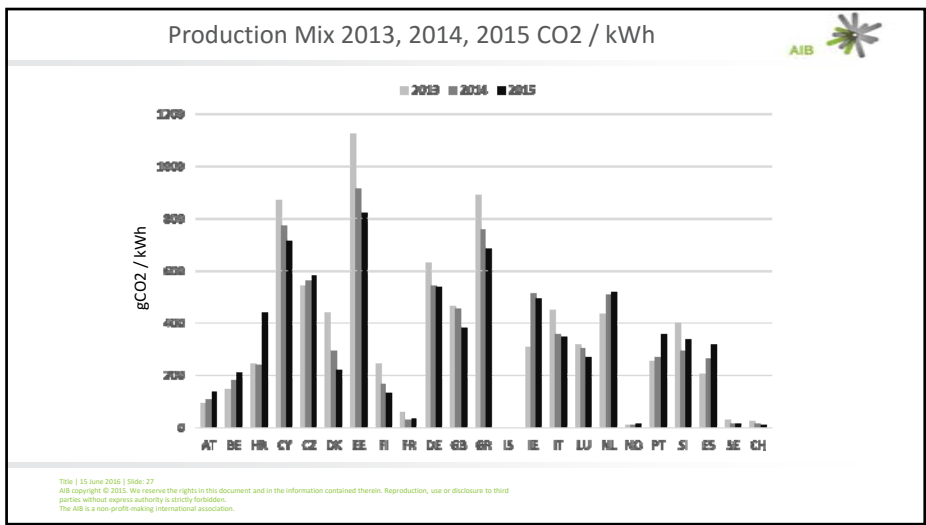
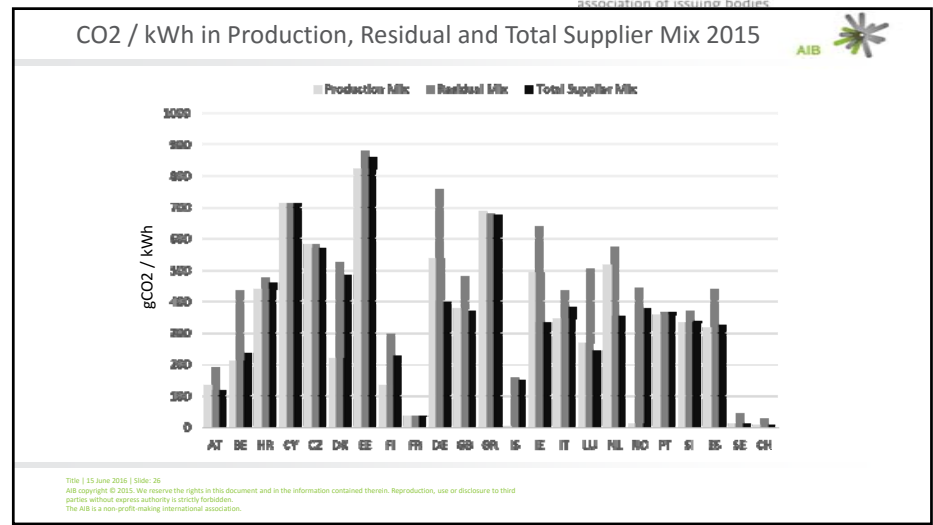
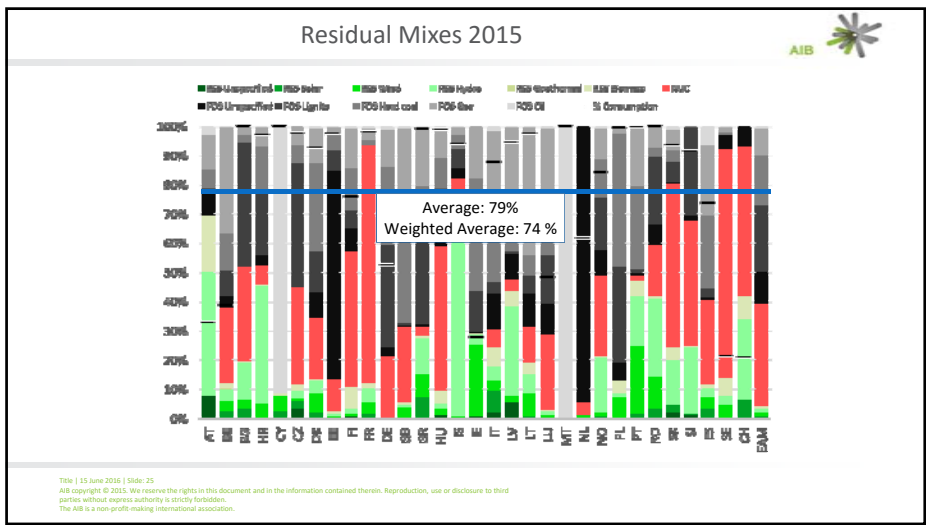
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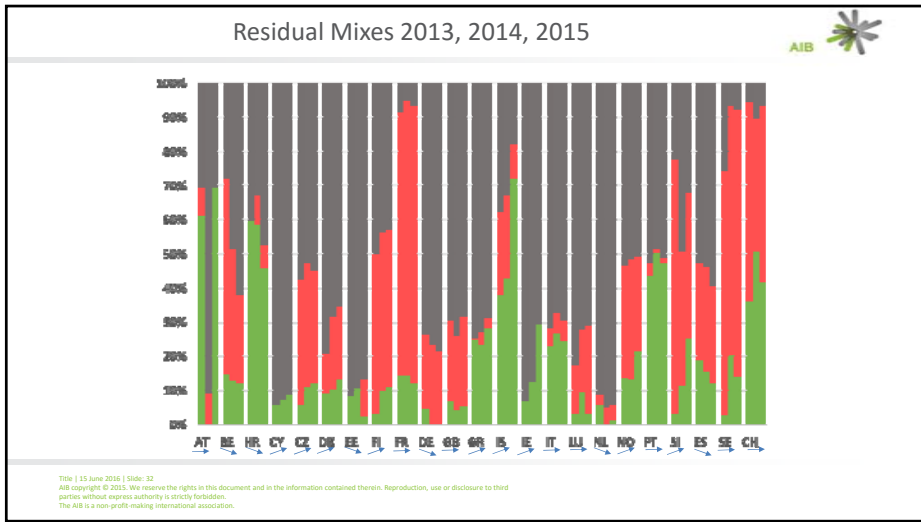
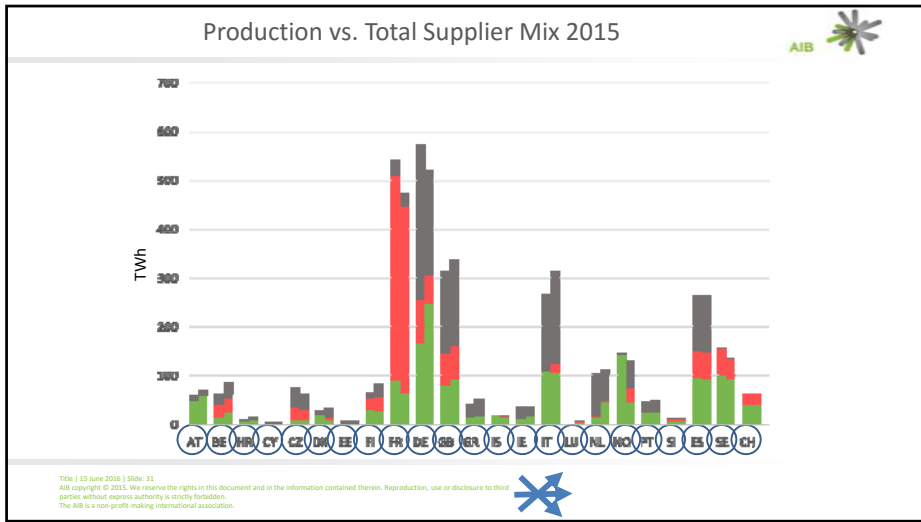
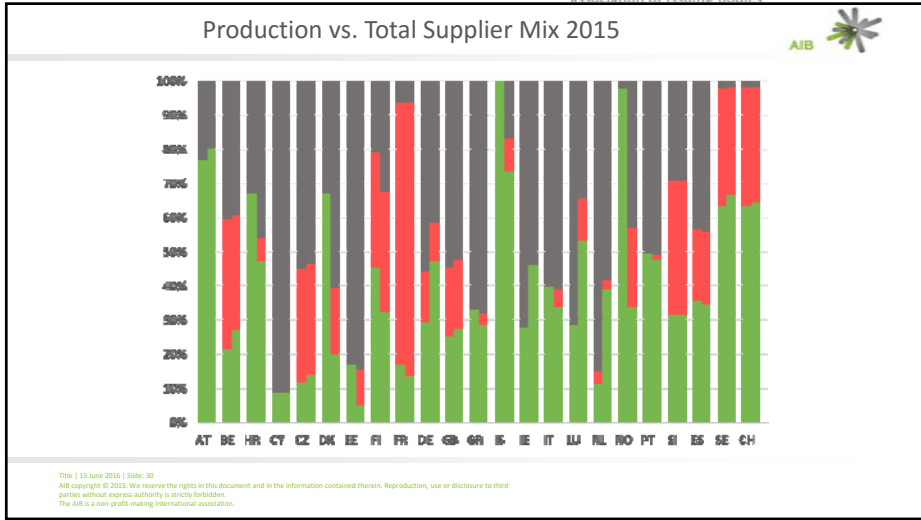
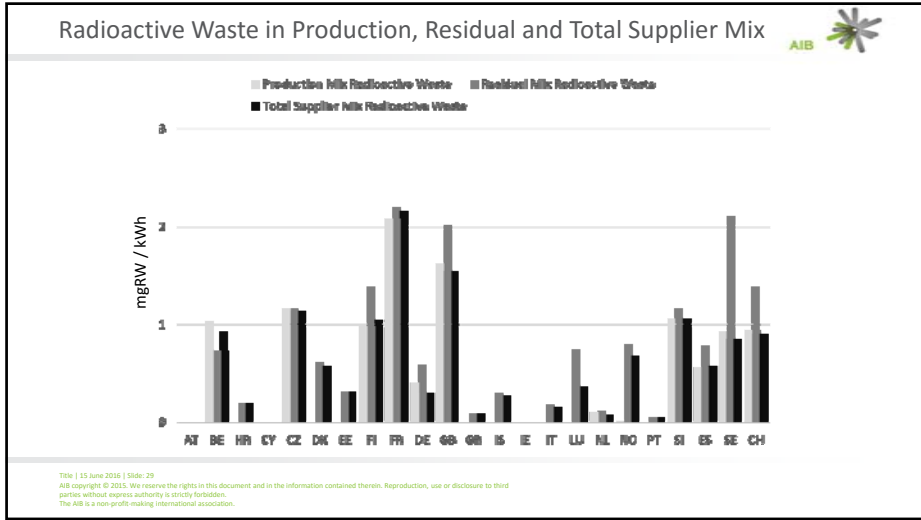
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Yearly Variation Causes

- Different Disclosure DL
- Increased data on RTS
- Increased / Decreased Tracking
- EECS Membership
- Regulative Changes
- Size of the country
- Inexplicable effects

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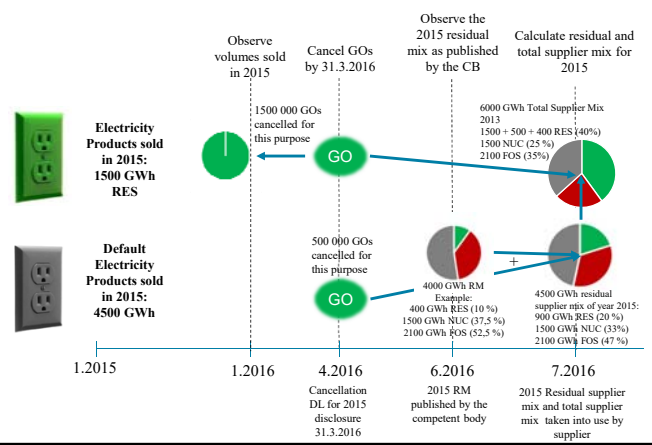


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Timeline of Electricity Disclosure



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