



Cost Benefit Analysis applied to the Projects of Common Interest for Electricity Transmission

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What are Projects of Common Interest?

- infrastructures key “to support completion of EU Energy market”
- accelerated licensing, dedicated regulation, financial support
2014 to 2020: €5.35 billion from the Connecting Europe Facility
- For electricity (Transmission, Storage and Smart Grids),
gas and oil (Transmission, Storage LNG)

Legal references: Reg. (EU) No. 347/2013, Decision No. 1364/2006/EC of the EU Parliament and Council on the Connecting Europe Facility



PCIs for electricity Transmission

as per Reg. 347/2013

- Projects are candidated for PCI status by Project Promoters (TSOs or private companies)
- PCI candidates need to be included in ENTSO-E's Ten-Year Network Development Plan (TYNDP)



PCIs for electricity Transmission

as per Reg. 347/2013

- the CBA for the TYNDP 2015 is carried out by ENTSO-E
- Based on it, PCIs are ranked by four geographical macro-regions and selected by the “Regional Groups” (DG ENER + ACER + country gov’t representatives, TSOs, NRAs... from each region)



ENTSO-E CBA results

- Different Visions, with no weights attached
- Model estimation on clusters, not on individual projects
cluster values are then redistributed to projects by non-uniform rules of thumb
- Take-Out One at a Time (TOOT) approach with “all-TYNDP-projects-in” assumption:

“how much value is destroyed by not building this cluster, while all other TYNDP projects are built?”



ENTSO-E CBA results

- TYNDP CBA output was not one but a series of indicators:
 - some monetised: Socio-Economic Welfare (SEW), Costs
 - others quantified: avoided CO2 Emissions, network Losses, RES integration, Security of Supply, Social and Environmental impact
 - others ordinal (by expert judgment): Flexibility and Resilience
- Many missing data in SoS (95%), Soc & Env Imp (30%)
(which had to be discarded!)
- ENER requested JRC to process this data into a ranking of individual projects (not clusters).



DG JRC methodology: key steps

- Further monetisation (Losses)
- Reclustering of projects to take care of complementarity
- weights for ENTSO-E's visions selected by the Regional Groups



DG JRC methodology: key steps

- Correlation analysis to check for double counting
- Construction of composite indicators for the three policy criteria mandated by Reg. 347/2013:
 - Market Integration: SEW
 - Sustainability: RES integration
 - Security of Supply: ENTSO-E's SoS unusable, so combination of Resilience and Flexibility
 - Weights independently selected by the Regional Groups



DG JRC methodology: key steps

- Sensitivity analysis on externality monetisation (CO₂) based on correlation estimates between SEW and CO₂ emissions
- Composition of criteria indicators after checking for independence
 - Weights independently selected by the Regional Groups
- Additional elaboration to factor in 10% electricity interconnection target (cf. EC Communication COM(2015) 80 final)



Stakeholder engagement

- In the PCI process, “stakeholders” means DG ENER, ACER, country gov’t representatives, NRAs, TSOs and other Project Promoters
- Each country’s stakeholders voted for weights, which were then averaged
- Consumer (or citizen) preferences channelled through EU and national entities’ utility functions by and large the main channel of stakeholder engagement



Stakeholder engagement

- NGO representatives only allowed into preliminary sessions of the meetings
- Yet, they could express concerns over discarding of Social and Environmental Impact Indicators due to 30% of missing data
- Soc & Env Imp measured as kms of electricity line through resp. protected and densely inhabited areas



Stakeholder engagement

- Lack of data due to many candidate projects' routes being still undefined by PPs → issue of project maturity
- Reg. 347/2013, Art. 12/3: projects' candidacies may be submitted as soon as they reach "sufficient maturity", but no clear definition of this concept
- The issue has been raised and is a topic for improvement of the CBA methodology for the coming PCI round (2017)

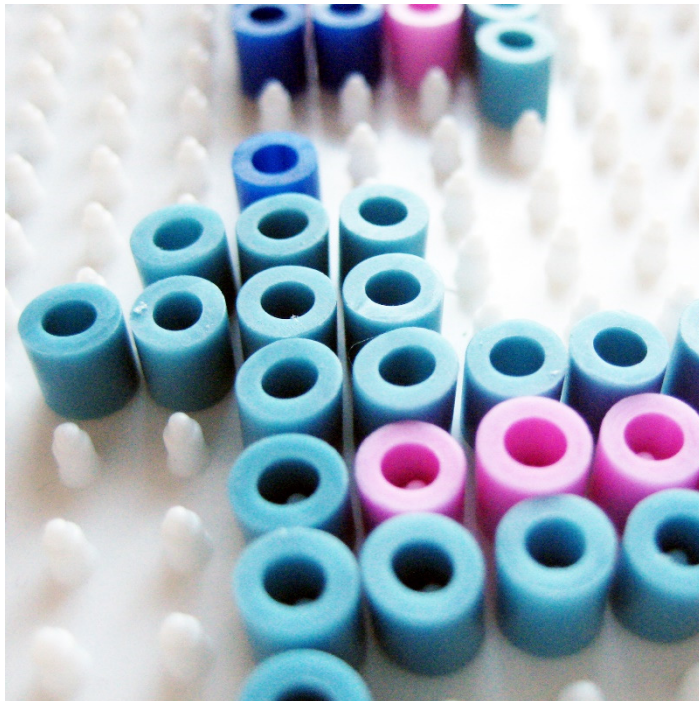


Stakeholder engagement

- Regional Group members raised several other issues w.r.t. the current ENTSO-E CBA methodology, including:
 - Assessment of scenarios and their likelihood
 - Assessment of the Security of Supply indicator
 - Prevention of double counting
 - Cluster vs individual project assessment
 - Realism of “All-TYNDP-projects-in” assumption for TOOT
- These topics are currently under exam, also by DG JRC
- It may be expected that stakeholder engagement increases in the next rounds also by involvement in more upstream stages of CBA.



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**Thank you for
your attention**

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