Cost-Benefit Analysis Methodology update

Irina Minciuna, Advisor

Daniel Fraile, Climate Action Network

Long Term Development Stakeholder Group

2nd meeting, 27 February, Brussels

entsoe

Reliable Sustainable Connected

Latest CBA update

1. Social and environmental indicator

2. Storage annex in the CBA

Social and enviromental indicators- NGOs proposals

1) Clarification on environmental costs

- Costs should be more detailed and disaggregated
- Environmental costs should be internalized to C1

2) Improvement of the indicators with new sub indicators

- **Sub indicator with not (yet) internalised potential impact on biodiversity**
- **Sub indicator with not (yet) internalised potential impact on landscape and/or population**

3) EU-wide and regional impact assessment

- Use of principles of strategic environmental assessment

Scoring system for potential impact on biodiversity

- **Basic notion: # of km "in" sensitive area**. An area can be sensitive to (nearby) infrastructure because of the potential effects this infrastructure will have on biodiversity, because of scientific interest

- **Scoring system***:* "minus" added for impact and sensitivity in the following way:
  - Impact: If the project potentially has a length of more than 50km in sensitive areas, it will get a minus.
  - Sensitivity: If the project crosses a **high sensitive area**, it will get a minus.

- **Multiple lines per project, depending on the number of significant impacts**

- **Final scoring (red-orange-green), adding the above mentioned scores:**
  - ***Double minus: Red***
  - ***Single minus: orange***
  - ***No minus: green***

Example

Project	Stage	(Potentially) Crosses environmentally sensitive area (nb of km)	Typology of sensitivity	Score	Link to further information
A	Planned	Yes (50 to 75 km)	Birds Directive (high)	Double minus (red)	www….
A	Planned	Yes (30Km)	Birds Directive (low)	No minus (green)	
B	Design & permitting	No		No minus (green)	www….
C	Under construction	Yes (20 km)	Habitats Directive	Single minus (orange)	www….
D	Under consideration	N.A	N.A	N.A	www….

1 line per significant impact

Scoring system for social impact (incl. landscape and/or population impact

- **Basic notion: # of km "in" sensitive area**. An area can be sensitive to (nearby) infrastructure if it is densely populated, or because of a unique landscape

- **Scoring system:** "minus" added for impact and sensitivity in the following way:
  - Impact: If the project potentially crosses more than 50km of densely populated areas, or an area designated for its landscape value, it will get a minus.
  - Sensitivity: If the project crosses **a high sensitive area** or if the technology is sensitive(OHL), it will get a minus.

- **Multiple lines per project (in the tables), depending on the number of significant impacts**

- **Final scoring (red-orange-green), adding the above mentioned scores**
  - ***Double minus: Red***
  - ***Single: orange***
  - ***No minus: green***

Example – scoring the residual social impact

Project	Stage	(potentially) Crosses dense area (nb of km)	Typology of sensitivity	Score	Link to further informatio n
A	Design & permitting	Yes (20 to 40km)	Dense area	Single minus (orange)	www….
A	Design & permitting	Yes (40 Km)	Landscape impact (i.e. Unesco World Heritage site)	Single minus (orange)	www….
B	Planned	No	Submarine cable	No minus (green)	www….
C	Under construction	Yes (50 km)	OHL	Double minus (red)	www….

Summary I

- Potential impacts can be identified at three stages:
  - Internalized (part of C1), thus avoidance/compensation measures have been taken into account and monetized
  - Not yet internalized, due to the lack of more concrete information on the final cost for avoidance/mitigation or compensation.

    Generally this happens in early planning stages
  - Residual. This impact cannot/will not be avoid. This impact is out of the scope of EU legislation (EU legislation such as Birds or Habitats protection does not allow impacts to be neglected, so they need to be eventually internalized)

    Generally this happens in late stages of project development (under construction)

Summary II

- Definition of high sensitivity needs to be clear
- Potential impacts of a project should always be displayed in TYNDP
- Information needs to be displayed per significant impact- Thus multiple lines per project possible
- What matters is info and access to further documentation. Color code, although helpful, is less relevant

Significant improvement on the methodology!

Questions

Are you satisfied with the new approach?

Is the new way of representing the not-yet internalized and residual social and environmental indicator comprehensive enough for you?

What additional improvements would you bring to this indicators?

Back-up slides

Environmental indicator

Possible starting point for environmental aspects: CIGRE report

Aspects	Objectives	Indicators	Parameters	Internalised?
Land use	Optimize land use and limit fragmentation	Direct land use	Surface x factor (fragmentation)	Yes (compensations)
Biodiversity	Prevent impact on ecosystems and species	Presence of ecosystems and species	Distance from/ length in/ surface in x factor (protection level)	No (some exceptions)
Water	Reduce water quantity	Total amount of water consumed by new projects	Total amount of water x availability of water	Yes (market price)
Aquatic environment	Reduce modification	Total extension of aquatic environment modified by the plan	Total extension modified x total extension existent	Yes (legal requirements)
Noise	Minimize noise impact	Noise level of installations	Noise level x factor (norm)	Yes (legal requirements) residual impact possible
Soil	Minimize perturbation of soil and groundwater	Situation in vulnerable soil Vicinity of water-collection area	Length/ surface x factor (soil type) Distance from	Yes (legal requirements)
Waste	Avoid waste	Waste produced	Quantities x factor (type of waste)	Yes (legal requirements)

Environmental indicator

Aspects	Objectives	Indicators	Parameters	Internalised?
Climate	Reduce emissions of CO_2 Prevent SF_6 losses	Electricity transmission losses SF6 volume in installation	Electricity loss x factor (CO_2 emission) Volume	Yes Yes (potentially)
Landscape	Preserve landscape integrity Preserve protected buildings	Visual impact installation Presence/ crossing of protected buildings/ landscapes	Frontal surface x factor (surrounding) Distance from /length in	Partly(compensations, mitigation)
Erosion	Preserve soil integrity	Relation between susceptible areas to erosion (SAE) and affected area of the plan or programme (AAP)	SAE/AAP	Not relevant
Indigenous land	Reduce interference	Number of lands affected by the plan	Number of affected lands x total amount of indigenous lands	Not relevant
Conservation Units	Reduce interference	Number of units affected by the plan	Number of affected units x total amount of conservation units	Partly
Material welfare	Maintain reliability of provisioning the residential tissue	Average Interruption Time (AIT) to the distribution network	AIT	SoS indicator

Environmental indicator

				Internalised?
Employment	Supporting employment	Investments in new infrastructure Number of created jobs	Investment budget Number of jobs/MW	Yes*
Integration of infrastructure	Taking into account the apprehension for new electric installations	Localisation of infrastructure in living areas	Length/ surface in living area x factor (installation)	No
Safety	Minimize the electric and magnetic field risks	Number of people living under or nearby a HV line	Number of people	Partly
Economic efficiency and competitiveness	Assure transmission to meet the needs of the economy and society.	Contribution in the increase of GNP	% increase in power distribution to the industry	Not relevant
Liberalization of the market	Develop international interconnections Increase independency of production	Increase of the import capacity Reduction of risk on re-dispatch	Power Reduction stress factor installations	GTC, SEW
Tariff	Find the economic optimum for customers	Optimal for the HV/MV/LV* network	Transmission tariffs	Not relevant
Diversification in sources of provisioning	Receive new unities of RES**.	New connected RES** unites	Connected power	RES indicator