

Technical support to the Energy Community and its Secretariat to assess the candidate Projects of Energy Community Interest in electricity, smart gas grids, hydrogen, electrolysers, and carbon dioxide transport and storage, in line with the EU Regulation 2022/869

- Project specific Cost-Benefit Analyses -

TEN-E (PECI) Groups meeting – 4th meeting of the “Electricity” Group

19 June 2024

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Eligible projects

Eligible projects



E01: Increasing the capacity of existing 220 kV interconnection between Bosnia and Herzegovina and Montenegro, 220 kV OHL Trebinje – Perućica

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E13: DTEK STORAGE 225 MW

CBA E01

220 kV Trebinje - Perućica



Project specific data

E01: Increasing the capacity of existing 220 kV interconnection between Bosnia and Herzegovina and Montenegro, 220 kV OHL Trebinje – Perućica

- *Project promoter(s):* CGES (ME), NOSBiH/Elektroprijenos BiH (BA)
- *Infrastructure category:* High and extra high voltage overhead transmission lines
- *Commissioning year:* 2028
- *Project description:* Reconstruction of the existing line which would resolve existing congestions between Bosnia and Herzegovina and Montenegro, enable and support integration of a large number of RES in Bosnia and Herzegovina (region of East Herzegovina) and Montenegro



Project specific inputs

- *Investment costs (CAPEX):* 14.7 mil. EUR
- *Operation costs (OPEX):* 111,000 EUR/yr
- *GTC increase in 2030/2040/2050:*
 - BA – ME 500 MW
 - ME – BA 500 MW
- *Expected lifetime:* 70 years
- *Length:* 63.2 km



Calculated project benefits

Specific criteria	Indicator	Unit	2030	2040	2050
<i>Market Integration</i>	B1. Socio-economic Welfare	mil EUR/yr	2.18	-4.97	0.19
<i>Sustainability</i>	B2. Additional societal benefit due to CO ₂ variation	Tons/yr	26,824	-18,841	0
		mil EUR/yr	2.03	-6.61	0
<i>Energy efficiency</i>	B5. Variation in Grid Losses	MWh/yr	2,365	2,613	2,886
		mil EUR/yr	0.20	0.25	0.005
<i>Security of Supply</i>	B6. Security of Supply: Adequacy	MWh/yr	0	3,120	20,830
		mil EUR/yr	0	9.36	62.49

CBA E01 results

Benefits

Costs

Discount
rate

Economic Indicator	Unit	Result
NPV	<i>mil EUR</i>	145.31
B/C	-	10.53

Economic Indicator	Result	Points received
B/C	10.53	20

CBA E02

400 kV Gacko - Brezna



Project specific data

E02: New 400 kV interconnection between Bosnia and Herzegovina and Montenegro, 400 kV OHL Gacko - Brezna

- *Project promoter(s)*: CGES (ME), NOSBiH/Elektroprijenos BiH (BA)
- *Infrastructure category*: High and extra high voltage overhead transmission lines
- *Commissioning year*: 2036
- *Project description*: New 400 kV interconnection between Bosnia and Herzegovina and Montenegro that will connect SS Gacko (BA) with SS Brezna (ME) with total length of about 51 km



Project specific inputs

- *Investment costs (CAPEX):* 30 mil. EUR
- *Operation costs (OPEX):* 0.10 mil. EUR (BA); 0.10 mil. EUR-0.20 mil. EUR (ME)
- *GTC increase in 2040/2050:*
 - BA – ME 567 MW
 - ME – BA 259 MW
- *Expected lifetime:* 70 years
- *Length:* 51 km



Calculated project benefits

Specific criteria	Indicator	Unit	2030	2040	2050
<i>Market Integration</i>	B1. Socio-economic Welfare	mil EUR/yr	-	0.50	3.44
<i>Sustainability</i>	B2. Additional societal benefit due to CO ₂ variation	Tons/yr	-	-574.59	0
		mil EUR/yr	-	-0.20	0
<i>Energy efficiency</i>	B5. Variation in Grid Losses	MWh/yr	-	22,353	24,691
		mil EUR/yr	-	2.17	2.54
<i>Security of Supply</i>	B6. Security of Supply: Adequacy	MWh/yr	-	-610	-17,240
		mil EUR/yr	-	-1.83	-51.72

CBA E02 results

Benefits

Costs

Discount
rate

Economic Indicator	Unit	Result
NPV	<i>mil EUR</i>	-126.00
B/C	-	0.16

Economic Indicator	Result	Points received
B/C	0.16	0

CBA E03

400 kV Brezna – Piva Mountain –
Sarajevo 20

Project specific data

E03: New 400 kV interconnection between Montenegro and Bosnia and Herzegovina, 400 kV overhead line Brezna-Sarajevo with construction 400/220 kV substation Piva's mountain

- *Project promoter(s)*: CGES (ME), NOSBiH/Elektroprijenos BiH (BA)
- *Infrastructure category*: High and extra high voltage overhead transmission lines
- *Commissioning year*: 2033
- *Project description*: New 400 kV interconnection between Montenegro and Bosnia and Herzegovina that would connect 400/110/35 kV substation Brezna with 400/220/110/x substation Sarajevo 20 with construction of substation 400/220 kV Piva's mountain that will be constructed in two phases



Project specific inputs

- *Investment costs (CAPEX):* 76.8 mil. EUR
- *Operation costs (OPEX):* 0.07 mil. EUR (ME); 0.35-0.76 mil. EUR (BA)
- *GTC increase in 2040/2050:*
 - BA – ME 584 MW
 - ME – BA 725 MW
- *Expected lifetime:* 60 years
- *Length:* 67.2 km



Calculated project benefits

Specific criteria	Indicator	Unit	2030	2040	2050
<i>Market Integration</i>	B1. Socio-economic Welfare	mil EUR/yr	-	2.01	2.22
<i>Sustainability</i>	B2. Additional societal benefit due to CO ₂ variation	Tons/yr	-	4,467	0
		mil EUR/yr	-	1.57	0
<i>Energy efficiency</i>	B5. Variation in Grid Losses	MWh/yr	-	22,353	24,691
		mil EUR/yr	-	2.17	2.54
<i>Security of Supply</i>	B6. Security of Supply: Adequacy	MWh/yr	-	1,320	-28,830
		mil EUR/yr	-	3.96	-86.49

CBA E03 results

Benefits

Costs

Discount
rate

Economic Indicator	Unit	Result
NPV	<i>mil EUR</i>	-186.94
B/C	-	0.24

Economic Indicator	Result	Points received
B/C	0.24	0

CBA E04

Trans Balkan Corridor (BA & ME
section)

Project specific data

**E04: Trans Balkan Corridor: Double OHL 400 kV
Bajina Bašta (RS) – Višegrad (BA)/Pljevlja (ME) (BA&ME
section)**

- *Project promoter(s)*: NOSBiH/Elektroprijenos BiH (BA), CGES (ME)
- *Infrastructure category*: High and extra high voltage overhead transmission lines
- *Commissioning year*: 2027
- *Project description*: Increasing NTC between Serbia and Bosnia and Herzegovina, enabling full capacity production of HPP Višegrad (N-1 criteria), and increasing and support to RES integration



Project specific inputs

- *Investment costs (CAPEX):* 19.2 mil. EUR
- *Operation costs (OPEX):* 0.03-0.18 mil. EUR (BA); 0.07-0.38 mil. EUR (ME)
- *GTC increase in 2030/2040/2050:*
 - BA – RS 300 MW
 - RS – BA 500 MW
 - ME – RS 600 MW
 - RS – ME 600 MW
- *Expected lifetime:* 70 years
- *Length:* 32.1 km



Calculated project benefits

Specific criteria	Indicator	Unit	2030	2040	2050
<i>Market Integration</i>	B1. Socio-economic Welfare	mil EUR/yr	4.20	7.77	11.96
<i>Sustainability</i>	B2. Additional societal benefit due to CO ₂ variation	Tons/yr	27,108	31,893	0
		mil EUR/yr	2.05	11.19	0
<i>Energy efficiency</i>	B5. Variation in Grid Losses	MWh/yr	28,645	31,642	34,953
		mil EUR/yr	2.37	3.07	3.58
<i>Security of Supply</i>	B6. Security of Supply: Adequacy	MWh/yr	-	3,550	-28,070
		mil EUR/yr	-	10.65	-84.21

CBA E04 results

Benefits

Costs

Discount
rate

Economic Indicator	Unit	Result
NPV	<i>mil EUR</i>	59.95
B/C	-	3.78

Economic Indicator	Result	Points received
B/C	3.78	13

CBA E05

400 kV Banja Luka 6 – Mostar 4

Project specific data

E05: Internal transmission line 400 kV Banja Luka 6 - Mostar 4

- *Project promoter(s)*: NOSBiH/Elektroprijenos BiH (BA)
- *Infrastructure category*: High and extra high voltage overhead transmission lines
- *Commissioning year*: 2034
- *Project description*: Enabling and supporting integration of a large number of RES, enabling the transfer of energy through Bosnia and Herzegovina power system and avoiding possible congestion in the transmission network, further development and integration of the market



Project specific inputs

- *Investment costs (CAPEX):* 164 mil. EUR
- *Operation costs (OPEX):* 1.64 mil EUR/yr
- *GTC increase in 2040/2050:*
 - BA – RS 200 MW
 - RS – BA 200 MW
 - BA – ME 400 MW
 - ME – BA 350 MW
- *Expected lifetime:* 70 years
- *Length:* 230 km



Calculated project benefits

Specific criteria	Indicator	Unit	2030	2040	2050
<i>Market Integration</i>	B1. Socio-economic Welfare	mil EUR/yr	-	-3.82	3.50
<i>Sustainability</i>	B2. Additional societal benefit due to CO ₂ variation	Tons/yr	-	-7,529	0
		mil EUR/yr	-	-2.64	0
<i>Energy efficiency</i>	B5. Variation in Grid Losses	MWh/yr	-	13,354	14,751
		mil EUR/yr	-	1.30	1.51
<i>Security of Supply</i>	B6. Security of Supply: Adequacy	MWh/yr	-	1,260	-18,160
		mil EUR/yr	-	3.78	-54.48

CBA E05 results

Benefits

Costs

Discount
rate

Economic Indicator	Unit	Result
NPV	<i>mil EUR</i>	-256.28
B/C	-	0.06

Economic Indicator	Result	Points received
B/C	0.06	0

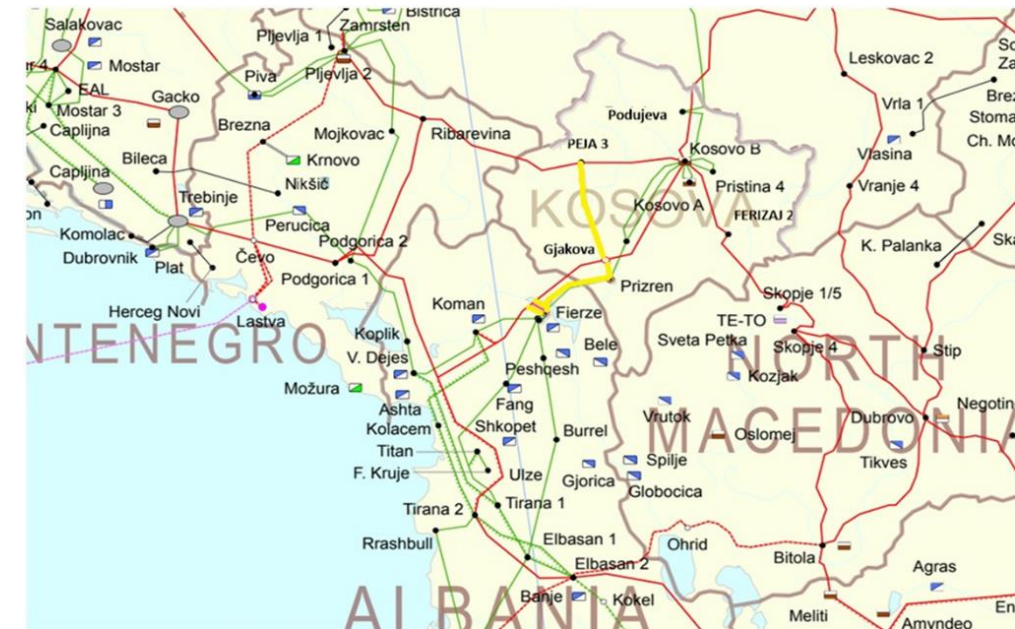
CBA E06

400 kV Prizren – Fierza

Project specific data

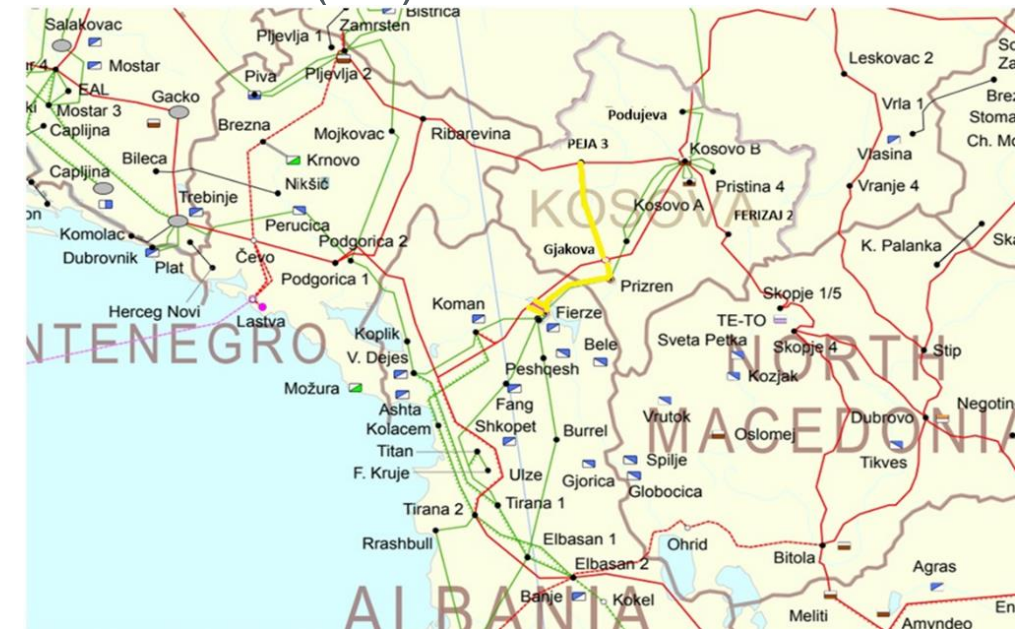
E06: Reconfiguration of 400 kV grid and new 400 kV interconnection Albania-Kosovo*

- *Project promoter(s)*: KOSTT (XK), OST(AL)
- *Infrastructure category*: High and extra high voltage overhead transmission lines
- *Commissioning year*: 2030
- *Project description*: The project consists of the extension of SS Fierza to 400 kV level and construction of a new 400 kV interconnection between Albania and Kosovo



Project specific inputs

- *Investment costs (CAPEX):* 83 mil. EUR
- *Operation costs (OPEX):* 0.01-0.05 mil. EUR (AL); 0.02-0.08 mil. EUR (XK)
- *GTC increase in 2030/2040/2050:*
 - AL – KS 500 MW
 - KS – AL 500 MW
- *Expected lifetime:* 40 years
- *Length:* 25 km



Calculated project benefits

Specific criteria	Indicator	Unit	2030	2040	2050
<i>Market Integration</i>	B1. Socio-economic Welfare	mil EUR/yr	7.07	-5.82	2.45
<i>Sustainability</i>	B2. Additional societal benefit due to CO ₂ variation	Tons/yr	48,846	-14,861	0
		mil EUR/yr	3.69	-5.20	0
<i>Energy efficiency</i>	B5. Variation in Grid Losses	MWh/yr	15,242	16,837	18,599
		mil EUR/yr	1.26	1.64	0.95
<i>Security of Supply</i>	B6. Security of Supply: Adequacy	MWh/yr	-	-1,710	46,450
		mil EUR/yr	-	-5.13	139.35

CBA E06 results

Benefits

Costs

Discount
rate

Economic Indicator	Unit	Result
NPV	<i>mil EUR</i>	226.02
B/C	-	4.07

Economic Indicator	Result	Points received
B/C	4.07	14

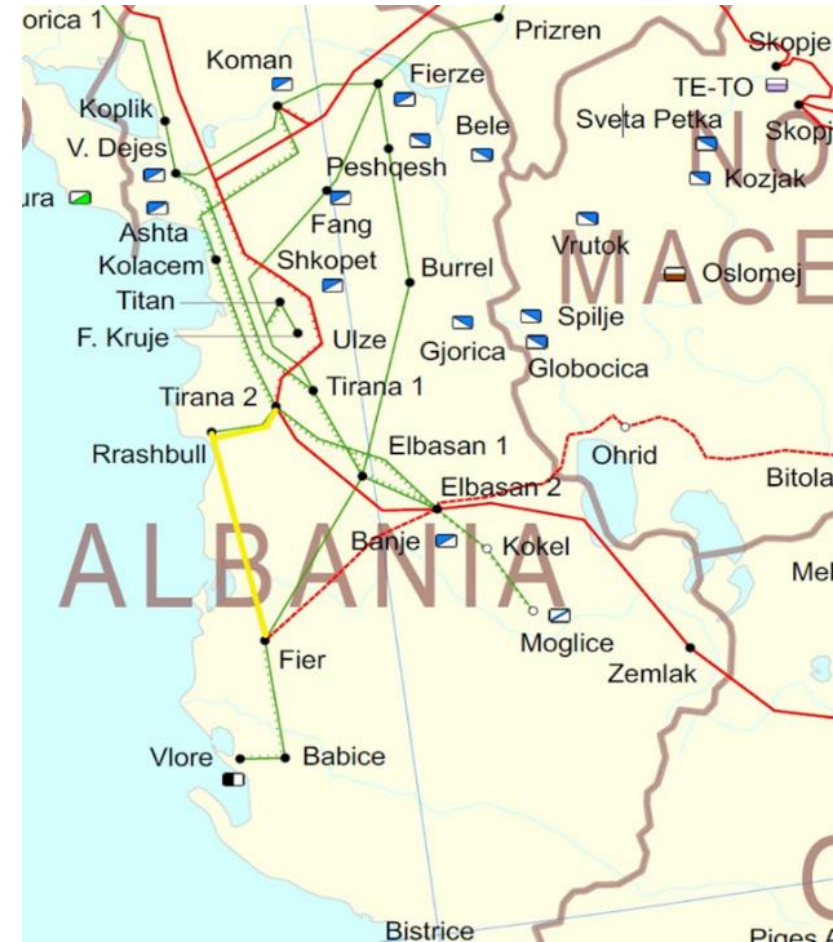
CBA E07

400 kV Fier – Rrashbull – Tirana 2

Project specific data

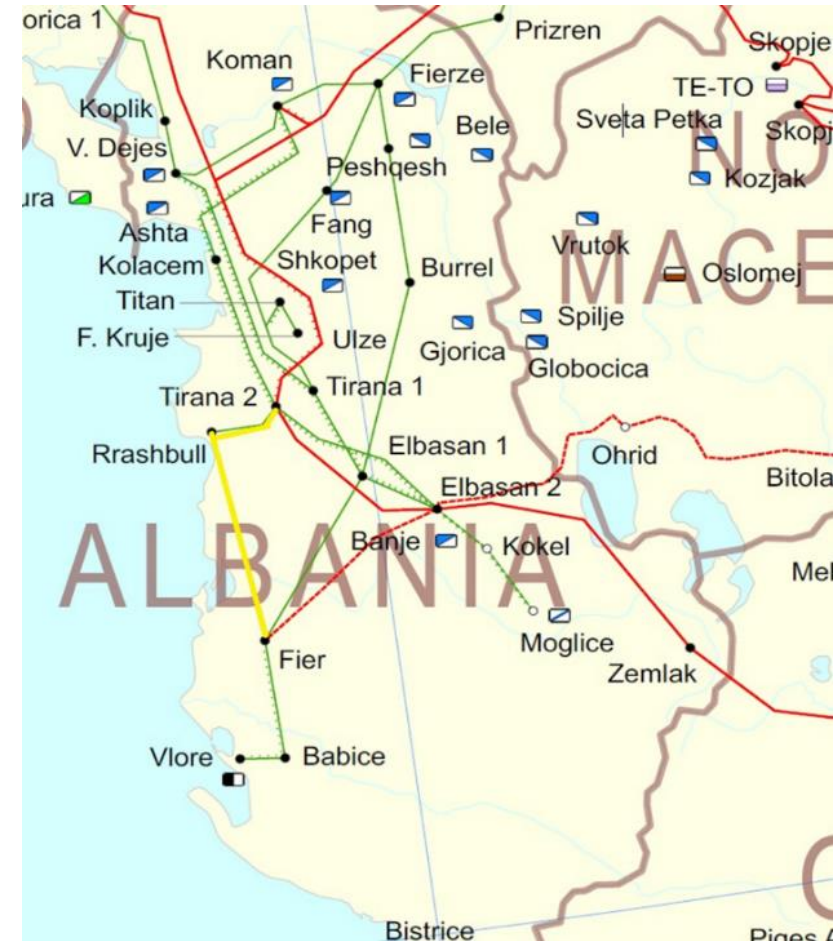
E07: Closing the 400 kV Albanian internal ring

- *Project promoter(s)*: OST(AL)
- *Infrastructure category*: High and extra high voltage overhead transmission lines
- *Commissioning year*: 2030
- *Project description*: The project consists of closing the 400kV internal transmission lines in a ring topology through the construction of new 400kV transmission line between substations Fier-Rrashbull and further to Tirana2



Project specific inputs

- *Investment costs (CAPEX):* 31 mil. EUR
- *Operation costs (OPEX):* 0.01-0.05 mil. EUR
- *GTC increase in 2030/2040/2050:*
 - AL – KS 200 MW
 - KS – AL 200 MW
 - AL – ME 50 MW
 - ME – AL 100 MW
 - AL – MK 100 MW
 - MK – AL 100 MW
- *Expected lifetime:* 40 years
- *Length:* 78 km



Calculated project benefits

Specific criteria	Indicator	Unit	2030	2040	2050
<i>Market Integration</i>	B1. Socio-economic Welfare	mil EUR/yr	0.77	-7.51	3.05
<i>Sustainability</i>	B2. Additional societal benefit due to CO ₂ variation	Tons/yr	7,474	-29,799	0
		mil EUR/yr	0.57	-10.46	0
<i>Energy efficiency</i>	B5. Variation in Grid Losses	MWh/yr	7,884	8,709	9,620
		mil EUR/yr	0.65	0.85	0.60
<i>Security of Supply</i>	B6. Security of Supply: Adequacy	MWh/yr	-	1,450	37,180
		mil EUR/yr	-	4.35	111.54

CBA E07 results

Benefits

Costs

Discount
rate

Economic Indicator	Unit	Result
NPV	<i>mil EUR</i>	177.23
B/C	-	7.43

Economic Indicator	Result	Points received
B/C	7.43	17

CBA E08

400 kV Balti – Dnestrovsk HPP 2

Project specific data

E08: 330 kV OHL Balti (MD) - Dnestrovsk HPP-2 (UA)

- *Project promoter(s)*: Moldelectrica (MD), Ukrenergo (UA)
- *Infrastructure category*: High and extra high voltage overhead transmission lines
- *Commissioning year*: 2032
- *Project description*: Strengthening the electricity interconnection between Republic of Moldova and Ukraine. Increasing the security of supply



Project specific inputs

- *Investment costs (CAPEX):* 54 mil. EUR
- *Operation costs (OPEX):* 0.15 mil EUR/yr
- *GTC increase in 2040/2050:*
 - UA – MD 500 MW
 - MD – UA 500 MW
- *Expected lifetime:* 50 years
- *Length:* 130 km



Calculated project benefits

Specific criteria	Indicator	Unit	2030	2040	2050
<i>Market Integration</i>	B1. Socio-economic Welfare	mil EUR/yr	-	25.42	-137.44
<i>Sustainability</i>	B2. Additional societal benefit due to CO ₂ variation	Tons/yr	-	565,361	0
		mil EUR/yr	-	198.44	0
<i>Energy efficiency</i>	B5. Variation in Grid Losses	MWh/yr	-	22,643	25,012
		mil EUR/yr	-	2.21	3.27
<i>Security of Supply</i>	B6. Security of Supply: Adequacy	MWh/yr	-	6,290	3,573,090
		mil EUR/yr	-	18.87	10,719

CBA E08 results

Benefits

Costs

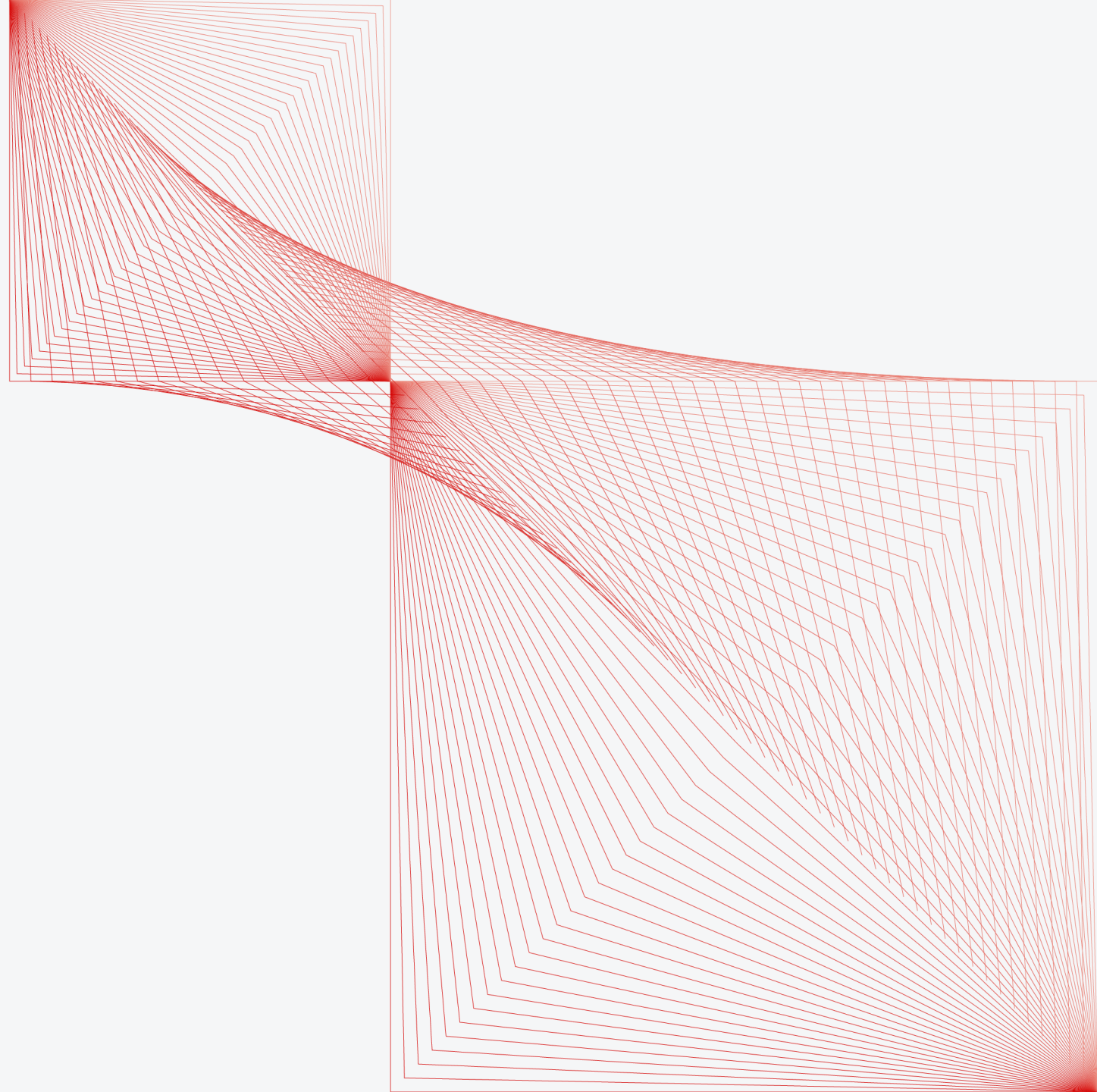
Discount
rate

Economic Indicator	Unit	Result
NPV	<i>mil EUR</i>	24,797
B/C	-	549

Economic Indicator	Result	Points received
B/C	549	20

CBA E13

BESS 225 MW



Project specific data

E13: DTEK STORAGE 225 MW

- *Project promoter(s)*: JSC DTEK WESTENERGY (UA)
- *Infrastructure category*: Electricity storage
- *Commissioning year*: 2025-2028
- *Project description*: Construction of 225 MW/450 MWh battery sites located in several locations in Western and Central Ukraine with a single control centre to ensure the power oscillation damping (POD) control and to provide ancillary services (FCR, aFRR) to the power grids of Ukraine and Moldova (UA/MD)



Project specific inputs

- *Investment costs (CAPEX):* 247.5 mil. EUR
- *Expected lifetime:* 12 years
- *Installed capacity:* 225 MW
- *Storage capacity:* 450 MWh



Calculated project benefits

Specific criteria	Indicator	Unit	2030	2040	2050
<i>Market Integration</i>	B1. Socio-economic Welfare	mil EUR/yr	9.10	37.98	-1.09
<i>Sustainability</i>	B2. Additional societal benefit due to CO ₂ variation	Tons/yr	56,454	179,023	0
		mil EUR/yr	4.27	62.84	0
<i>Energy efficiency</i>	B5. Variation in Grid Losses	MWh/yr	2,891	3,193	3,527
		mil EUR/yr	0.24	0.31	0.36
<i>Security of Supply</i>	B8. Security of Supply: Adequacy	MWh/yr	-	6,130	-12,190
		mil EUR/yr	-	18.39	-36.57

CBA E13 results

Benefits

Costs

Discount
rate

Economic Indicator	Unit	Result
NPV	<i>mil EUR</i>	339,54
B/C	-	2.05

Economic Indicator	Result	Points received
B/C	2.05	12

Thank you for your attention



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