Environmental Product Declaration

In accordance with ISO 14025 and EN 15804:2012+A2:2019 for:

Regutec FITNESS SPORT

Programme: Národní program environmentálního značení

Programme operator: CENIA (www.cenia.cz)

EPD registration number:

Publication date: 2021-11-30 Valid until: 2026-11-29

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com



General information

Programme information

Programme:	Národní program environmentálního značení
Address:	CENIA, Česká informační agentura životního prostředí Vršovická 1442/65, 100 10 Praha 10
Website:	www.cenia.cz
E-mail:	info@cenia.cz

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product category rules (PCR): ČSN EN 15804+A2, EN 16810
PCR review was conducted by: The PCR is standardized by CEN
Independent third-party verification of the declaration and data, according to ISO 14025:2006:
☐ EPD process certification ☒ EPD verification
Third party verifier: prof. Ing. Vladimír Kočí, Ph.D. MBA., LCA Studio, s.r.o.
In case of recognised individual verifiers: Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier:
□ Yes ⊠ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but from different software may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD: Regutec a.s.

Contact: Ing. Petr Vacek, Ph.D., tel.: +420 722 973 302, petr.vacek@regutec.com

<u>Description of the organisation:</u> The company was established as an entirely new enterprise in 1993. From the very beginning, it has been engaged in the production of moulded rubber products made of recycled tyres, and this continues to be its principal area of business to this day.

Main use of Regutec rubber products

- children's playgrounds
- sports surfaces
- stable floor coverings horse stables
- industrial floors
- balconies, terraces
- sound-reduction walls
- vibration insulation
- sound reduction for tram and railway lines

<u>Product-related or management system-related certifications:</u> ISO 14024 Type I environmental labels, ISO 9001 and 14001 certificates

Name and location of production site(s):

Regutec a.s. Němčičky 92, Němčičky 664 66, Czech Republic

Product information

Product name: FITNESS SPORT

<u>Product description:</u> FITNESS SPORT is a flooring material made of recycled rubber tyres. It is available in the form of puzzle-like panels applicable in private home gyms, sports halls, halls for martial arts and weightlifting zones. The excellent health and safety parameters make it also a perfect material for children playgrounds, cloakrooms in kindergartens or schools. The panels are characterised by easy assembly with no gluing to the substructure, therefore it does not require specialized workforce.

UN CPC code: 36220 Unvulcanised compounded rubber, in primary forms in plates

Characteristics	Unit	Quantity
Product thickness	[mm]	40
Product weight	[kg·m ⁻²]	29.60
Product form:	[-]	Puzzle panel



LCA information

Functional unit / declared unit: 1 m²

Reference service life: 1 year (as required by EN 16810:2017)

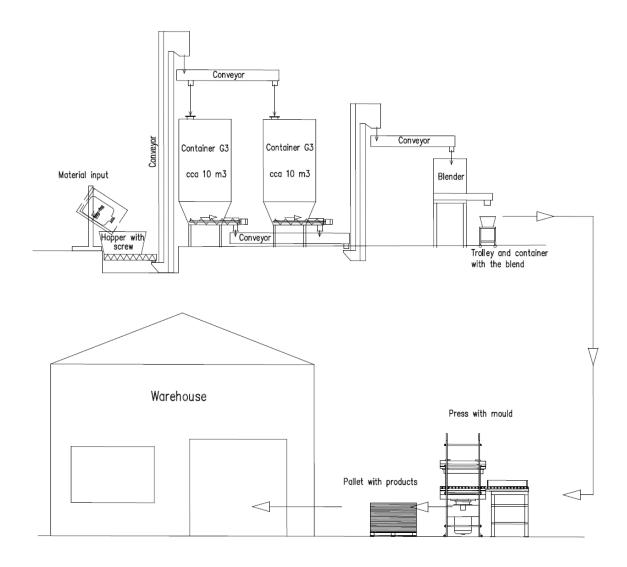
Time representativeness: 2020 production

<u>Database(s)</u> and <u>LCA software used:</u> Professional Database, Extension database XIV: Construction materials and ecoinvent 3.6 installed in GaBi ts (Service Pack 40)

<u>Description of system boundaries:</u> Cradle-to-grave with modules A1–A5, B2, C1-C4 and D as required by EN 16810:2017

System diagram:

Scheme of existing production Regutec a.s. in Němčičky



<u>Cut-off criteria</u>: Life cycle inventory complies with requirements of PCRs and standards listed in References. As such it includes all identified energy and material flows necessary for:

- production and packaging (modules A1-A3) of the FITNESS SPORT panels,
- transport of the panels to consumer (module A4),
- manual installation of the panels and construction waste disposal (module A5),
- maintenance of the panels (module B2) comprising weekly wet cleaning with water and detergent,
- end-of-life (modules C1-C4) of the panels comprising incineration of 80 % of waste and landfilling of the remaining 20 %,
- benefits beyond the system boundaries (module D) comprising energy gains from incineration and avoided landfill of the incinerated waste.

The Life cycle inventory excludes environmental impacts related with recycling of the waste rubber in accordance with "polluter pays" principle defined in the requirements: see e.g. section 6.3.4.1 in EN 16810:2017.

Allocation: Production mass allocation has been applied for the input materials and energies.

<u>Transport scenarios</u>: Transport of raw materials, final product and wastes in modules A2 and A4 is modelled using real-life distances representing the state in 2020. Transport of waste in C2 considers 50 km distance to a hypothetical disposal site. 16-32 t and 3.5-7.5 t EURO6 trucks are considered as vehicles for transport of materials and wastes respectively.

Energy mix: Chart below shows gross electricity generation mix of the Czech Republic according to Yearly Report on the Operation of the Czech Electricity Grid for 2020 published by Energy Regulatory Office. The power plants represented by this mix supplied 81.4 TWh of electricity to Czech consumers in 2020. This amount was supplemented by additional 13.4 TWh imported from surrounding countries (Austria, Germany, Poland, Slovakia). Abbreviation BDMW in the chart equals to Biologically Degradable Municipal Waste.

Natural gas Other gases Hard coal 2% Pumped storage 2% **Biogas** 3% Brown coal 36% **Biomass** RFS 3% 13% **Photovoltaic** Hydro Wind 1% Nuclear fuel **BDMW** 37% 0,1%

Fuels and technologies used in gross electricity generation in 2020

Additional information

Website: Further details regarding the certified product are available at the company website https://www.regutec.com/

LCA Practitioner: Ing. Karel Struhala, Ph.D.; Brno University of Technology, Faculty of Civil Engineering; struhala.k@fce.vutbr.cz

Modules declared, geographical scope, share of specific data (in GWP-GHG indicator) and data variation:

	Produc	ct stage)	Constr proces stage	ruction	Use st	age						End of	ilife sta	Resource recovery stage		
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling potential
Module	A 1	A2	А3	A4	A5	B1	B2	В3	B4	B5	В6	B7	C1	C2	C3	C4	D
Modules declared	х	х	х	х	х	ND	х	ND	ND	ND	ND	ND	х	х	х	х	х
Geography	CZ / EU27	EU27	CZ / EU27	EU27	EU27		EU27						EU27	EU27	EU27	EU27	EU27
Specific data used																	
Variation – products																	
Variation – sites																	

Acronyms: x = module is declared; ND = module is not declared; CZ = data representing situation in Czech Republic; EU27 = data representing situation in the European Union.

Content information

Product

Product components	Weight [kg·m ⁻²]	Post-consumer material [weight-%]	Renewable material [weight-%]
Recycled SBR rubber	27.28	100.00%	0.00%
PU binder	2.32	0.00%	0.00%
water	0.02	0.00%	0.00%
Separator	0.01	0.00%	0.00%
TOTAL	29.63	92,21%	0.00%

Packaging materials	Weight [kg·m ⁻²]	Weight-% versus the product
PE foil	0.136	0.46 %
Wooden pallet	0.754	2.54 %

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional or declared unit
N-methyl-2-pyrrolidone		872-50-4	≤ 0.03 %

Recycled material

<u>Provenience of recycled materials (pre-consumer or post-consumer) in the product:</u> FITNESS SPORT panels are made of recycled rubber granules coming from End-of-Life of car tyres.

Environmental Information

Potential environmental impact – mandatory indicators according to EN 15804

	Results per declared unit															
INDICATOR	UNIT	A1-A3	A 4	A5	B1	B2	В3	B4	В5	В6	В7	C1	C2	С3	C4	D
WP-fossil	kg CO ₂ eq.	1.04·10 ¹	2.01·10 ⁰	1.85·10 ⁻¹	ND	1.07·10 ⁻²	ND	ND	ND	ND	ND	0.00·10 ⁰	1.23·10 ⁻¹	6.01·10 ¹	4.24·10 ⁻¹	-3.61·10¹
GWP-biogenic	kg CO ₂ eq.	-5.86·10°	3.38·10 ⁻²	5.04·10°	ND	6.28·10 ⁻⁵	ND	ND	ND	ND	ND	0.00·10 ⁰	2.06·10 ⁻³	6.99·10 ⁻³	-4.43·10 ⁻³	-2.50·10 ⁻¹
GWP-luluc	kg CO ₂ eq.	3.21·10 ⁻²	1.69·10 ⁻²	2.18·10 ⁻⁴	ND	2.63·10 ⁻³	ND	ND	ND	ND	ND	0.00·100	1.03·10 ⁻³	3.67·10 ⁻³	3.55·10-4	-4.49·10 ⁻²
GWP-total	kg CO2 eq.	4.62·10 ⁰	2.06·10 ⁰	5.23·10 ⁰	ND	1.34·10 ⁻²	ND	ND	ND	ND	ND	0.00·10 ⁰	1.26·10 ⁻¹	6.02·10 ¹	4.20·10 ⁻¹	-3.64·10 ¹
ODP	kg CFC 11 eq.	1.11·10 ⁻⁷	2.63·10 ⁻¹⁶	3.99·10 ⁻¹⁶	ND	3.86·10 ⁻¹⁰	ND	ND	ND	ND	ND	0.00·100	1.61·10 ⁻¹⁷	3.19·10 ⁻¹⁴	1.02·10 ⁻¹⁵	-5.77·10 ⁻¹³
AP	mol H⁺ eq.	3.40·10 ⁻²	1.22·10 ⁻²	1.07·10 ⁻³	ND	6.03·10 ⁻⁵	ND	ND	ND	ND	ND	0.00·10 ⁰	7.45·10-4	1.04·10 ⁻²	1.27·10 ⁻³	-4.02·10 ⁻²
EP-freshwater	kg PO ₄ ³⁻ eq.	4.55·10-4	6.11·10 ⁻⁶	7.16·10 ⁻⁶	ND	5.85·10 ⁻⁶	ND	ND	ND	ND	ND	0.00·10 ⁰	3.74·10 ⁻⁷	4.64·10 ⁻⁶	7.83·10 ⁻⁵	-3,92·10 ⁻⁴
EP-marine	kg N eq.	8.76·10 ⁻³	5.98·10 ⁻³	1.54·10 ⁻³	ND	5.23·10 ⁻⁵	ND	ND	ND	ND	ND	0.00·10 ⁰	3.66·10-4	2.34·10 ⁻³	2.88·10-4	-1.39·10 ⁻²
EP-terrestrial	mol N eq.	9.14·10 ⁻²	6.62·10 ⁻²	4.26·10 ⁻³	ND	1.76·10 ⁻⁴	ND	ND	ND	ND	ND	0.00·10 ⁰	4.05·10 ⁻³	4.80·10 ⁻²	3.16·10 ⁻³	-1.49·10 ⁻¹
POCP	kg NMVOC eq.	2.87·10 ⁻²	1.13·10-2	2.56·10 ⁻³	ND	5.33·10 ⁻⁵	ND	ND	ND	ND	ND	0.00.100	6.91·10 ⁻⁴	6.52·10 ⁻³	9.22·10-4	-3.72·10 ⁻²
ADP- minerals&metals*	kg Sb eq.	1.96·10 ⁻⁵	1.57·10 ⁻⁷	1.21·10 ⁻⁸	ND	1.89·10 ⁻⁷	ND	ND	ND	ND	ND	0.00·10 ⁰	9.58·10 ⁻⁹	4.35·10 ⁻⁷	2.92·10 ⁻⁸	-8.36·10 ⁻⁶
ADP-fossil*	MJ	2.26·10 ²	2.74·10¹	2.54·10°	ND	1.95·10 ⁻¹	ND	ND	ND	ND	ND	0.00.100	1.67·10°	2.79·10 ¹	6.19·10°	-5.46·10 ²
WDP	m³	3.79·10°	1.79·10 ⁻²	1.88·10 ⁻²	ND	-1.94·10 ⁻¹	ND	ND	ND	ND	ND	0.00.100	1.09·10 ⁻³	6.15·10°	-5.22·10 ⁻³	-3.52·10 ⁻¹
Acronyms	GWP-fossil = Glo ODP = Depletion reaching freshwa Accumulated Exc depletion for foss	potential of tater end compeedance; PC	he stratosphe partment; EP DCP = Forma	eric ozone lay -marine = Eu tion potential	er; AP itrophic of trop	= Acidification ation potentians pospheric oson	n poten al, fracti ne; ADF	tial, Accion of noting	cumulat outrients als & m	ed Exc reachi etals =	eedanc ng mar Abiotic	e; EP-freshw ine end comp depletion pot	ater = Eutrop partment; EP	hication pote -terrestrial =	ntial, fraction Eutrophicatio	of nutrients on potential,



Potential environmental impact – additional mandatory and voluntary indicators according to EN 15804

	Results per declared unit															
INDICATOR	UNIT	A1-A3	A4	A 5	B1	B2	В3	В4	B5	В6	В7	C1	C2	C3	C4	D
Particulate matter	[Disease incidences]	3.36·10 ⁻⁷	7.06·10 ⁻⁸	1.01·10 ⁻⁸	ND	5.96·10 ⁻¹⁰	ND	ND	ND	ND	ND	0.00.100	4.31·10 ⁻⁹	1.33·10 ⁻⁷	1.25·10 ⁻⁸	-3.11·10
Ionising radiation, human health	[kBq U ₂₃₅ eq.]	8.22·10 ⁻¹	4.75·10 ⁻³	4.03·10 ⁻³	ND	8.26·10 ⁻⁴	ND	ND	ND	ND	ND	0.00·100	2.90·10 ⁻⁴	8.80·10-2	1.03·10 ⁻²	-1.62·10°
Ecotoxicity, freshwater	[CTUe]	1.36·10 ²	1.98·10 ¹	4.83·10°	ND	5.28·10 ⁻¹	ND	ND	ND	ND	ND	0.00·100	1.21·10°	1.02·10 ¹	5.88·10°	-1.06·10 ²
Human toxicity, cancer	[CTUh]	4.95·10 ⁻⁹	4.01 · 10 -10	1.04·10 ⁻¹⁰	ND	2.50·10-11	ND	ND	ND	ND	ND	0.00.100	2.45·10 ⁻¹¹	9.15·10 ⁻¹⁰	2.63·10 ⁻¹⁰	-6.81·10 ⁻⁹
Human toxicity, non-cancer	[CTUh]	1.39·10 ⁻⁷	2.36·10 ⁻⁸	1.44·10 ⁻⁸	ND	3.15·10 ⁻¹⁰	ND	ND	ND	ND	ND	0.00·100	1.44·10 ⁻⁹	9.22.10-8	2.21·10 ⁻⁸	-3.85·10 ⁻⁷
Land Use	[Pt]	5.09·10 ²	9.41·10°	2.09·10 ⁻¹	ND	3.19·10 ⁻¹	ND	ND	ND	ND	ND	0.00·100	5.75·10 ⁻¹	8.11·10 ⁰	4.21 · 10 - 1	-1.10·10 ²



Use of resources

	Results per declared unit															
INDICATOR	UNIT	A1-A3	A4	A5	B1	B2	В3	B4	B5	В6	В7	C1	C2	C3	C4	D
PERE	MJ	8.79·10 ¹	1.53·10°	1.82·10 ⁻¹	ND	8.71·10 ⁻²	ND	ND	ND	ND	ND	0.00.100	9.35·10 ⁻²	7.87·10°	4.49·10 ⁻¹	-1.41·10²
PERM	MJ	0.00·100	0.00·100	0.00·100	ND	0.00·100	ND	ND	ND	ND	ND	0.00·100	0.00·10°	0.00·10°	0.00·100	0.00·100
PERT	MJ	8.79·10 ¹	1.53·10 ⁰	1.82·10 ⁻¹	ND	8.71 · 10-2	ND	ND	ND	ND	ND	0.00·100	9.35·10 ⁻²	7.87·10°	4.49·10 ⁻¹	-1.41·10 ²
PENRE	MJ	2.26·10 ²	2.74·10 ¹	2.54·10 ⁰	ND	1.95·10 ⁻¹	ND	ND	ND	ND	ND	0.00·100	1.68·10°	2.79·10 ¹	6.19·10 ⁰	-5.46·10 ²
PENRM	MJ.	0.00·10°	0.00·10 ⁰	0.00·100	ND	0.00·10°	ND	ND	ND	ND	ND	0.00·100	0.00·10°	0.00·100	0.00·100	0.00·100
PENRT	MJ	2.26·10 ²	2.74·10¹	2.54·10 ⁰	ND	2.00·10 ⁻¹	ND	ND	ND	ND	ND	0.00·100	1.68·10°	2.79·10¹	6.19·10 ⁰	-5.46·10²
SM	kg	27.28·10¹	0.00·10 ⁰	0.00·100	ND	0.00·10 ⁰	ND	ND	ND	ND	ND	0.00·100	0.00·10°	0.00·10°	0.00·100	0.00·100
RSF	MJ	0.00·10°	0.00·100	0.00.100	ND	0.00.100	ND	ND	ND	ND	ND	0.00·100	0.00·10°	0.00·100	0.00·100	0.00·100
NRSF	MJ	0.00·10°	0.00·10 ⁰	0.00·100	ND	0.00·10°	ND	ND	ND	ND	ND	0.00·100	0.00·10°	0.00·100	0.00·100	0.00·100
FW	m ³	1.05·10 ⁻¹	1.75·10 ⁻³	5.13·10-4	ND	4.92·10-4	ND	ND	ND	ND	ND	0.00·100	1.07·10-4	1.47·10 ⁻¹	5.70·10 ⁻⁵	-6.63·10 ⁻²
Acronyms	PERE = Use of raw materials; Plused as raw materials SM = Use of second	ERT = Total ι terials; PENR	use of renewa IM = Use of i	able primary non-renewab	energy le prima	resources; P ary energy re	ENRE :	= Use o s used	of non-r as raw	enewal materi	ole prim als; PEI	ary energy e NRT = Total	xcluding non- use of non-re	renewable p enewable prir	rimary energy mary energy	y resources

Waste production and output flows

Waste production

	Results per functional or declared unit															
INDICATOR	UNIT	A1-A3	A4	A5	B1	B2	В3	B4	В5	В6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.74·10 ⁻⁵	1.38·10 ⁻⁹	4.40·10 ⁻¹⁰	ND	5.92·10 ⁻¹²	ND	ND	ND	ND	ND	0.00·100	8.45·10 ⁻¹¹	5.99·10 ⁻⁹	1.11·10 ⁻⁹	-1.70·10 ⁻⁷
Non-hazardous waste disposed	kg	3.11·10 ⁰	4.08·10 ⁻³	1.37·10°	ND	5.48·10 ⁻³	ND	ND	ND	ND	ND	0.00·100	2.49·10 ⁻⁴	6.25·10°	5.90·10°	-2.41·10¹
Radioactive waste disposed	kg	8.93·10 ⁻³	3.32·10 ⁻⁵	2.81·10 ⁻⁵	ND	2.11·10 ⁻⁶	ND	ND	ND	ND	ND	0.00·100	2.03·10 ⁻⁶	9.52·10 ⁻⁴	7.18·10 ⁻⁵	-1.74·10 ⁻²

Output flows

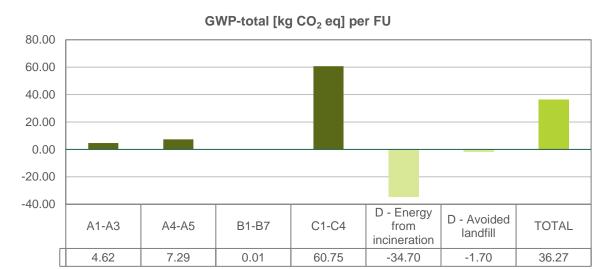
	Results per functional or declared unit															
INDICATOR	UNIT	A1-A3	A4	A5	B1	B2	В3	B4	В5	В6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0.00·100	0.00·100	0.00·100	ND	0.00·100	ND	ND	ND	ND	ND	0.00·100	0.00·10°	0.00·10°	0.00·100	0.00·100
Material for recycling	kg	1.35·10 ¹	0.00·100	0.00·100	ND	0.00·100	ND	ND	ND	ND	ND	0.00·10 ⁰	0.00·10°	0.00·10°	0.00·100	0.00·100
Materials for energy recovery	kg	0.00·100	0.00.100	0.00·100	ND	0.00·100	ND	ND	ND	ND	ND	0.00·10°	0.00·10°	0.00·100	0.00·100	0.00·100
Exported energy, electricity	MJ	0.00·100	0.00.100	0.00·100	ND	0.00·100	ND	ND	ND	ND	ND	0.00·10°	0.00·10°	0.00·100	0.00·100	0.00.100
Exported energy, thermal	MJ	0.00·100	0.00·100	0.00·100	ND	0.00·100	ND	ND	ND	ND	ND	0.00·10 ⁰	0.00·10°	0.00·10°	0.00·100	0.00·100

Information on biogenic carbon content

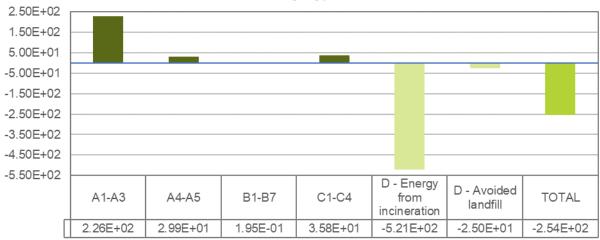
Results per functional or declared unit		
BIOGENIC CARBON CONTENT	Unit	QUANTITY
Biogenic carbon content in product	kg C	-9.87·10 ⁻¹
Biogenic carbon content in packaging	kg C	-2.05·10 ¹

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂.

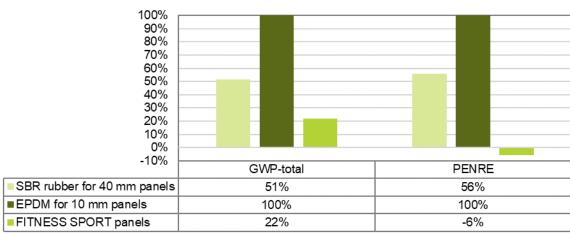
Additional information



PENRE [MJ] per FU



Comparison with environmental impacts of primary materials* (per FU)



^{*} Note: The comparison considers EPDM and SBR production datasets available in ecoinvent 3.6 database.

References

(in alphabetical order)

EN 15804:2012+A2:2019 Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products

EN 16810:2017 Resilient, textile and laminate floor coverings – Environmental product declarations – Product category rules

General Programme Instructions of the International EPD® System. Version 3.01.

ISO 14020: 2000 Environmental labels and declarations - General principles

ISO 14025:2006 Environmental labels and declarations — Type III environmental declarations — Principles and procedures

ISO 14040:2006 Environmental management - Life cycle assessment - Principles and framework

ISO 14044:2006 Environmental management – Life cycle assessment Requirements and guidelines

PCR 2014:14 PCM 2019:14 Construction products (EN 15804: A2) (1.11)

PCR 2019:14-c-PCR-004 Resilient textile and laminate floor coverings (EN 16810) (2019-12-20)

Energy Regulatory Office: Yearly Report on the Operation of the Czech Electricity Grid for 2020

