Methods to Decrease Carbon Emission at the University of Szeged

22nd September 2020
V4 Green Universities - international conference

László Gyarmati
Management, University of Szeged Study and Information Centre, Szeged 6722, Hungary
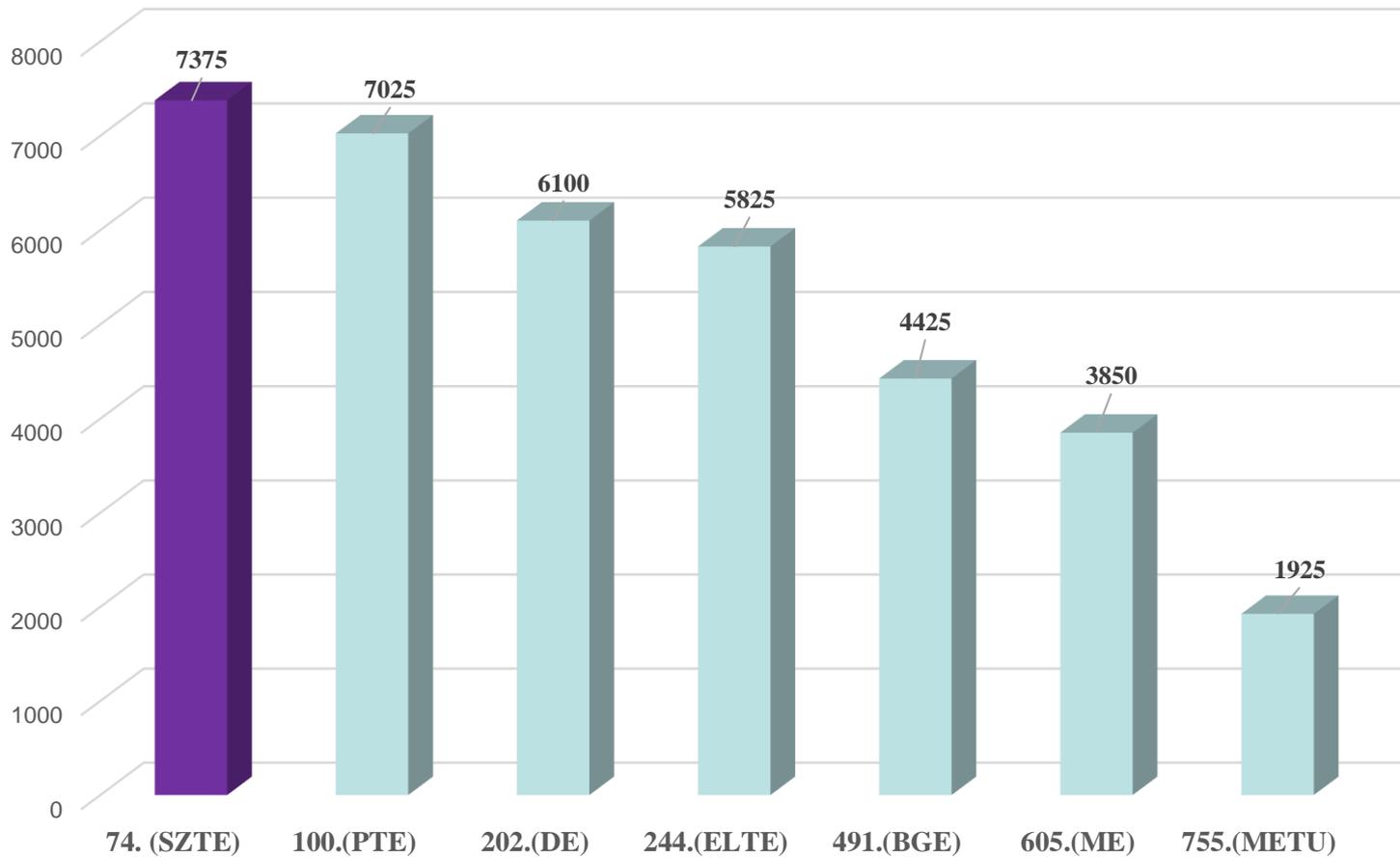gyarmati.laszlo@tik.u-szeged.hu

Visegrad Fund

Some figures

- **21,000** students
- **300** campus sites
- **8,000** academic and
     administrative staff
- **12** faculties
- **19th** GreenMetric survey (2014)

UNIVERSITAS SCIENTIARUM SZEGEDIENSIS
UNIVERSITY OF SZEGED

The Greenest University in Hungary (GreenMetric 2019)

THE Impact Rankings 2020

- **101-200th** in the Overall ranking, **1st in Hungary**
- the only Hungarian HEI ranked among the **300 best universities** in the world **in all 17 Sustainable Development Goals**
- **1st** or **tied 1st** places in Hungary for **13 SDGs**

Pillars of sustainability:
I. Prompt environmental-conscious behaviour

- World Water Day
- Green Oasis in the park of the Study and Information Centre
- Earth Hour programmes
- Earth Day programmes

- Climate tour
- Stress Free Day
- Green film club
- Charity events

Pillars of sustainability:
II. Technical solutions

Example of Hydropower (University of Szeged, Hungary)

Example of Solar Collector(University of Szeged, Hungary)

Example of Geothermal Project (University of Szeged, Hungary)

Example of Solar Panel(University of Szeged, Hungary)

Hydropower: 1 859 167 kWh
Solar Collector: 140 000 kWh
Solar cell: 1 132 103 kWh
Geothermal: 9 641 389 kWh

New goals to tackle the challenges of CO_2 reduction

I. Widespread Carbon Footprint Evaluation with KÖVET association

II. Enhance the adaptation of technical solutions

III. Create new education methods for students, employees and visitors

I. widespread carbon footprint evaluation with KÖVET association

The University of Szeged decided to calculate the whole carbon footprint of the Study and Information Centre using the Bilan Carbone* method.

Two data gathering methods:
- online and offline surveys of the Centre's visitors (N=1754)
- data procession of the building management's internal documentation

SURVEY ⟹ conducted *from February to March* in 2020

33 questions covering four areas related to carbon emission factors:

- *Transportation* (within Szeged for daily transportation, and frequency of travels from hometown to the city)
- *Nutrition* (in the Study and Information Centre, and daily habits)
- *Waste management* (in the Centre during visits, and habits/possibilities at home)
- *Environmentally conscious behaviour* (opinion about the performance of the university, beliefs, recommendations)


*https://www.associationbilancarbone.fr/wp-content/uploads/2018/03/guide-methodologique-en-v2.pdf

Results

Carbon footprint of SZTE TIK operation and students' travels in 2019

	Tons CO2 e	%
Energy (48%)	2556	48
Input materials (28%)	1465	28
Transportation of goods (0%)	1	0
Transport (2%)	114	2
Direct waste (3%)	164	3
Capital goods (0%)	2	0
Travels of employees (19%)	1016	19
Operation of TIK	5318	100
Students (distance transportation) 95%	112800	95
Students (local transportation) 5%	5365	5
Students – combined:	118165	100

OPERATION OF TIK
CARBON FOOTPRINT

Travels of employees (19%)
Direct waste (3%)
Transport (2%)
Energy (48%)
Input materials (28%)
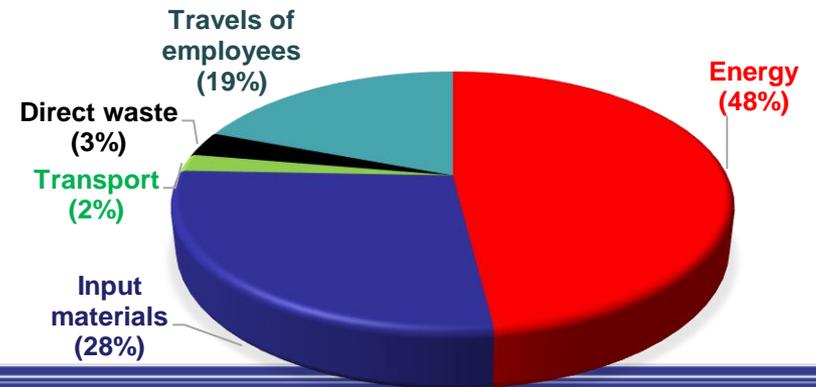
Opinions (N=1754)

„Facing the challenges of global climate change is the biggest task of mankind nowadays"

average 4.1 points on a 1-5 scale

„Who can do the most to solve the environmental problems?"

1. Governments
2. Profit oriented companies
3. Individuals
4. Educational institutions
5. NGOs

„How could citizens be encouraged to live in a more environment-conscious way?"

1. Creating conditions for selective waste collection
2. Financial tools
3. Sharing best practices
4. Social events (activities, flashmob, events, etc.)
5. Personal professional advice
6. Online communication
7. Information leaflets

II. Enhance the adaptation of technical solutions

Frequency Inverters at the Study and Information Centre
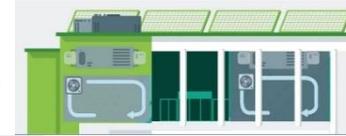
| Machine No.	Area	Rate of return (years)	CO_2 emission reduction (tons/year)
L04	Reading rooms	0,9	43,89
L07	Conference room	1,3	33,69
L10	Cabinet	1,4	16,64
L11	Book storage	1,5	15,54
L12	Offices	1,1	21,51

Electric Cars

The calculated annual CO_2 emission of the University's car fleet is dropped by 16.000 tons/year, which is 15% a reduction of direct emission caused by cars.
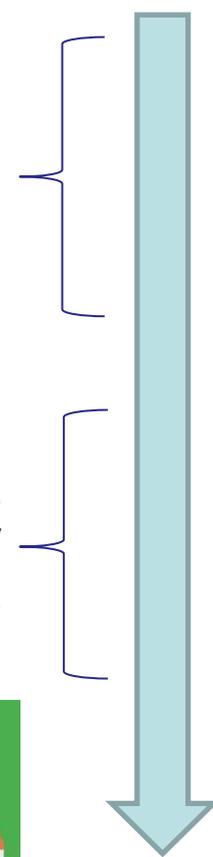
III. Create new education methods for students, employees and visitors
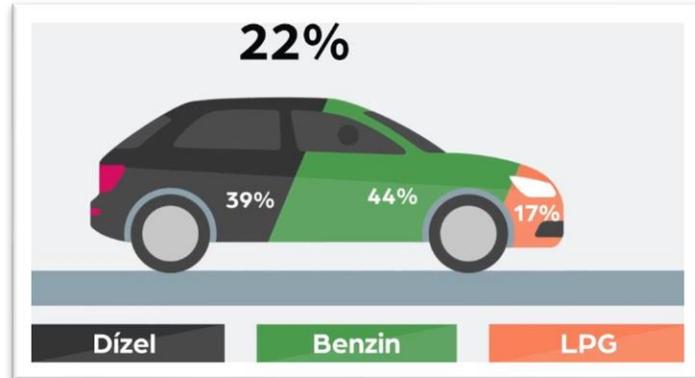
EXPLAINER VIDEOS
and new online green
educational contents

Thank you for your attention.

László Gyarmati
Management, University of Szeged Study and Information Centre, Szeged 6722, Hungary
gyarmati.laszlo@tik.u-szeged.hu