Green Labs – Acting sustainably in UZH labs

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21 September 2022

Greenlab

UZH Sustainability Policy

- 2019: Sustainability Policy comes into force
- 2020: Implementation Strategy for the Sustainability Policy comes into force
  - 23 targets for UZH, including **climate neutrality by 2030**, and more than 80 measures

What can we contribute in labs?

- Education
- Research
- Operations
  - Waste reduction
  - Reduction of energy demand

Today's focus

One week of waste from 12 scientists:

Source: MPL Vienna

UZH Lab waste – General waste

2020

Total : **3233 t**

- General waste: **609 t**
- Recycled material: **444 t** (14%)
- Of which recycled plastics: **1.8 t**, plus
  - **144 m³** pipette boxes (annually)
  - **6'000 l** Styrofoam (in boxes, partially recycled, 2020)

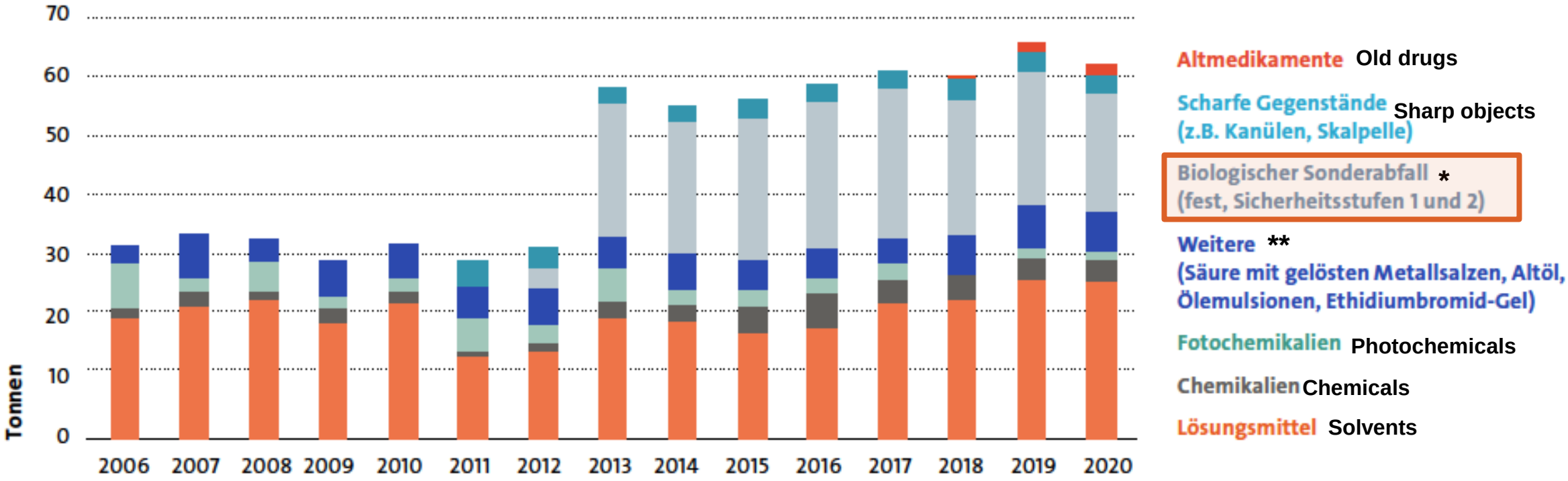
Entsorgungsstatistik von Altprodukten 2018–2020

in t	2020	2019	2018
Gesamt	**3 232.6**	**3 622.0**	**3 595.4**
Betriebskehricht	**608.6**	**1 064.7**	**1 183.7**
Biomasse[18]	**2 117.8**	**1 941.8**	**1 785.4**
Keramik	**0.5**	**0.6**	**0.8**
Rezyklierte Altprodukte	**443.5**	**549.2**	**565.7**
Papier	20.4	8.3	85.0
Karton	22.4	15.0	35.9
Papier-Karton-Gemisch	169.9	231.9	130.2
Elektro- und Elektronikgeräte*	54.8	48.9	43.8
Glas	19.2	36.7	53.6
Metalle	53.7	62.9	57.5
Kunststoffe*	1.8	2.1	1.9
Sperrgut und Bausperrgut*	41.9	55.6	97.1
Mobiliar*	56.8	84.7	57.2
Sonderabfälle	2.7	3.2	3.4
Leuchtstoffröhren und andere Leuchtmittel*	1.0	1.7	2.1
Batterien	1.7	1.4	1.3
Sonstige	0.1	0.1	0.07
Nicht rezyklierte Sonderabfälle[19]	**62.1**	**65.7**	**59.9**

* nur teilweise rezykliert

Lab waste – Hazardous waste

Hazardous waste disposed by the Department Safety, Security and Environment 2006-2020



* Biological hazardous waste (hard, safety level 1 and 2)

** Other (Acid with dissolved metal salts, waste oil, oil emulsions, DNA gel)

Addressing lab waste – 3 Rs

REDUCE REUSE RECYCLE

Environmental Impact

Tips for Reduction

Good Planning	Plan experiments well and try to avoid and reduce consumables
Organize	Organize labs and make inventories to avoid double purchasing and expiration
Smaller Containers	Reduce size of plastics, e.g. 15ml falcon instead of 50ml, T25 instead of T75 etc
Prefer Glass	Use reusable glass instead of plastic whenever possible.
10x buffers	Purchase 10x buffers and prepare 1x solutions in glass containers

Some examples of items we can recycle at UZH

Paper and cardboard

Styrofoam boxes

Pipet tip boxes and racks

Aluminium foil and metal containers

Glass

Find your closest recycling station on campus!

New: More Plastics Recycling at Irchel

- Facility Management Irchel Campus (Betriebsdienst Irchel) provides a collection point for plastics:
- Old products such as plastic containers, plastic packaging, plastic bottles and films of all kinds can be handed in.
- PET drinking bottles must still be disposed via PET recycling.

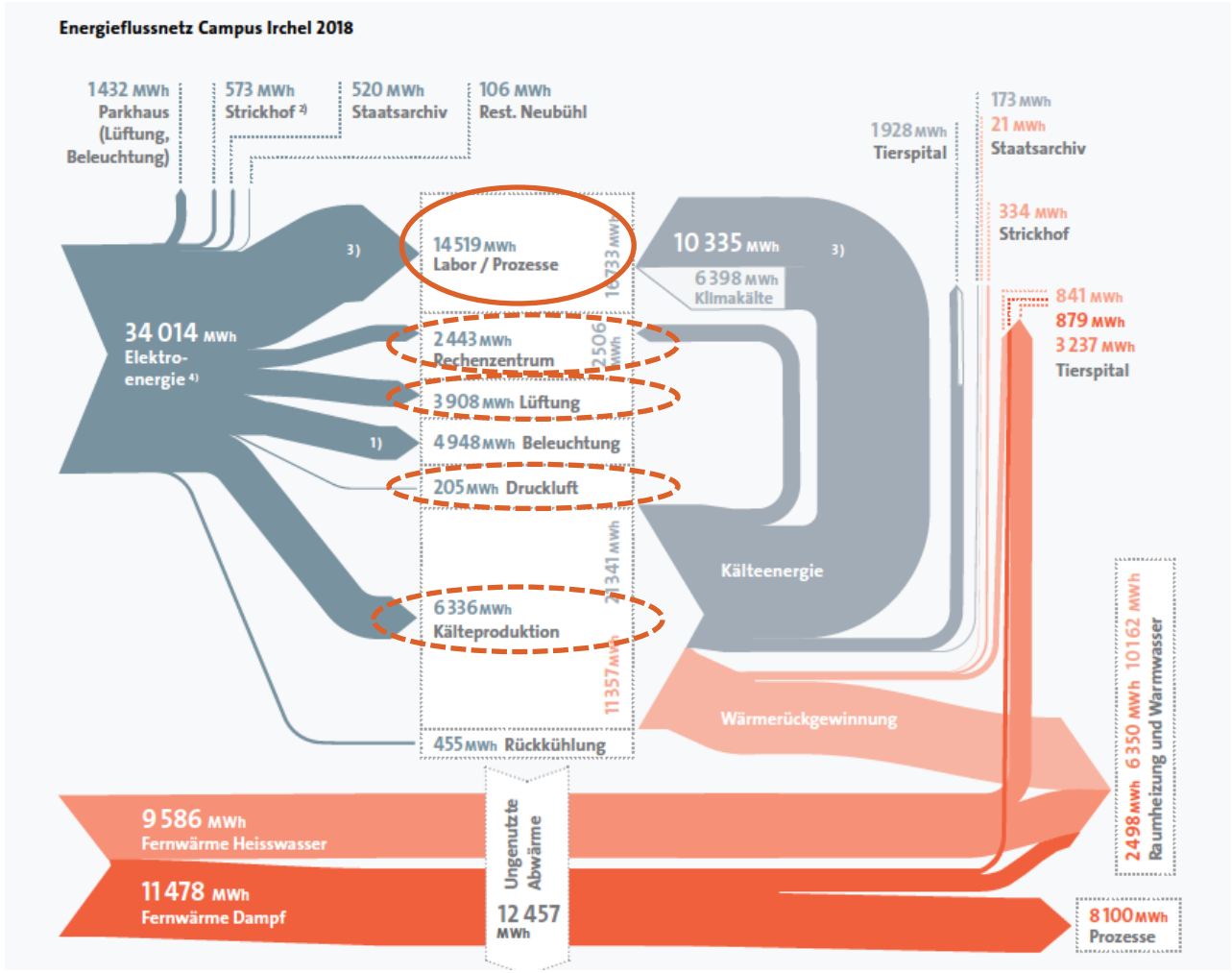
- **Time slot:** Monday to Friday (daily) 10.45–11.15 am
- **Collection point:** Disposal Center Facility Management Irchel Campus Y31-D-50

Energy consumption in labs

- **Irchel Campus consumes 34 MWh electricity** (equivalent to 3 small power plants)
- Labs account for **41% directly,** plus
  - Data Center
  - Ventilation
  - Cooling
- Big factor: **«ultra-deep» freezers (= -80C)**
  - Ca. 200 devices on campus
  - **Consume 3 – 4% of overall UZH electricity!**

Energy for labs

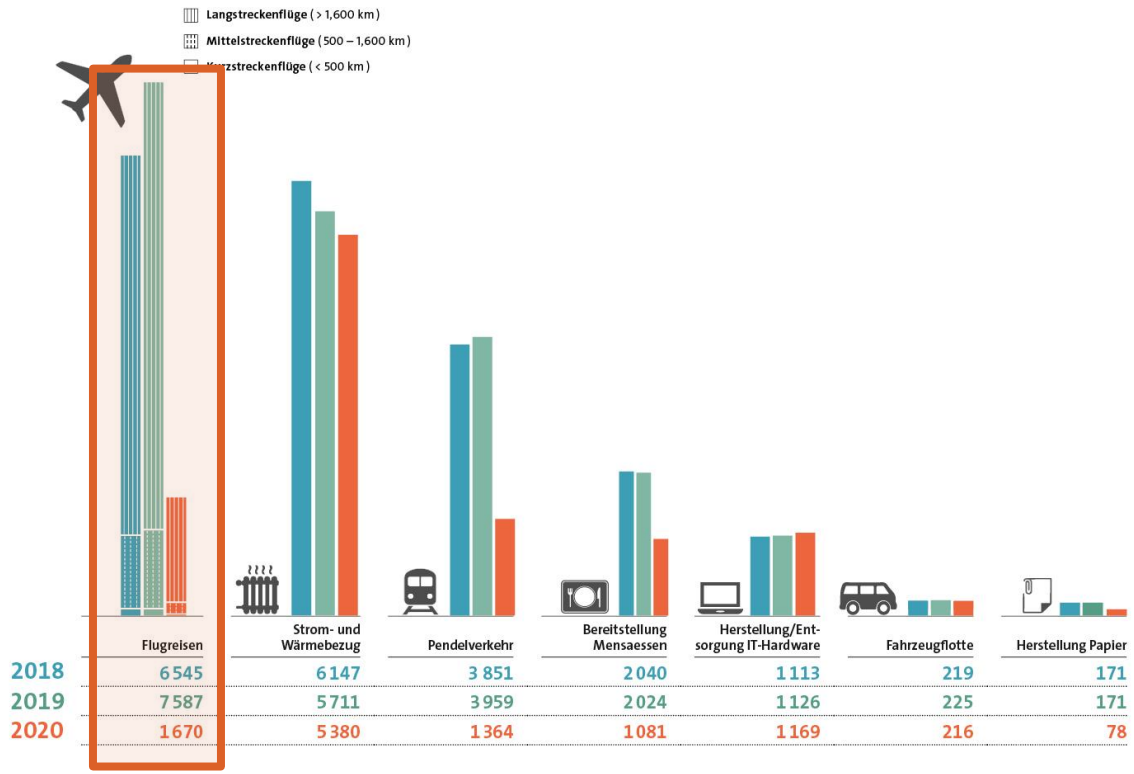
Energy partially for labs



How can we use our ultra deep freezers sustainably?

- Buy energy efficient freezers
- After ca. 10 years, replacement is net-CO2e positive. The Sustainability Team can support you.
- Consider sharing freezer space with other groups.
- Organize freezers well
  - Removing old/unused samples can avoid buying a new freezer
  - Labelling samples reduces door opening times
  - Filling empty space with plastic water bottles removes the air which needs to be cooled
- Maintain freezers well
  - Defrost when necessary
  - Remove dust from filters, etc.
  - We are currently gathering data on the effect thereof.
- **Set temperature at the temperature really required (often -70ºC is sufficient, 30% savings)**

Towards Green Research – Travel Cost



	Flugreisen	Strom- und Wärmebezug	Pendelverkehr	Bereitstellung Mensaessen	Herstellung/Entsorgung IT-Hardware	Fahrzeugflotte	Herstellung Papier
2018	6 545	6 147	3 851	2 040	1 113	219	171
2019	7 587	5 711	3 959	2 024	1 126	225	171
2020	1 670	5 380	1 364	1 081	1 169	216	78

Thank you very much for your attention!

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UZH Sustainability Team, sustainability.uzh.ch

Get in touch with me to join the GreenLab working group!

Newsletter on sustainability at UZH: sustainability.uzh.ch/en/newsletter

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