Freie Universität Berlin

Developing a Sustainable Mobility Concept

On Campus and Beyond

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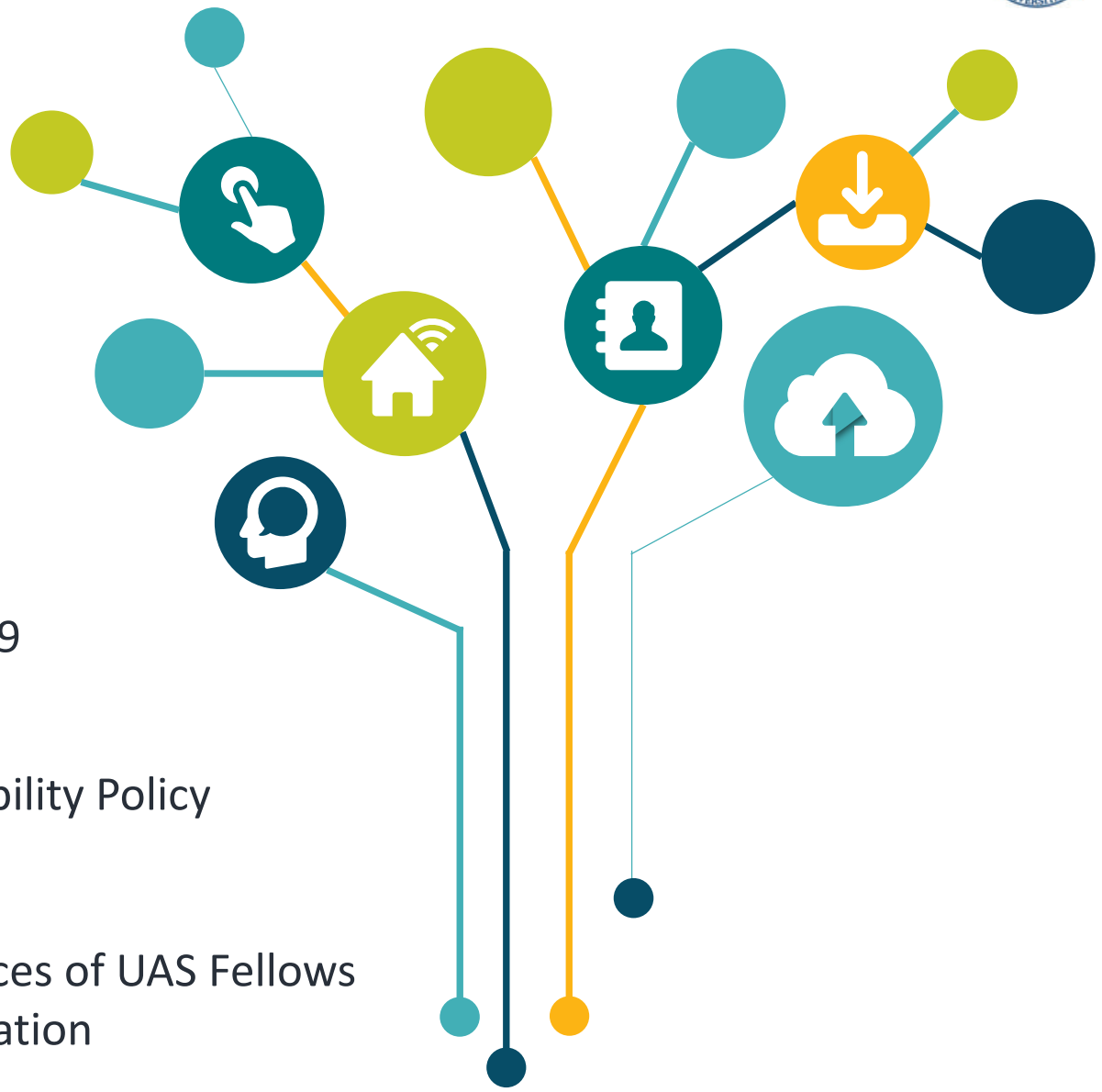
UAS Spring Campus Conference 2019

Management Workshop
Sustainable Mobility at Universities
April 2019, 02

Outline



1. Starting Point and Context

2. Mobility at FU Berlin
   - SWOT
   - Sustainable Mobility Strategy 2019
   - Facts and Figures 2017

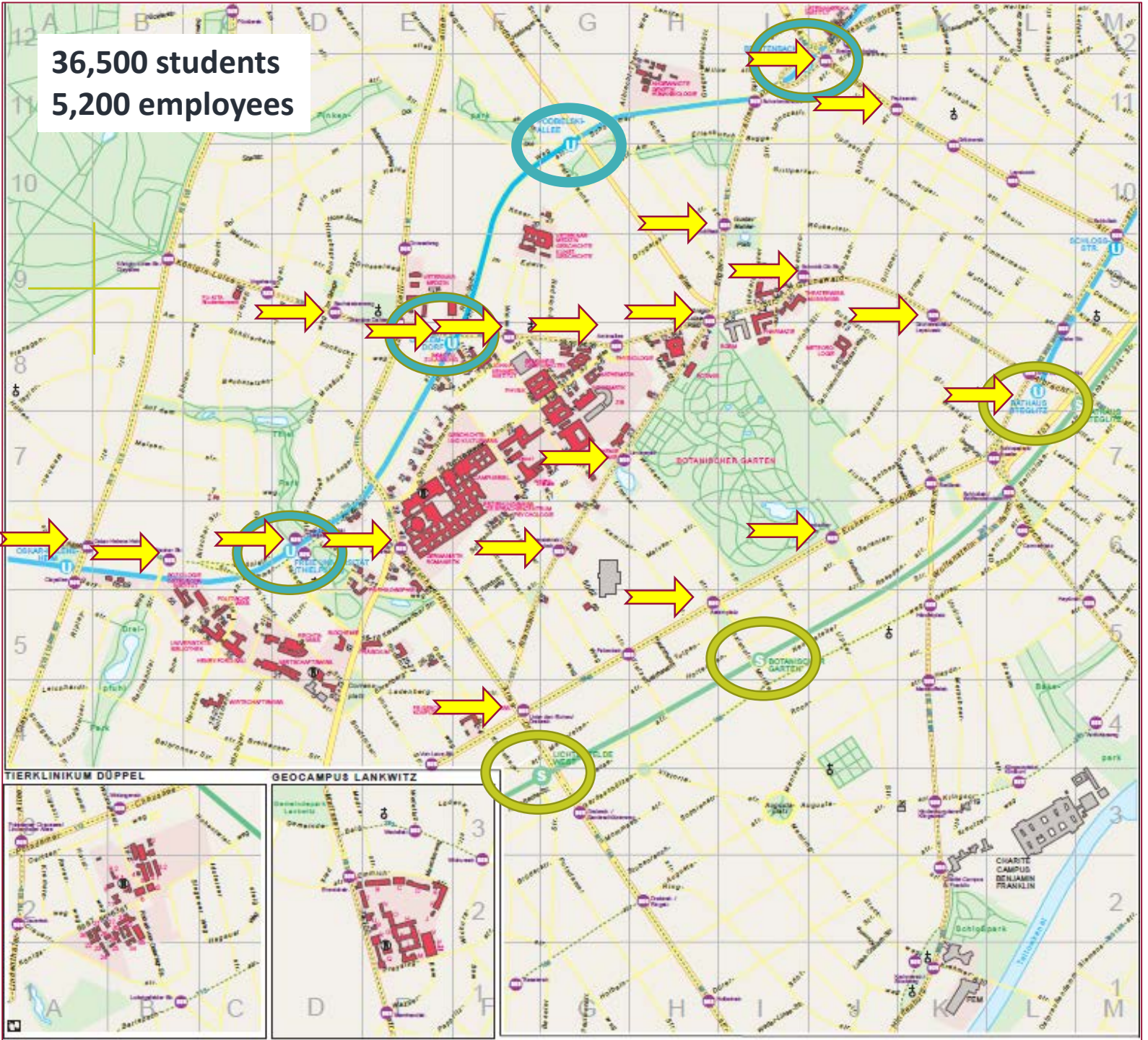
3. UAS as a Testbed for Sustainable Mobility Policy
   - Facts and Figures of UAS Mobility
   - Approach
     - Analyzing Motives and Experiences of UAS Fellows
     - Working with Virtual Communication
   - Project Plan

1 Situation at FU Berlin

- 18 year history from energy to sustainability management
- Special focus on energy efficiency and participatory approaches

- **Achievements**
  - **-28,1%** in energy consumption since 2000/01 (without increase of floor space)
  - **-81%** in CO_2 emissions associated with campus operations since 2000/01 (taking into account the CO_2-free electricity purchase since 2010)
  - **Additional -10% of CO_2 emissions** agreed in Climate Protection Agreement with the Senate of Berlin from 2016 by 2027
  - **Challenges:** two-thirds share of district heating, one-third share of natural gas in the heat supply

  - **Next step**
  - Implementation of Sustainable Mobility Concept at FU Berlin



Main-campus Dahlem of Freie Universität Berlin

= tube stations (U-Train)

= bus stations

= train stations (S-Train)

Semester-tickets for students are part of administration fees (ca 200€/sem)

Environmental Ticket (60-81 Euro/m) for employees with 5% institutional discount

Small, but heterogeneous vehicle fleet with 60 service vehicles

11 E-cargo-bikes, mainly used by estates operations

Good accessibility by bikes, student bicycle wo
7 virtual conference rooms

2 SWOT Analysis – Sustainable Mobility at FU Berlin

Strengths	Weaknesses
Well structured public transport system with good access for students and employees	No reliable information about modal split No sustainable business travel policy
Opportunities	**Threats**
Establishing a living lab project implementing a sustainable mobility strategy	Travel mainly funded by third party funds - no strong financial pressure for changes

2 Sustainable Mobility Strategy – Proposed Measures

Guiding Principle: University as a Living Lab of Mobility Transition

- **Analysing mobility structures and innovation potential**
- **Working with a new mobility provider**
  => Key idea: Integrating all mobility offers in one app making greenhouse gas emissions transparent
- **Implementing a mobility program in close cooperation with internal and external stakeholders**
  - promoting a bicycle- and pedestrian-friendly transportation system and campus-infrastructure
  - reorganizing the vehicle fleet, fostering e-mobility, pooling and car-sharing concepts
- **University Alliance as testbed to formulate, test and evaluate a sustainable business trip policy**

3 Facts and Figures

FU Berlin Business Trips 2017

Overall mobility: 4,935 business trips (only staff, preliminary assessment)
54% (2,666) international trips; 46% (2,269) domestic trips in Germany

Overall cost: 2,347 M€
82% (1,932 M€) third party funds; 18% (0,415 M€) budget funds

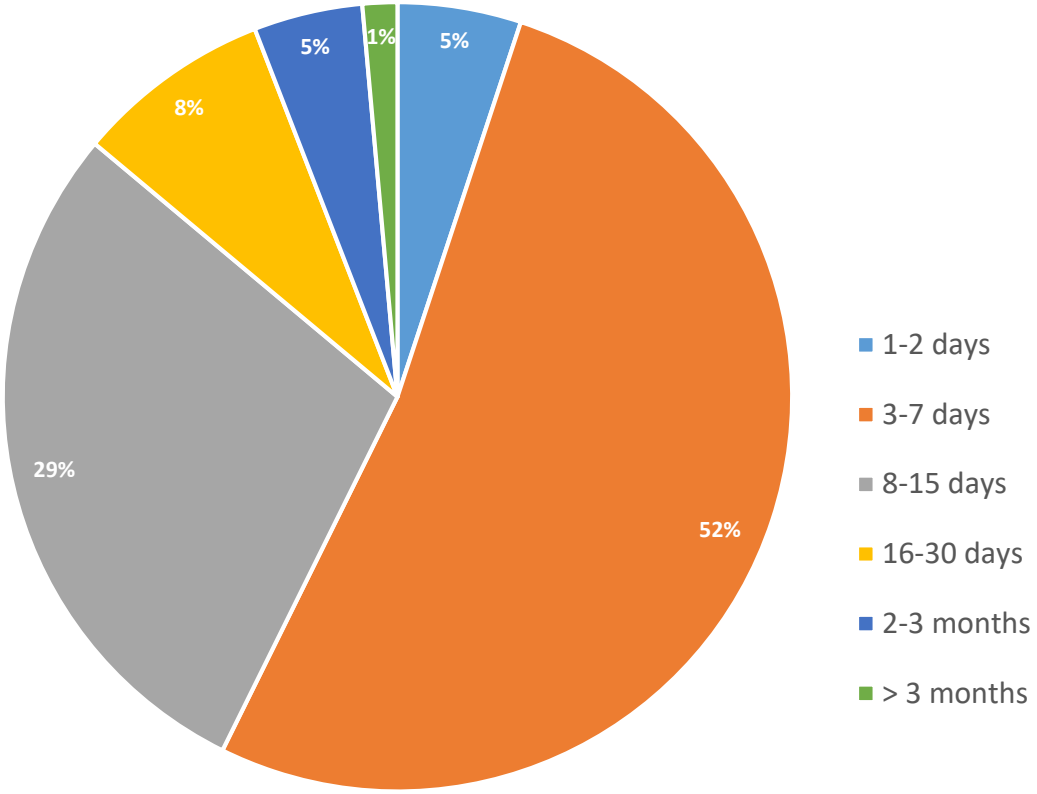
Overall CO_2 emissions: 5,843 t CO_2

80.5 % (4,703 t CO_2) intercontinental flights
17.3 % (1,009 t CO_2) flights in Europe
2.2 % (131 t CO_2) domestic flights (estimated)

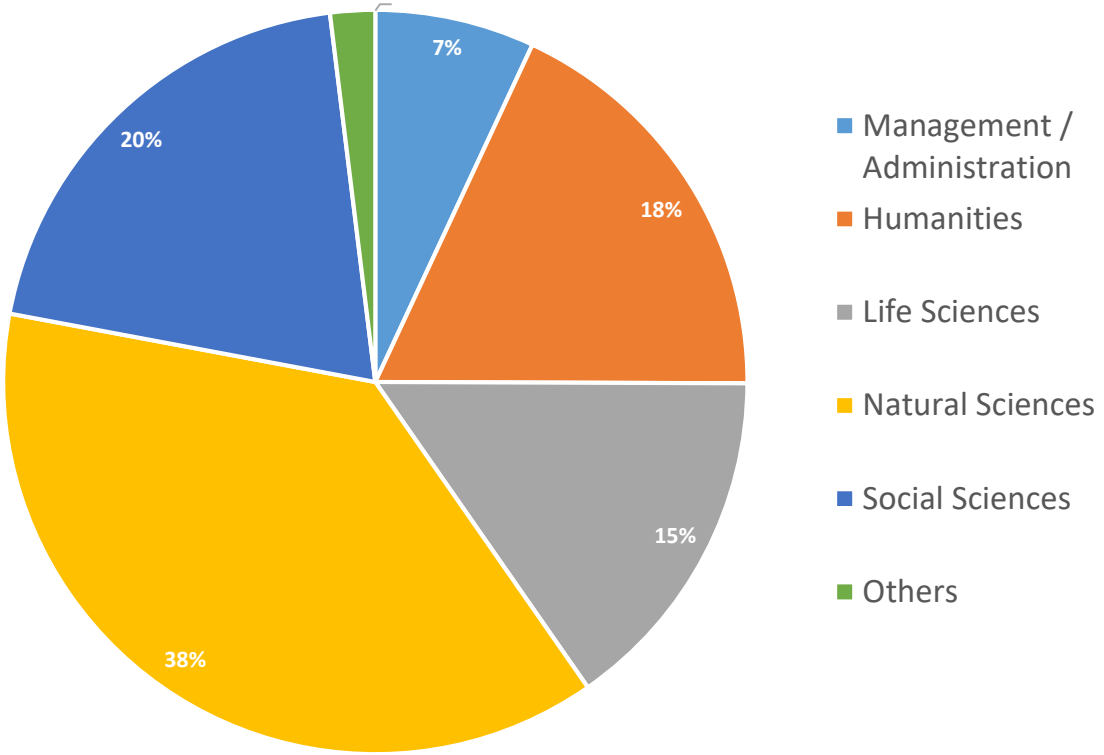
Business trips account for 15% of overall CO_2 emissions in campus operation including electricity or 37% excluding electricity

Non-Domestic Business Trips 2017

Travellers by length of stay

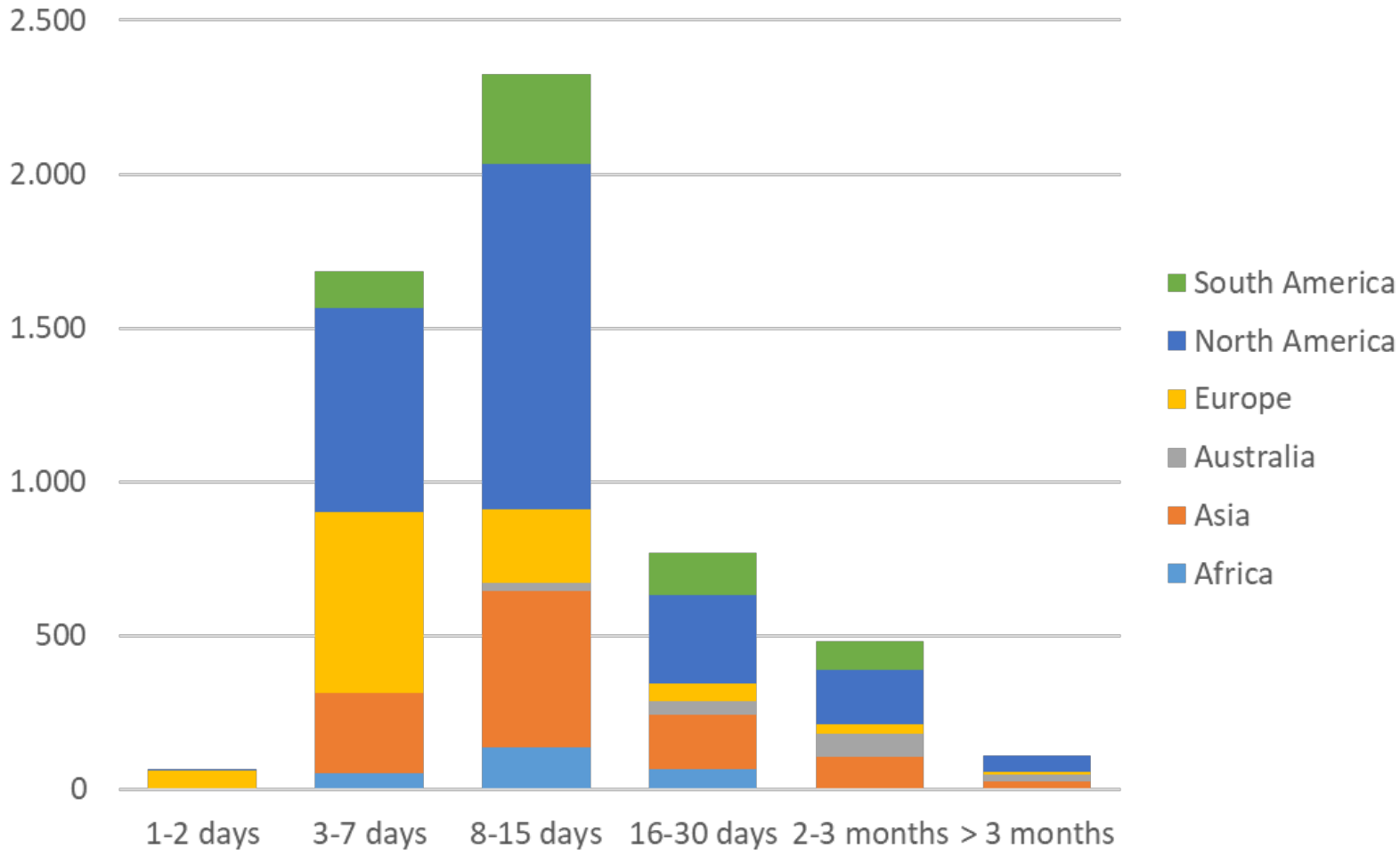


Travellers by faculty



Non-Domestic Business Trips 2017

CO_2 emissions in tons by length of stay and destination (5,843 tons CO_2)



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3 Facts and Figures

FU Berlin Business Trips 2017

Main destinations of non-domestic flights

Europe 1,667 (Great Britain: 226, France: 185, Italy: 140, Spain: 130, Switzerland: 120, Russia: 92)
USA: 392
Latin America: 109 (Brasil: 43, Peru: 19)
MENA: 94 (Israel: 42)
China: 74
Canada: 53
Japan: 31

Mobility of University Alliance for Sustainability accounted for 234 tons CO_2 in 2017

(including all travelers from and to FUB).

UAS Outgoings of FUB: 107 tons CO_2 (46%)

3 University Alliance for Sustainability as a Living Lab

Project period: April 2015 – December 2020

Funding: German Academic Exchange Service

- **Freie Universität Berlin, Germany**
- **Hebrew University of Jerusalem, Israel**
- **Saint Petersburg State University, Russia**
- **University of British Columbia, Canada**
- **Peking University, China**

Guiding Principle: Whole Institution Approach implies the placement of sustainability issues in all structural and thematic entities of the universities, going beyond the usual segmentation of different parts of a higher education institution. **UAS fosters sustainability in research, teaching and campus management.**

3 UAS Mobility Program: Goals and Motives

Goals/Expectations

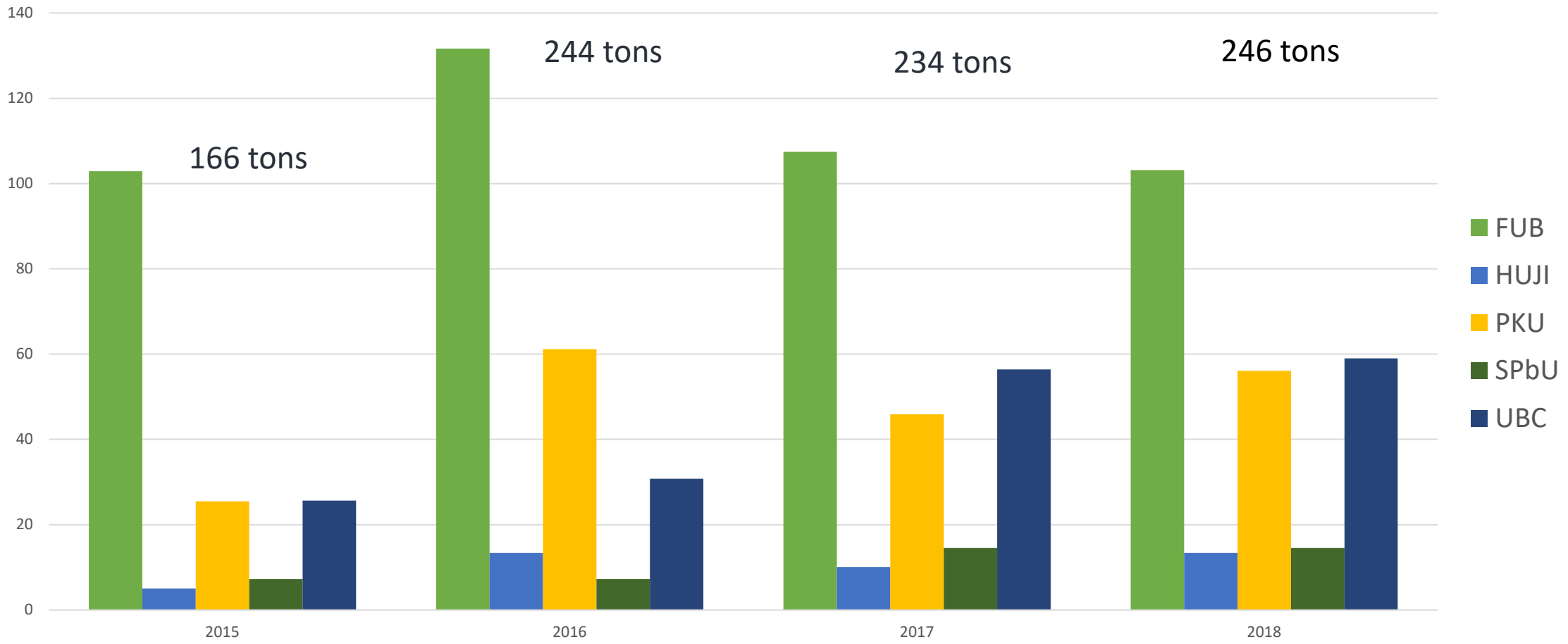
- Promoting joint research and teaching activities
- Exchanging ideas and experiences in campus management
- Fostering international student / PhD exchange
- Strengthening the intercultural competence of mobility participants

Motives for mobility

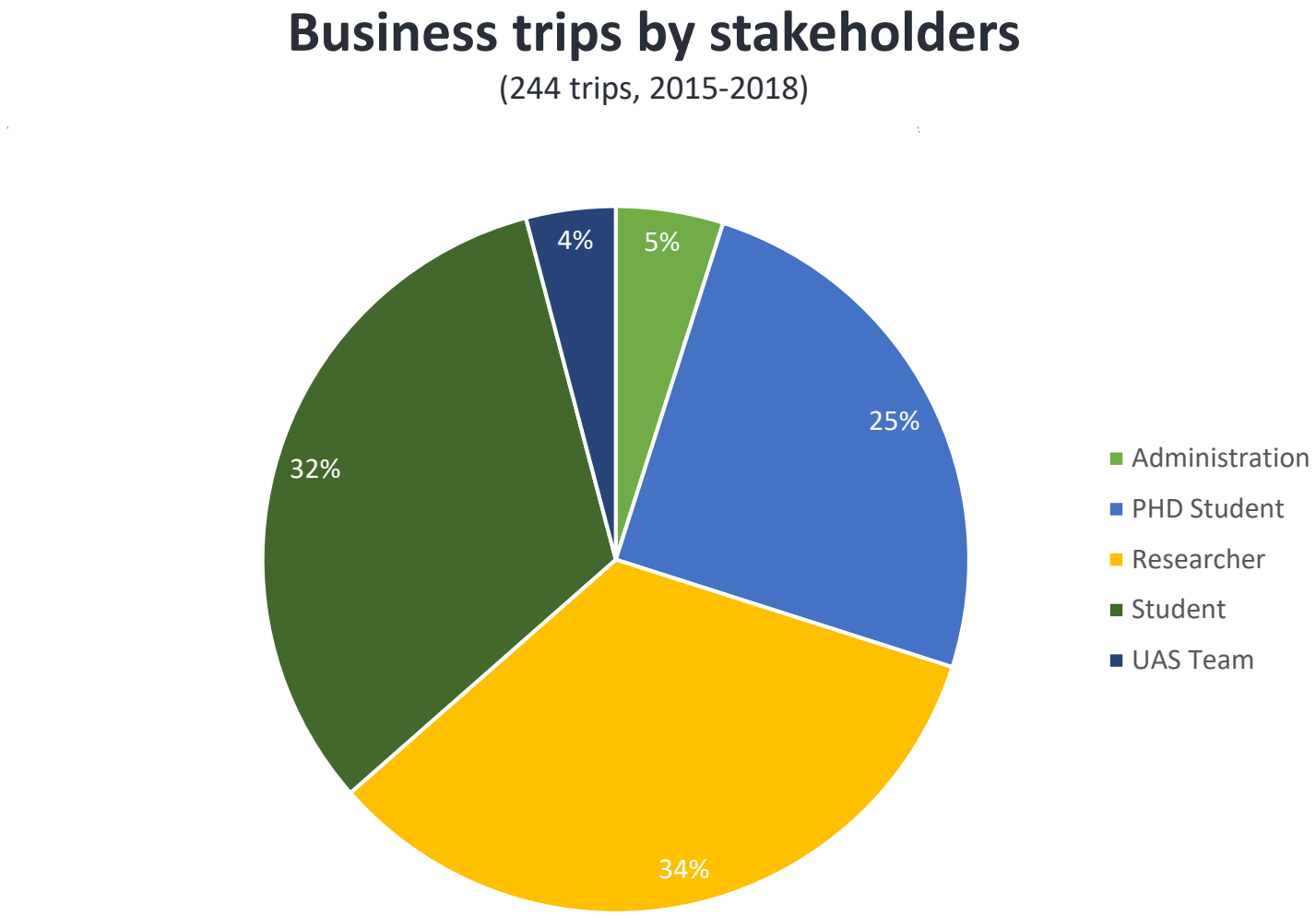
- Researchers: extending network, joint projects, reputation
- Teaching: peer-to-peer trainings, joint projects
- Students/PhD: study abroad experiences, empowering intercultural competencies, new research environment
- Staff: exchange of experiences, training, empowering intercultural competencies, strategic talks

3 Facts and Figures UAS Mobility

CO_2-emissions by year and universities (2015-2018: 891 tons)

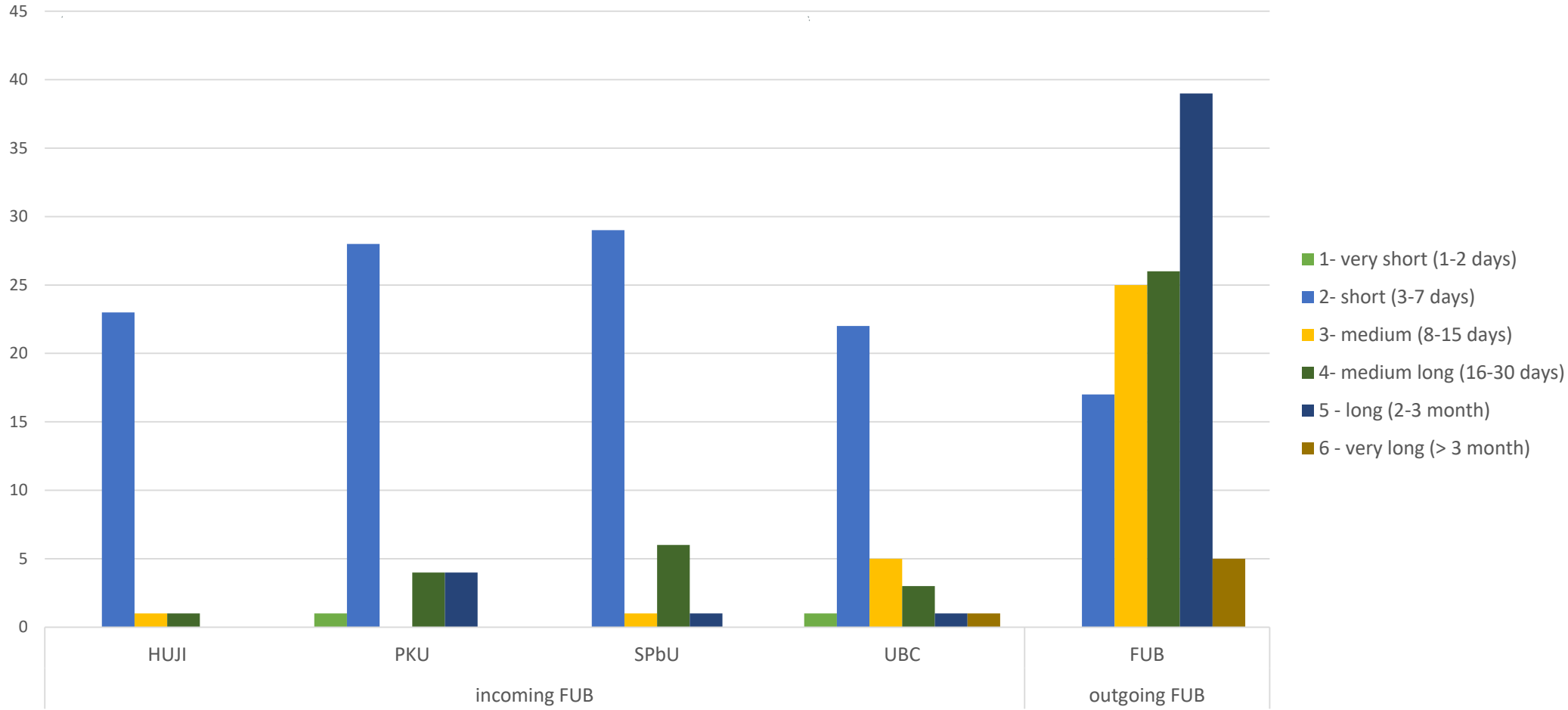


3 Facts and Figures UAS Mobility



3 Facts and Figures UAS Mobility

Business trips by length of stay



3 UAS Mobility as Testbed

Targets

Analysing motives and expectations of UAS participants

Improving the transparency for environmental impacts of business trips and establishing a discourse within the university

Improving the availability and the usability of virtual communication in cooperation with IT service

Developing a sustainability policy for business trips

Striving for a ripple effect to FUB, the UAS partner universities and research funding institutions (DAAD, DFG)

Challenges

International cooperation is a profound pillar of sustainability related research

Reducing flight-related greenhouse gas emissions while simultaneously improving the quality of network cooperation

Intervening instruments need the support of leadership and the acceptance of the university community

3 UAS Mobility as Testbed

Research and Evaluation Study

Analysing motives and expectations of UAS participants for business trips in interviews including following aspects

- Attending project and board meetings
- Attending workshops and conferences
- Speaking at workshops and conferences
- Research stays
- Staff training
- Exchanging experiences
- Improving intercultural competencies
- Picking up new inspirations
- Meeting already familiar cooperation partners

Investigating expectations and experiences of UAS participants in virtual communication

Substituting Business Trips

Integrating video communication into the Spring Campus conferences - incrementally from keynotes to workshops in cooperation with video support

Providing information about greenhouse gas emissions

Fostering dialogue with potential travelers about the length of stays and substitution options (fixed in calls)

Designing video trainings for staff and lecturers in cooperation with video support

Creating and evaluating incentive models for communicating virtually instead of air travelling

- Travel quotas? Maximum business trips per year?
- Maximum business travel budgets?
- Establishing a bonus system to replace business trips by virtual communication?
- Rewards for virtual workshops?

3 UAS Mobility as Testbed

June 2019

Start of Research-Project

(Steering group, interviews, testing and evaluating virtual communication, researching bonus systems to strengthen virtual communication)

Dec 2019

Defining a UAS-Policy for Business Trips

Feb 2020

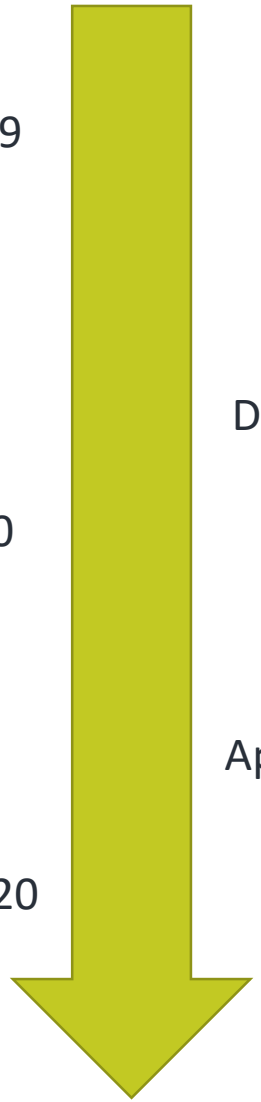
Transfer of UAS Mobility Policy to Freie Universität Berlin - and other UAS Partners?

April 2020

Spring Campus Conference 2020

May 2020

First talks with DAAD, DFG:make case for sustainability aspects in funding schemes



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Thank you for your attention
www.fu-berlin.de/uas

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1 Mobility Policy in Germany

Emissions in the areas of action contributing to the target

Source: Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (2016). Climate Action Plan 2050

Area of action	1990 (in million tonnes of CO_2-Äquivalent)	2014 (in million tonnes of CO_2-Äquivalent)	2030 (in million tonnes of CO_2-Äquivalent)	2030 (reduction in percent compared to 1990)
Total	**1248**	**902**	**543 to 562**	**56 to 55**
Energy sector	466	358	175 to 183	62 to 61
Buildings	209	119	70 to 72	67 to 66
Transport	**163**	**160**	**95 to 98**	**42 to 40**
Industry	283	181	140 to 143	51 to 49
Agriculture	88	72	58 to 61	34 to 31
Subtotal	**1209**	**890**	**538 to 557**	**56 to 54**
Other	39	12	5	87

3 Virtual Mobility

Infrastructure:

- Easy access possible via individual office computers
- Video conferencing rooms for group meetings
- Technical support for virtual conferences and telcos
- Training opportunities for staff and lecturers

Challenges:

- Opportunities not widely used
- Secure channels are neglected in favor of standard apps like Skype and Zoom
- Use depending on technical affinity of user, their experiences and on quality of technical support

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3 Open Questions

- How to change the dominant global academic reputation model?
- Is there a need to define mobility waste? How to define it in a university?
- Which kind of mobility is most easily replaceable by virtual communication?
- Which models for restricting business trips by plane are most effective?
  Transparency and dialogue? Travel quotas? Determination of maximum business trips per year? Setting a maximum business travel budget? Establishing a bonus system to avoid business trips? Rewards for virtual workshops?
- The role of psychological and social motives for business trips. Are they underestimated?
- What do we need to overcome the individual reservations regarding virtual communication as a substitute for business trips?