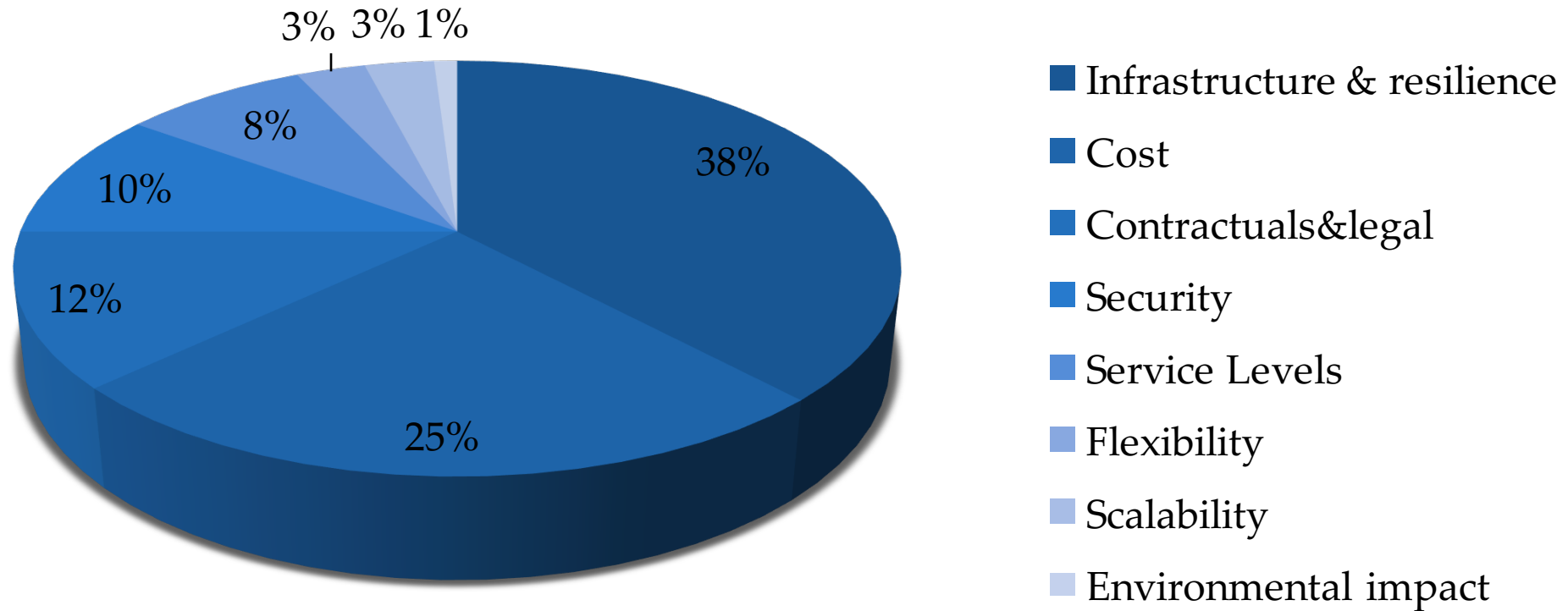Examples:
outsourcing,
data protection,
cost effectiveness

Deciding factors outsourcing

- Security – data protection

- Environmental impact – energy efficiency

- Resilience – robust datacenter and IT infrastructure

- Scalability – what if IT load decreases?

- Flexible approach – one stop shop for complementary services vs. neutrality towards third party suppliers

- Service levels

- Contractuals & legal implications

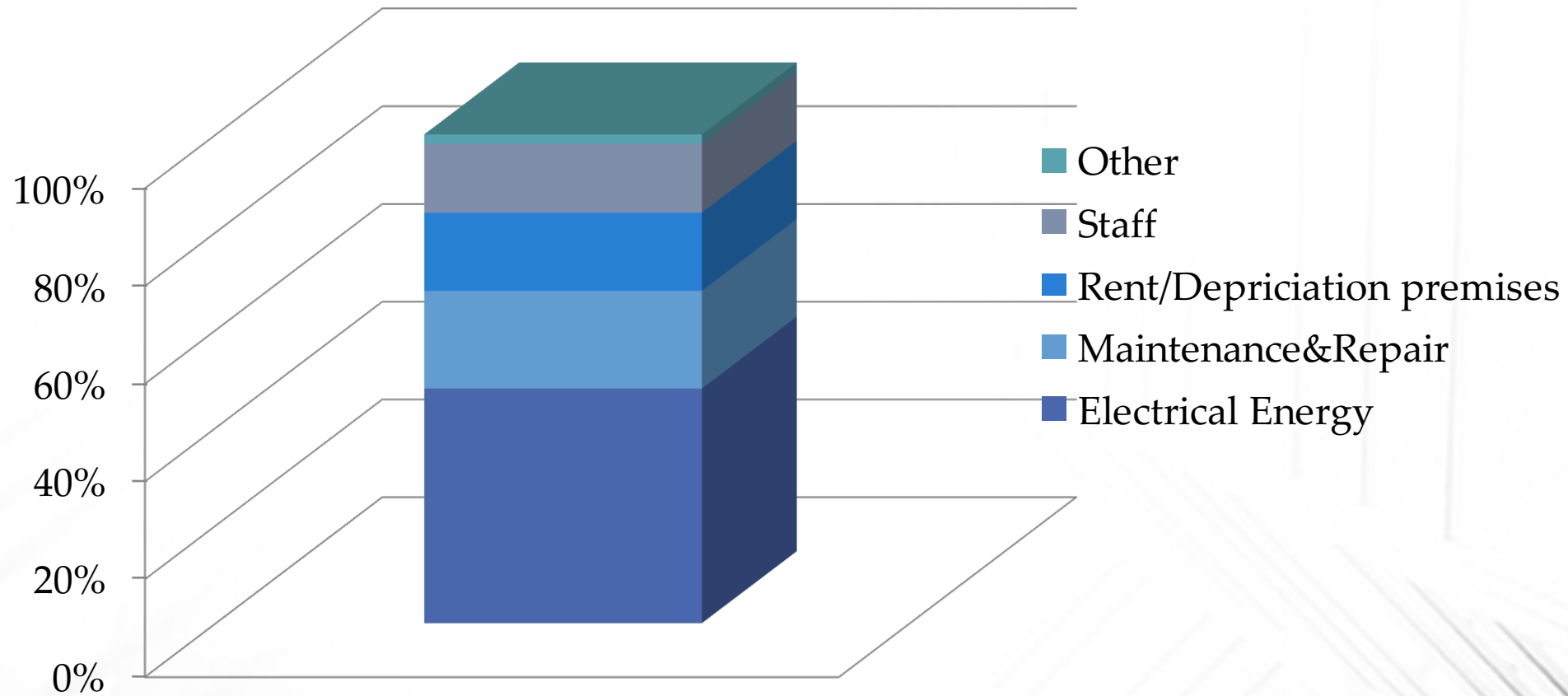- Cost effectiveness

Translation into RFP´s question volume

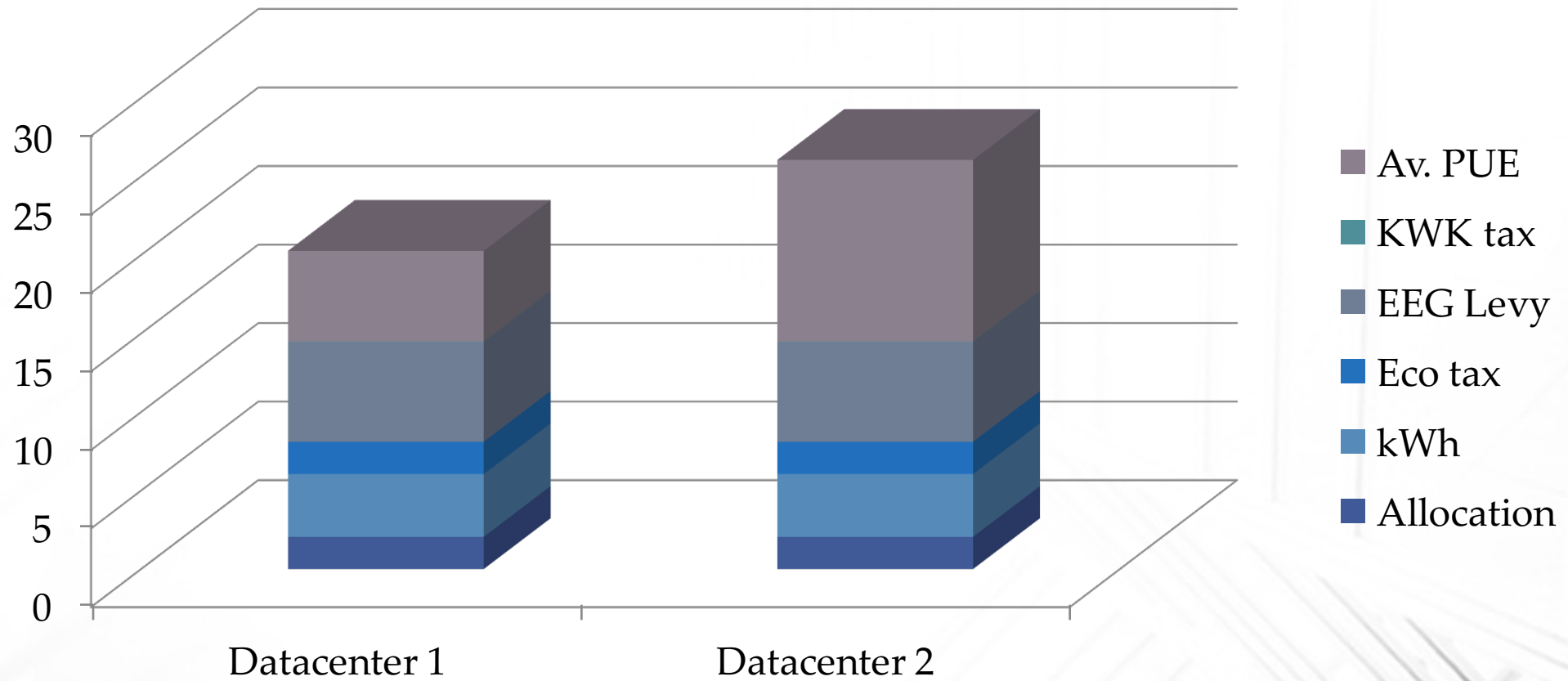**Source: last 20 RFP´s > 100 questions**

Deciding factors: dependencies

- Security – data protection

- Environmental impact – **energy efficiency**

- Resilience – robust datacenter infrastructure

- Scalability – what if IT load decreases?

- Flexible approach – one stop shop for complementary services vs. neutrality towards third party suppliers

- Service levels

- Contractuals & legal implications

- **Cost**

Opex base of a datacenter in Germany

Legend:
- Other
- Staff
- Rent/Depriciation premises
- Maintenance&Repair
- Electrical Energy

Cost elements of purchasing power in Germany

Why is the difference in PUE then?

Datacenter 1 (built 2013)

- Free Coolers and chillers separated

- 100% free cooling 75 % of an av. year

- Electrical losses < 10%

- Optimized for ASHRAE Class A1

- Company internal best practice benefit program for saving energy

- Active EU Code of Conduct member

- All that little stuff that matters

Datacenter 2 (built 2013)

- Combined Chiller/Free Cooler units

- 100% free cooling 40% of an av. year

- Electrical losses 15%

- Traditional temperature and humidity setpoints.

- ISO 14001 shall do…

Little stuff that matters

- Avoid thermal short circuits (optimize airflow to separate cold isle)

- Lead and support users/visitors during installs

- Regulation of CRAH output via valves and fan speed

- Cab height is critical

- Structured cabling in line with cooling system

- Big fans for hardware extract heat better than the ones of „pizza boxes"

- Compensation of power supplies characteristic

- Lighting….

Datacenter dealt with – IT operator?

- Proper hardware mounting, proper cabling (also power cables)

- Use the enery saver mode where possible

- Vitualization saves hardware saves power consumption

- State-of-the art hardware (ASHRAE Class A2)

- Stand-alone hardware (Tapechangers): move to a separate area

- Align the whole IT landscape with the Datacenter specs

Future to come?

- Full liquid cooling: no air in the equipment cooling process involved

- 100% air cooling (no aircon)

- Ice storage aircon

- Onsite power generation to avoid transformer losses

- DC power concepts to reduce electrical losses

- Heat re-use

Data Protection

- Physical protection against violence / theft

- Management of information security: ISO 27001

- Business Continuity: ISO 22301(„what if" = Backup and DR)

- Data Protection Agreement - is there a law?

- Processing data on behalf of the owner – implications.

- Obligation to provide information to authorities:

Data Protection Agreement: Content

Technical&organisational measures

- Physical access control
- Logical & data access control
- Data transfer control
- Data entry control
- Control of instructions
- Availability control
- Separation control

If data is processed by 3rd party

- Obligations of provider
- Obligations of controller
- Enquiries of authorities
- Audit obligations
- Subcontractors
- Duties to inform
- Data protection officers

Data Protection works both ways

Personal data is also the video data that documents your data room being (or attempted to) accessed!

Questions

Thank you!