

TIMEPAC Academy

Session 7 Calculating Smart Readiness Indicator

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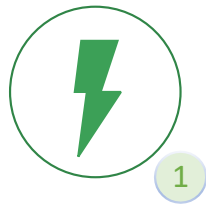


Indicators – why do we need them?

- The role of any indicator is **to make complex systems understandable** or easily comprehensible
- An effective indicator or a **set of indicators helps in** determining the current position against established objectives
- Indicators should be **SMART** - **S**pecific, **M**easurable, **A**chievable, **R**elevant, **T**ime-bound

Smart Readiness Indicator and its purpose

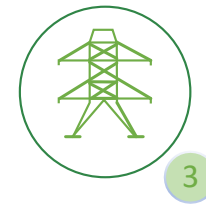
 One overall score express how close the building is to the maximum smart readiness




Optimise energy efficiency and overall in-use performance




Adapt their operation to the needs of the occupant(s)



Adapt to signals from the grid (energy flexibility)



Energy efficiency



Maintenance and fault prediction



Comfort




Convenience



Health, well-being and accessibility

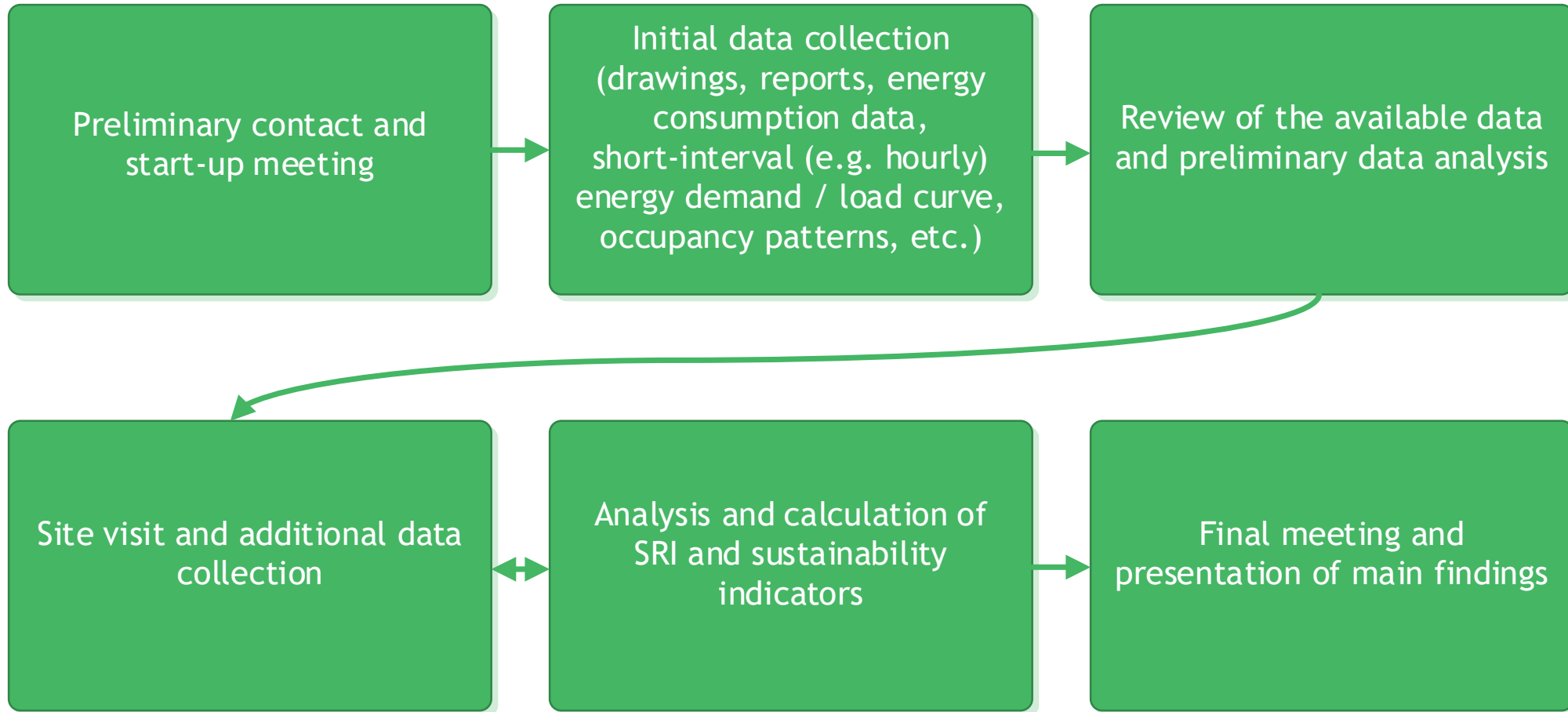


Information to occupants



Energy flexibility and storage

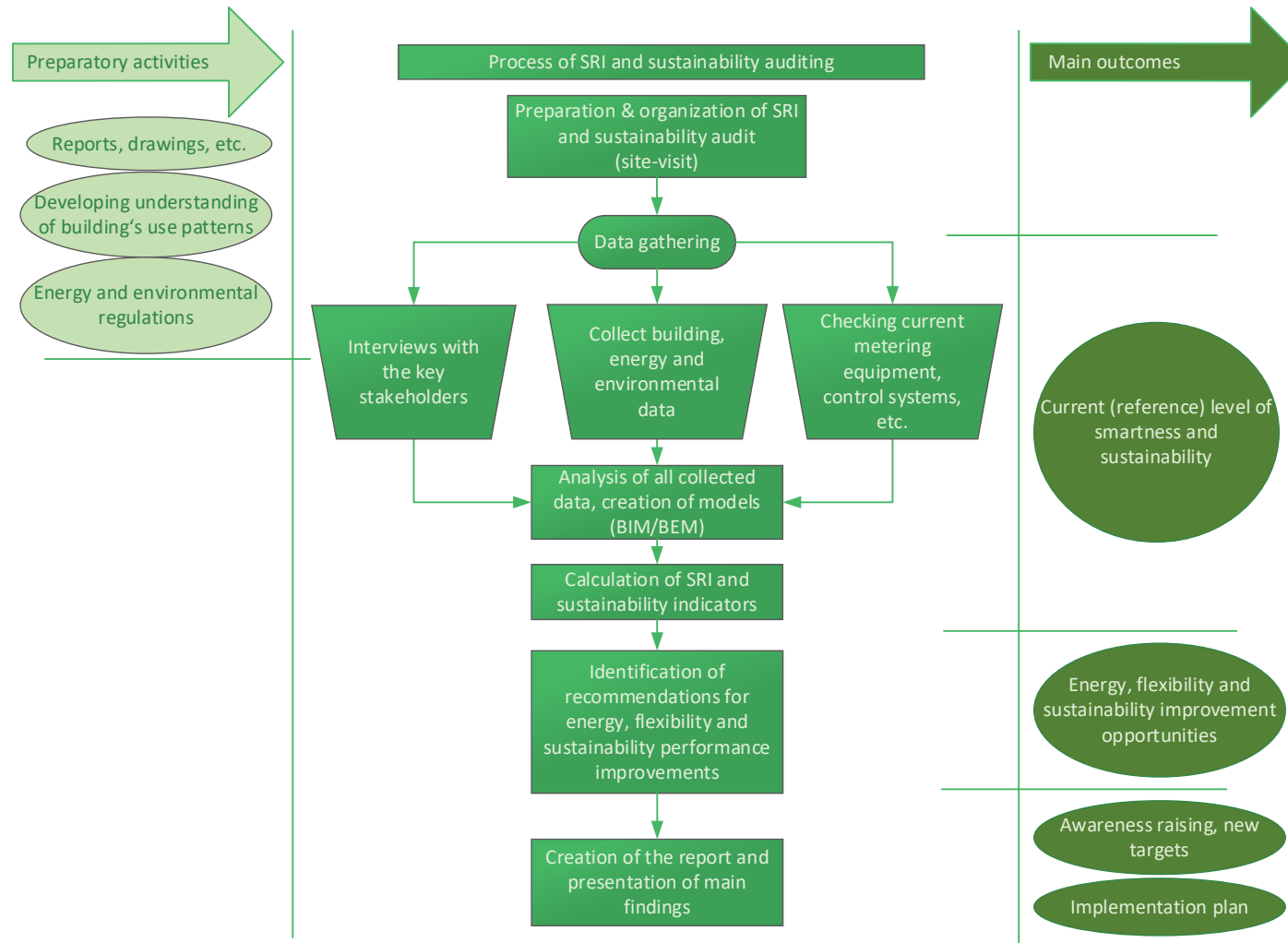
Data collection process and limitations



Combining methods and Guidelines for effective SRI auditing (1/2)

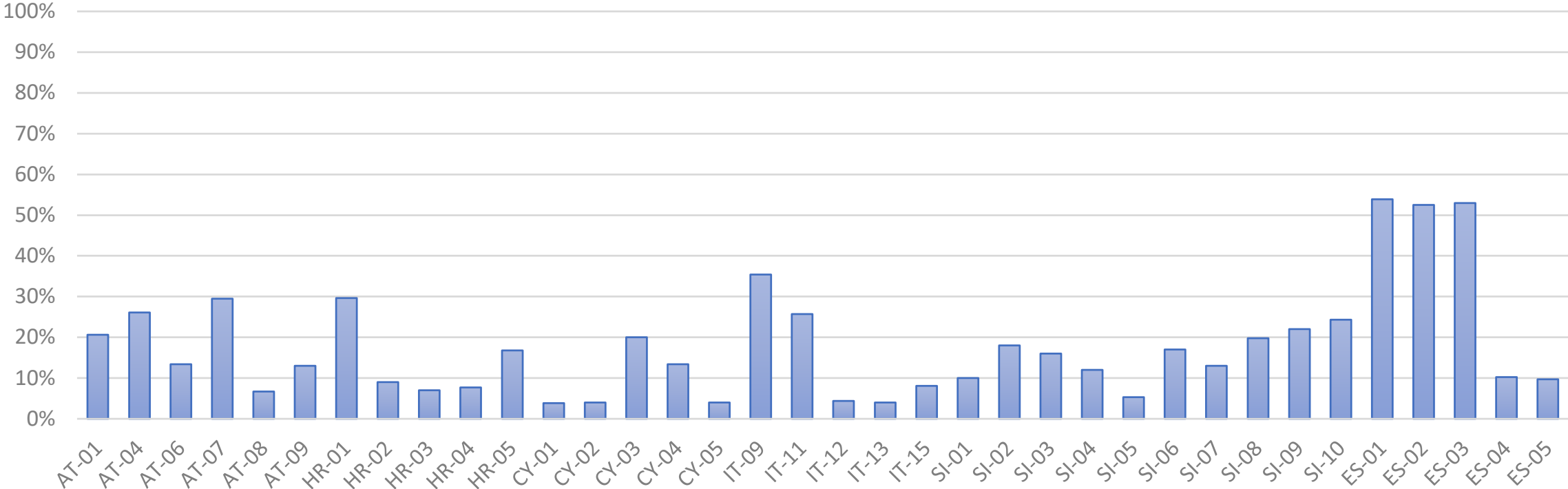
- Energy audit is a **dynamic category** (new EED)
- Relevant standards: Auditor must estimate **future energy use and consumption - we need models**
- Identify, prioritize and record **opportunities for improving energy performance**
- **Combining activities** is the key of future success!

Combining methods and Guidelines for effective SRI auditing (2/2)



Understanding SRI

SRI score



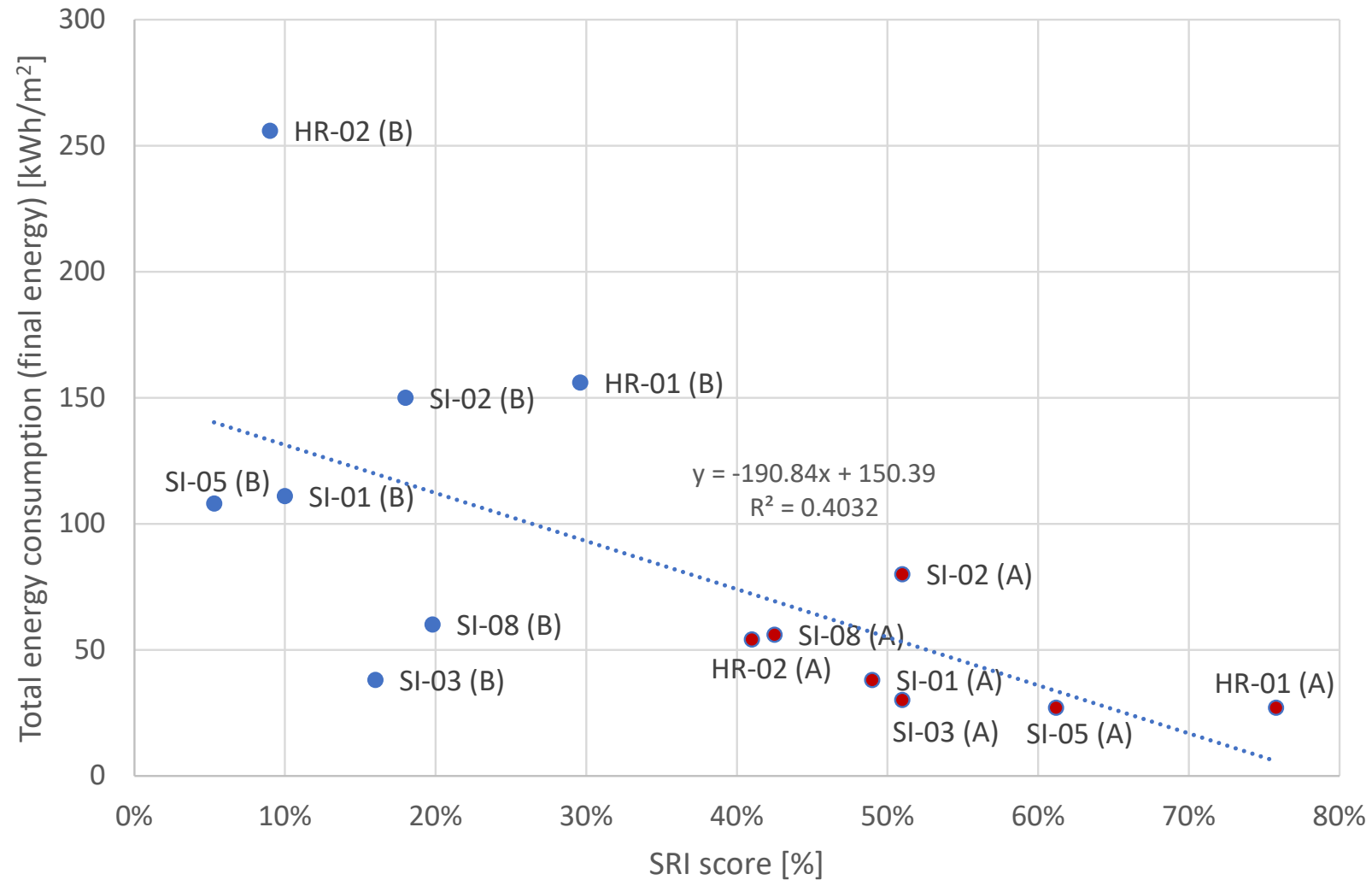
Extraction of energy and flexibility measures (1/3)

- SRI auditors will need to provide **comments** that are **necessary for the extraction** of energy efficiency and flexibility improvement measures
- **Comments and notes** from assessors are crucial for **properly understanding the SRI rating**
- SRI can facilitate the **alignment of common interests between ESCOs and building owners** in exploiting urban areas for energy production from RES and supporting e-mobility

Extraction of energy and flexibility measures (2/3)

- Installation of the **modern energy-management system** with **demand/response functionalities and feedback to the occupants**
- Renovation of **lighting system and advanced control systems**
- Installation of **PV system**
- Reconstruction of the HVAC system - **implementation of new heat pump for heating and cooling**, new VSD pumps and advanced control of heating and cooling systems
- Installation of **new EV-charging station** with advanced control systems and all system reports
- Installation of the **battery system for the peak-load management**, emergency power supply and optimizing of the PV production

Extraction of energy and flexibility measures (3/3)



Code of Conduct (1/2)

- **Site visit is essential** for the effective and transparent SRI rating
- Avoid conflicts of interest and **never try to sell products or services**
- Respect the **privacy and confidentiality** of the client's information
- The SRI auditor **supports the application of innovative tools** such as Building Energy Models (**BEMs**) and Building Information Modelling (**BIM**)
- The SRI auditor **supports long-term use of energy-management systems**
- A key element of efficient demand-side management (DSM) is the proper **identification of controllable and uncontrollable loads**

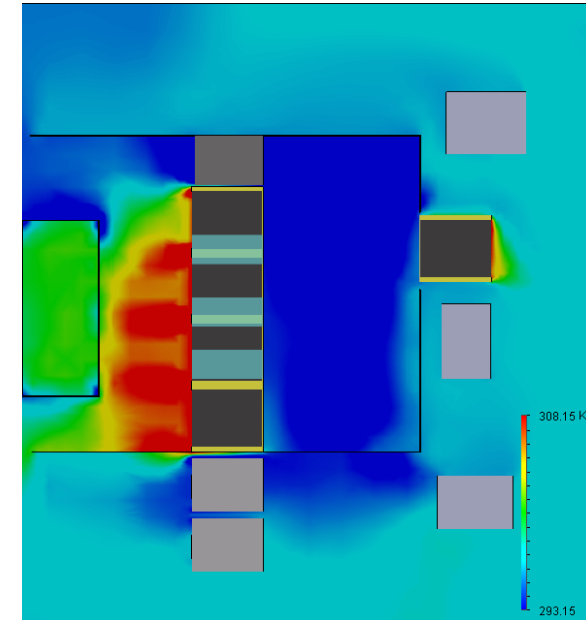
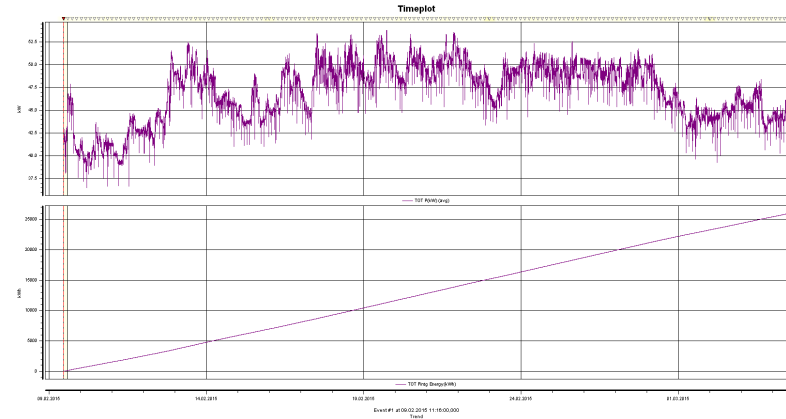
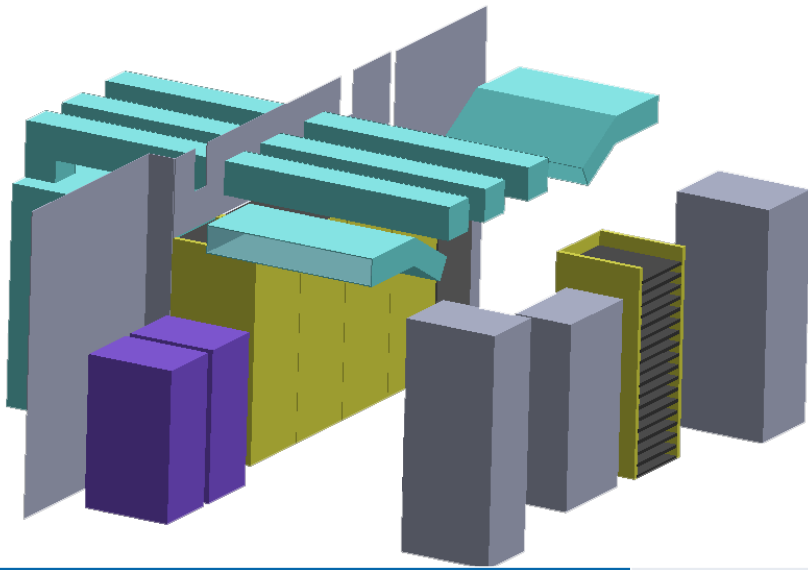
Code of Conduct (2/2)

- Recommendations should be **tailored to the specific** building and its unique characteristics and needs
- Always be **transparent about the methods and assumptions** used during the SRI and sustainability rating
- The SRI rating should be unbiased and objective, **focused on providing accurate and reliable information**
- Always try to **understand operational practices** about how the building is used and operated, including occupancy, operating hours, and behavior of occupants
- The SRI and sustainability auditor must ensure that **all collected data are accurate, reliable and relevant**
- Before submitting an official report **always discuss your findings with the client**

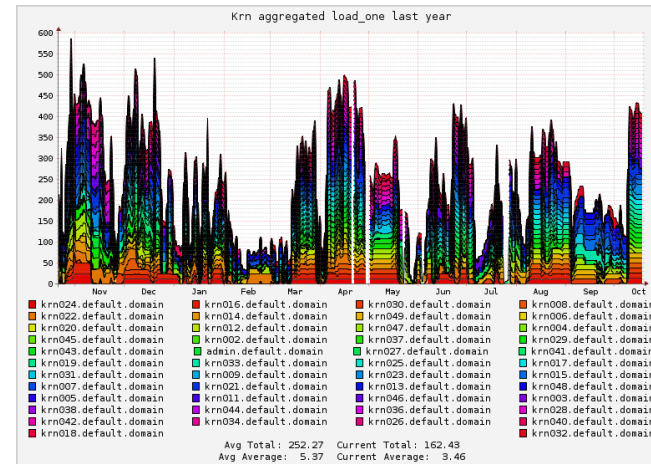
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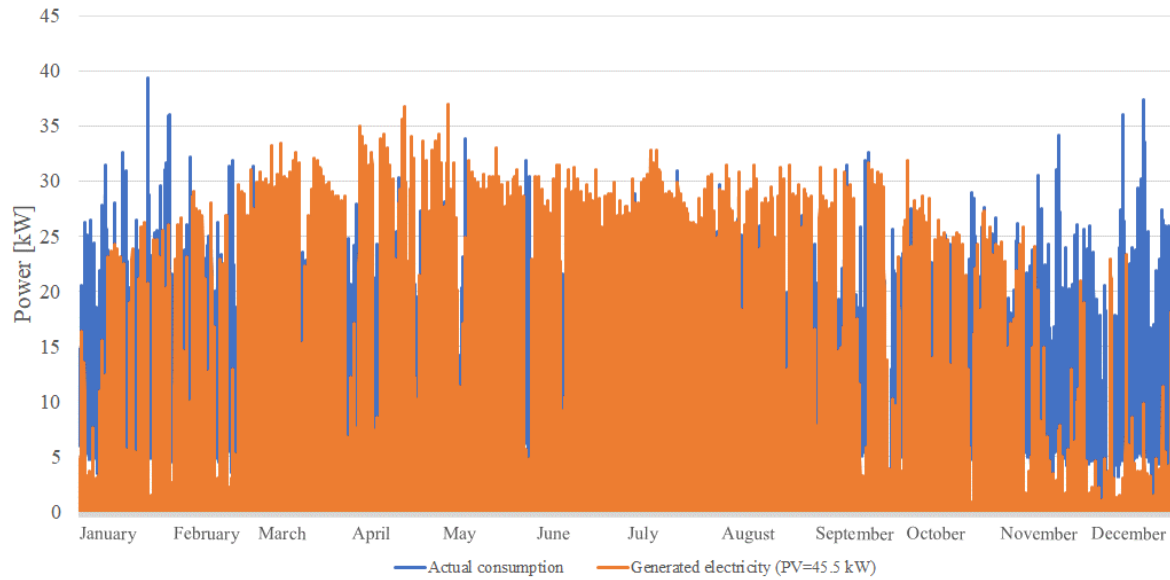
Case study – Data room, complex performance evaluation and modelling



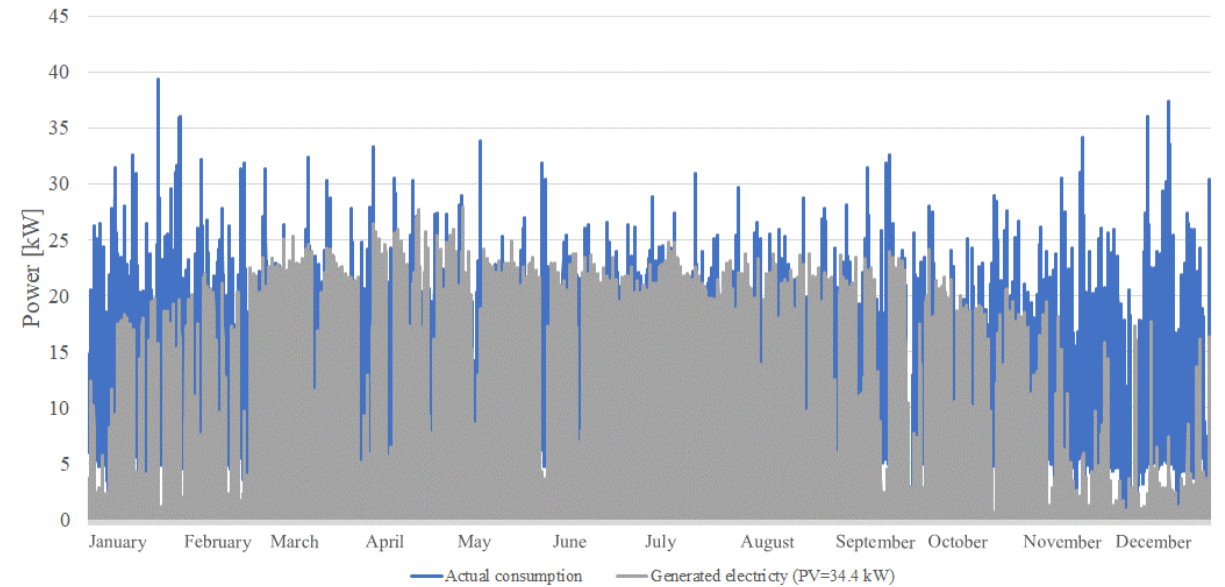
Potential reduction in electricity consumption (MWh/year)	82,3
Indirect (electricity induced) CO ₂ emission reduction (t CO ₂ / year)	42,2
Cost reduction (€ / year)	6.200
Payback period (static) (year)	2,2
Net present value (€) (economic lifetime 5 years and discount rate 10%)	10.000
Internal Rate of Return (%)	36



Case study – Rooftop PV plant



SSR = 45% and SCR = 72%



SSR = 34% and SCR = 84%

Conclusion

- The calculation of the SRI can be the **basis for the identification of performance-improvement opportunities**
- Our experiences clearly confirmed that in order to make SRI rating useful, **specific and tailored recommendations for performance improvements** must be provided to the final user
- Special attention must be given to the proper **explanation of the SRI score**
- Implementation approach - **team work, honest communication with the key stakeholders** (owner, energy manager, facility manager, maintenance personnel, etc.) and **a focus on effective measures and follow-up indicators**

**If you would like more information,
please visit www.timepac.eu or contact us at
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Thanks for your attention!