

EU Smart Cities and Communities information system

Branislav Iglár

AIT Austrian Institute of Technology

Center of Energy



What is SCIS?



Repository of best practices and lessons learnt

- EU funded projects
- Extract the minimum amount of information that is necessary in order to replicate a solution

Data collection & analysis

- Visualisation of KPIs
- General assessment of a specific development of projects

SCIS is NEITHER an audit NOR a comparison of projects

- No verification of results, only analysis
- No rankings

SCIS does NOT substitute the project's website



SCIS' outcomes



**SCC, EeB & EE projects:
Solutions & Data**



Database & Website:
Technologies | Demo sites | KPIs | Solutions | Recommendations



Policy makers

**Stakeholders
involved in impl.**

Experts



Challenges



Data is public

- Accessible for the user – open data
- Reduce double efforts

KPI calculation

- Described in the KPI guide
- Double check: by SCIS and by the projects

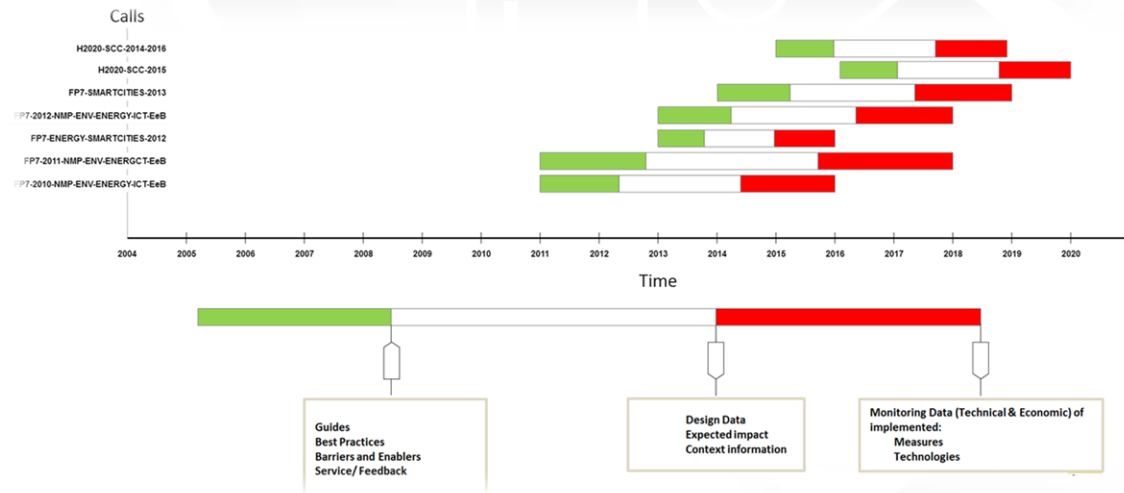
Different stages / maturity →

Data is used

- Assessment
- Consultation

Minimum requirements

- Large number of technologies
- Overview of what works



Conclusion

- Unify criteria and ensure consistency
- Clear structure
- Minimum data requirements to ensure a proper assessment of the Smart Cities projects performance
- Cross link of SCIS and other initiatives (CITYkeys), standardisation processes (ISO37120), projects etc.
- Adapt and include KPIs towards ongoing European developments and targets
 - ICT
 - Mobility



2.3.1 Greenhouse Gas Emissions

Applicability for objects of assessment

Building	X	Set of Energy Supply Units	X
Set of Buildings	X	Neighbourhood	X
Energy Supply Unit	X	City	X

<i>Definition</i>	<p>The greenhouse gas, particulate matter, NO_x and SO₂ emissions of a system correspond to the emissions that are caused by different areas of application. In different variants of this indicator the emissions caused by the production of the system components are included or excluded. SCIS only excludes these emissions.</p> <p>To enable the comparability between systems, the emissions can be related to the size of the system (e.g. gross floor area or net floor area, heated floor area) and the considered interval of time (e.g. month, year). The greenhouse gases are considered as unit of mass (tones, kg.) of CO₂ or CO₂ equivalents.</p>
<i>Input Parameters and Calculation</i>	<p><u>District Level:</u></p> $GGE = \frac{TE_c \cdot GEF_T + EE_c \cdot GEF_E}{A_b}$ <p><i>GGE</i> Greenhouse gas emissions <i>TE_c</i> Thermal energy consumption (monitored) of the demonstration site [kWh/ (month); kWh/ (year)] <i>EE_c</i> Electrical energy consumption (monitored) of the demonstration site [kWh/ (month); kWh/ (year)] <i>GEF_T</i> Greenhouse gas emission factor for thermal energy (weighted average based on thermal energy production source/fuel mix) (kg CO₂eq/kWh consumed) <i>GEF_E</i> Greenhouse gas emission factor for electrical energy (weighted average based on electricity production source/fuel mix) (kg CO₂eq/kWh consumed) <i>A_b</i> Floor area of the building [m²]</p>
<i>Unit</i>	kg CO ₂ eq/ (m ² *month); kg CO ₂ eq/ (m ² *year)
<i>References</i>	<ul style="list-style-type: none"> • DIN EN 15603:2008-07. (2008) Energy performance of buildings – Overall energy use and definition of energy rating • CITYFIED project.

SCIS & UN SDG-U4SSC



- SCIS is on a different level – complementary assessment to strategies supporting stakeholders involved in smart city project development and implementation
- Contribution to a big picture of different series of KPIs
 - Not competing
 - No inconsistency
 - Different but aligned levels support SCC strategies, projects and their replication
- SCIS provides added value
 - Specific progress of projects
 - KPIs for project assessment and management
 - Communicating performance and impact of certain implementation to stakeholders for replication



Recommendations

- Combination of quantitative and qualitative information to provide context turned out to be the best way to support replication
- Municipal administrations see low contribution of commercial indices to their work
- KPIs rather for assessment than for comparing
- The results show that the application of KPIs to assess design and monitoring data can point out a gap that represents a certain problem in the implementation
- Clear and common framework necessary - detection of inconsistencies by applying a common KPI/assessment framework, esp. for financial assessment
- Cross-referencing is key – European framework can give an important contribution but cannot solely define on international level (e.g. ISO developments)