Strasbourg's Project Sustainability Evaluation Tool

This good practice is relevant to European Green Captial Award Indicators:
3: Sustainable Urban Mobility, 4: Sustainable Land Use, 5: Nature and Biodiversity, 10: Green Growth and Eco-innovation, 12: Governance

Introduction and Objective

According to the European Innovation Partnership on Smart Cities and Communities (EIP-SCC), an initiative of the European Commission, **78% of European citizens live in cities**, and 85% of the EU's GDP is generated in cities. The EIP acknowledges that **smart cities are integral to delivering sustainable solutions to the key challenges facing European economies and citizens**. Upgrading key technologies, infrastructures and services with smart solutions across the **ICT**, **buildings**, **transport** and **energy** sectors provides an intelligent approach to growing the competitiveness and accelerating the sustainability of Europe's cities while improving the quality of life for their citizens. Strasbourg's Project Sustainability Evaluation Tool (PSET) is a front-running innovation in the transition towards smarter cities.

PSET is an **interactive tool** developed by the City and Eurometropolis of Strasbourg to **assess the sustainability of its projects over their project lifetime**. The tool is an integral measure of the city's 'ÉcoCité – City of Tomorrow' policy and was developed in collaboration with an independent specialist advisor in the field of **low carbon strategy** and **climate change adaptation**. The tool offers a new approach to analysing the needs of the city and an innovative mechanism to review the practices of the city within the framework of sustainability.

The overall objective of the tool is to assess the actual sustainability of projects and implement increased sustainability measures across them. It achieves this by cross-tabulating sustainability indicators and criteria throughout the project life-cycle across six major policies: **mobility, nature and biodiversity, environment, urban planning, governance** and **cross-functionality**. The latter policy allows the city to gain a transverse view of the interactions between each policy.

Financial Overview

The project required circa **€77,500** investment which included advisory services from an external specialist and the Eurometropolis of Strasbourg. **ÉcoCité co-funded** the project providing circa €27,000 of the total cost.

Strasbourg at a Glance

Statistics Sourced from City of Strasbourg's EGCA 2019 Application

- **Gross Domestic Product**: €40,000/capita
- **Population**: 275,718
- **Energy Use**: 22,356 kWh/capita/year
- **CO_2 Emissions**: 3.75 tCO_2/capita/year
- **Sustainable Committments**:
  Climate Plan 2009 (baseline 1990):
  By 2020 Strasbourg aims to reduce:
  - GHGs by 30%
  - Energy Consumption by 30%

  COP21-2015 (baseline 1990):
  - Reduce GHGs by 75% by 2050

Want to know more?

For further information relating to **the Project Sustainability Evaluation Tool**, please see:

- Strasbourg Eco-2030 Plan
- Planning and Sustainable Development Plan (PADD)
- Local Intercommunal Urban Planning Plan (PLUi)
- Strasbourg Energy Transition Guide
- Eco-Cities (ÉcoCités)
- EIP EU Smart Cities
- Factor 4 Initiative

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ec.europa.eu/europeangreencapital/

Methodology

Strasbourg's Project Sustainability Evaluation Tool has been developed to **assess the actual sustainability** of projects and **implement increased sustainability measures** across them. It is a multifaceted tool with multiple applications for the city of Strasbourg in the development of their projects. Some of the applications of the tool are to:

- Assess the **carbon footprint** and its contribution to France's **Factor 4** objective to improve energy efficiency in buildings and France's COP 21 commitment to cut GHG emissions by 75% by 2050 (compared to 1990 levels);
- Identify and forecast the number of households likely to be in a situation of **fuel poverty**;
- Develop and prioritise **sustainable mobility plans** by identifying access to main employment hubs with respect to different modes of transport such as car, bicycle and public transport;
- Analyse effectiveness of **pedestrian mobility planning** such as ease of access to basic amenities, neighbourhood facilities, shops and services;
- **Define** and **review** the actual contribution of the measures to achieving **sustainability** in the city's projects; and
- Make continual improvements by **measuring** and **evaluating** the governance aims against project outcomes.

The three pillars of success for PSET are that it:

- Uses established, well-understood software which is **accessible** to users and requires little training to use;
- Promotes **collaborative input** to ensure that all risks and opportunities are identified; and
- Priotises an **integrated approach** to ensure that the project takes a holistic overview of sustainability and due cognisance of all stakeholders. In addition, this makes sure that the knowledge gained from PSET is shared across other programmes and projects that can benefit from it.

Accessible Systems

- PSET consists of a suite of Excel files tailored to each individual city project and managed by a specified municipal project manager. The primary component is an Excel data-board describing the project with tabs under **six policy themes: mobility, nature and biodiversity, environment, urban planning, governance and cross-functionality**. Each tab contains a suite of questions and indicators relating to each theme. These serve to define the strategy and cost required to achieve the target objectives and ambitions set out for the project.
- After inputting data, the excel table automatically produces diagrams, descriptive datasets and graphs using pre-formatted equations. As such, all project results appear in **a systematic, consistent and easily understood** format. These useful information outputs allow the project manager and stakeholders to critically **analyse the performance**, **identify project successes** and **target opportunities for improvement**. Utilising a familiar, accessible suite of software ensures that little training is required and that a broad range of stakeholders can easily engage with PSET.

Collaborative Input

- While PSET is the overall responsibility of each designated project manager from the local municipality, it requires **input from all project stakeholders** including the developer, planner, designer and construction teams. Cooperative design ensures that the city implements suitable and resilient solutions which are cognisant of the dynamic nature of projects.
- The tool has been developed to be utilised during **all phases of the project lifetime** including the operational phases of projects. As such, the city is able to gain an overview of each project as it develops, monitoring progress and re-evaluating the project sustainability goals as it transitions from planning through to construction and use.

Integrated Approach

- The Project Sustainability Evaluation Tool takes a holistic approach to assessing the sustainability of its projects by considering each theme in context of the others. This is facilitated through the '**cross functionality**' tab which enables the user to **assess the interactions** between themes and consider additional cross-sectoral indicators, for example carbon footprint or energy efficiency, which requires input from a number of the tabs.
- An innovative aspect of the tool is that it supplies essential data to the **geographical information system** (GIS). Providing an interface between the tool and GIS enables it to generate **new spatial intelligence** as part of the overall approach.

Project Implementation

To date, the Project Sustainability Evaluation Tool has been tested on three developments with substantially different urban characteristics; in the **city centre**, in **suburbs close to the city centre** and in more **outlying suburbs**:

- The Danube eco-district, which is part of the larger urban project of the Deux-Rives;
- The Eco-district of Rives du Bohrie in Ostwald; and
- The Portes du Kochersberg project in Vendenheim.

A Snapshot of PSET in Use

An example of the PSET's functionality and output, generated for the Danube eco-district development in Strasbourg, is illustrated in Figure 1 below. This diagram charts **energy efficiency** and identifies trends of **CO_2 emissions** associated with dwellings within the Danube eco-district development. The carbon footprint estimate is based upon data from a number of different sectors including **construction activities**, **energy** and **transport**, enabling a more **robust assessment** of average footprint per inhabitant of the building shown in the example below.

Following collation of the relevant information, the building energy consumption data was entered into PSET and it **automatically calculated** if existing buildings follow the global objective defined for energy consumption. Data is **collected continuously**, allowing **frequent review** and **close monitoring** of the sustainability goals as the project develops.

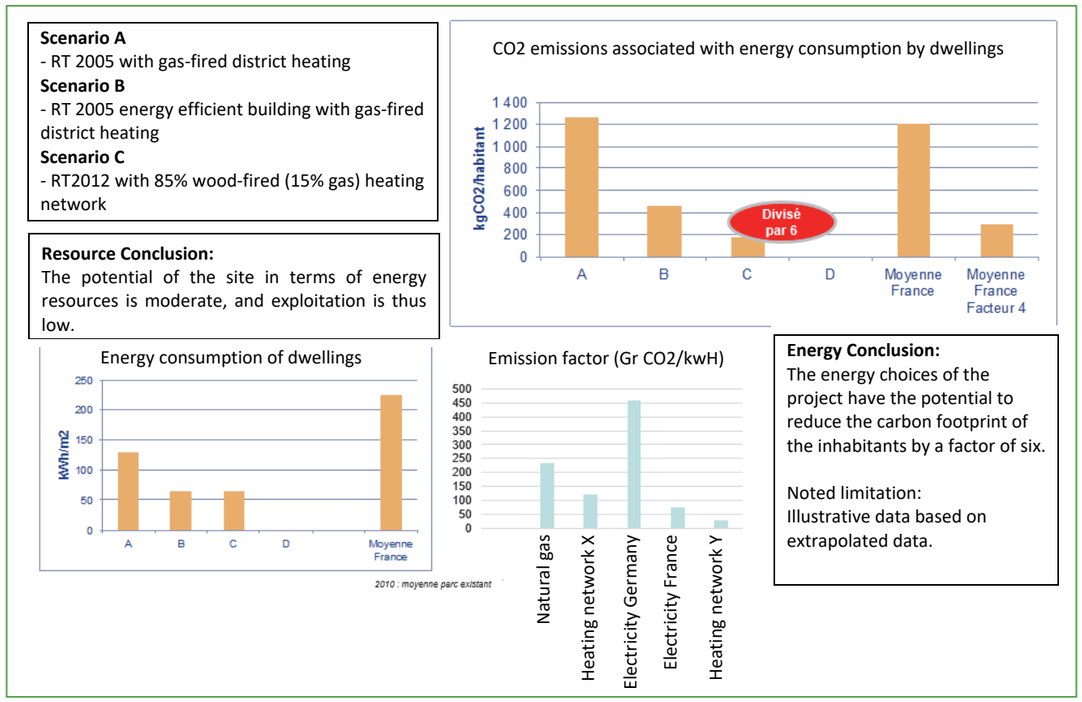

Figure 1: CO_2 emission trends and energy efficiency of dwellings in the Danube eco-district project. *Source: City of Strasbourg*

Another example of the output of PSET is presented in Figure 2. In this project, the tool was used to analyse tram-station accessibility with respect to the proximity of stations next to an urban project.

Future Implementation

In addition to the projects outlined above, PSET is currently used in the Vergers Saint-Michel project in Reichstett and is planned for further use in the Deux-Rives development in Strasbourg.

Given the success of the output, the city intends to **implement PSET on future developments** and ensure that sustainability is assessed in all city projects moving forward.

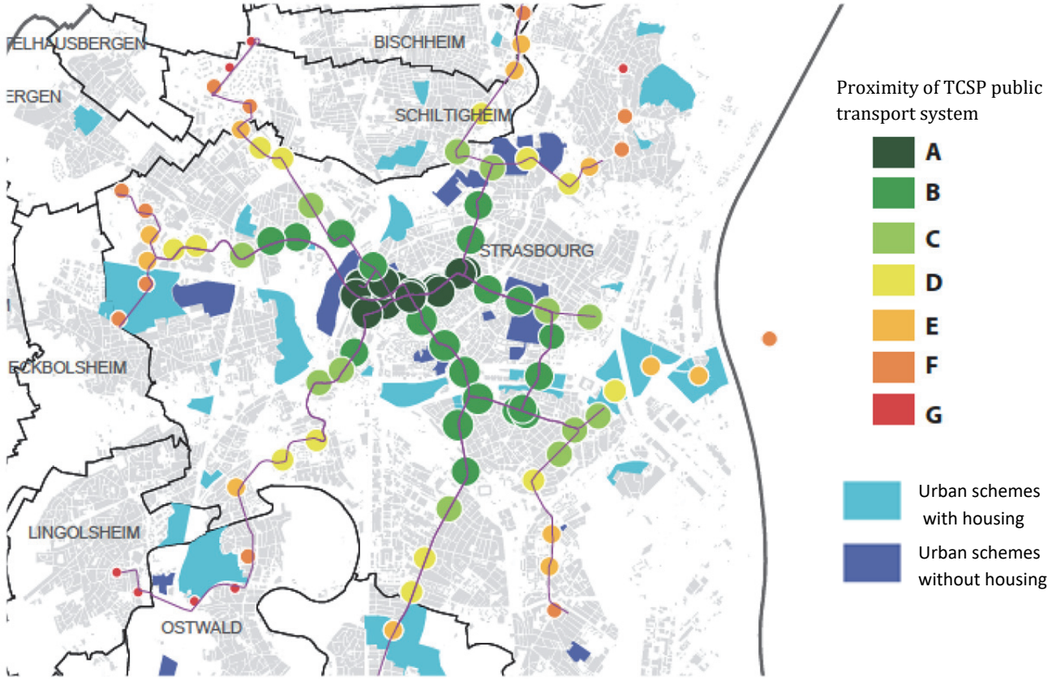

Figure 2: Analysis of tram-station accessibility regarding proximity of stations to urban projects. *Source: City of Strasbourg*

Key Benefits

The Project Sustainability Evaluation Tool brings a spectrum of benefits to the City of Strasbourg, project stakeholders and the city's inhabitants by providing **continual improvements in sustainability** across its projects. The holistic and integrated approach of PSET enables the city to have an overarching view of the performance, risks and opportunities of Strasbourg's projects. This, in turn, facilitates knowledge sharing from one project to the next.

As PSET is intended to be utilised throughout the entire project lifecycle, it provides **benefits from project inception to beyond project completion**. The tool acts as a guidance mechanism for the municipality and project stakeholders to **set sustainability goals** for their project and **monitor the progress** of these as the project develops. Further benefits of Strasbourg's Project Sustainability Evaluation Tool are provided below:

- Improves **accessibility to information** about city projects and provides the local authority with an overview of city projects and their contribution to public policy objectives.
- Allows stakeholders to **assess different project scenarios**, the impacts of change on the quality of the project and enables the project stakeholders to **make informed decisions** to **achieve sustainable solutions** to project needs.
- **Enables participatory planning and engagement** amongst project stakeholders in the planning and development of sustainable projects.
- Provides a **smart solution for asset management** and **development** by capturing data, monitoring progress and identifing key learnings which can be applied across other city projects.
- Results in the **implementation of sustainable projects** which in turn creates **economic, social and environmental benefits** for Strasbourg's industry, citizens and biodiversity.