# Smart City Financing by the SMO & VNG International

## **News and developments about national and international EU funding programs**

*Please note: Information on current and upcoming EU funding calls is subject to daily changes. The current document was refreshed until 22 October 2021.*

## **1. Highlights concerning smart cities of the 19th European Week of Regions and Cities Event (11-14 October 2021, hosted by the European Committee of the Regions)**

## **Important messages, suggestions from presentations**

* **Digitisation of cities will take place**, sooner or later all cities will have to accomplish it.
* You will not become a smart city without **establishing the smart local ecosystem**: convince and engage stakeholders, present good examples and the potential effects on their own circumstances, create co-thinking and co-creating opportunities
* Cities throughout Europe are not that different: **successful solutions should be reused, copied**. Do not reinvent the wheel.
* **EU funding for smart villages and small cities is insufficient:**
	+ It is mainly limited to the LEADER Programme,
	+ While other relevant sources (including Interreg programmes and certain regional development funds of national Operational Programs) are difficult to reach for rural communities.
	+ Rural communities must rely on combining sources (national funding, NGO/foundation resources, self-funding sources, PPP, ESCO-financing, bank loans).
* **Smart villages are mostly interested in getting funding for the following areas:**
	+ Reconstruction (old buildings, reconnecting communities, tourism);
	+ Elderly (and young) people – care and engage;
	+ Data management, digitally upgraded services;
	+ Resilient communities (smart agriculture, renewable energies).
* **Challenges of smart cities concerning innovative solutions:**
	+ Interoperability is highly important: in any smart city project you will work with data, and various systems will have to cooperate with each other.
	+ Own and manage your digital assets, do not be tied to one single vendor.
	+ Apply consistent data management: follow data processes, always be aware if the data is open or personal, consider legal, GDPR and ethical issues, always use properly licensed data.
	+ Structure your public procurements properly, with clear technical specification.
	+ Engage more than one solution providers, managing their responsibilities and interactions.
	+ Start small (so that you can “scale or fail” fast).
	+ Use “digital twin” concept from the first moment: city as a platform (cross-domain relationships, system interactions, data correlation).
	+ Introduce a multidisciplinary project team (including service / user case designer, data manager, legal specialist / data protection officer).
* **When working with start-ups:**
	+ Remember that private companies have their business agenda.
	+ A mutually advantageous business model has to be elaborated, acceptable for the start-up and considering EU funding criteria as well.
	+ Allow their creative thinking to be part of decision making and project design.

## **Projects, networks supporting smart cities**

* As a collaboration platform between municipalities, digital sector, knowledge institutions across the Europe, the [Gaia-X project](https://www.data-infrastructure.eu/GAIAX/Navigation/EN/Home/home.html) can help small and medium-sized cities becoming smart cities with data models, usecases and referential architecture.
* The [City-by-City Catalogue](https://oascities.org/catalogue/) provides best practices from cities around the world, showcasing deployed solutions, and the products and services which underpin them.
* The [Long-term Vision for the EU's Rural Areas](https://ec.europa.eu/info/strategy/priorities-2019-2024/new-push-european-democracy/long-term-vision-rural-areas_en#documents) aims stronger, more connected, more prosperous, and more resilient rural areas by 2040. Its contents most relevant to smart villages include:
	+ Flagship project ‘Rural revitalisation platform’
	+ Flagship project ‘R&I for rural communities’
	+ Enhanced networking
	+ Strategic focus areas: Connectivity, mobility, environment, climate, youth
	+ Rural Pact (proposed to national regional stakeholders)
	+ Toolkit on combination of EU funds for the revitalisation of rural areas
* The Smart Rural 21 project initiated the [Come Along!](https://www.smartrural21.eu/come-along/) process, to provide opportunity for villages (beyond the ones cooperating in the project) to get engaged in several project activities, take part in knowledge exchange, and develop and implement their smart village strategies and solutions. Application is possible via the [feed-back form](https://e40.typeform.com/to/DvzPcWNY?typeform-source=smartrural21.typeform.com).
* The [ENRD smart village portal](https://enrd.ec.europa.eu/smart-and-competitive-rural-areas/smart-villages/smart-villages-portal_en) serves as a hub for exchange of information on how Rural Development policy, programmes, projects and other initiatives are working in practice and how they can be improved to achieve more.
* Eurocities, a network of more than 200 cities in 38 countries launched a specialised [portal of innovative practices during COVID](https://covidnews.eurocities.eu/), to help cities respond to the coronavirus crises with information, good practices and networking.
* The SCIFI (Smart City Innovation) project prepared [The smart cookbook for midsized cities](http://smartcityinnovation.eu/wp-content/uploads/2021/10/The-smart-cookbook-for-midsized-cities.pdf), to share good practices in smart city project development.

## **Special services of the Smart Cities Marketplace to get non-EU funding for your smart city project**

* The [Smart Cities Marketplace](https://smart-cities-marketplace.ec.europa.eu/) is a free service, financed by the European Commission, available for all European cities.
* They are looking for mid-sized cities (the “small giants”), from the range of 10-20 thousand inhabitants. It is also an option to bundle smaller settlements.
* You can [sign up](https://ec.europa.eu/eusurvey/runner/Join_AC) for free to take part in various services (databases, networking, workshops and webinars, matchmaking with investors, submit project applications, receive guidance to create ‘bankable’ investment concepts.
* A 2-day FREE masterclass is also available (developing your own project idea into a full smart investment concept, ending match-making pitch with fictional investors)
* A specific [booklet on citizen engagement solutions](https://smart-cities-marketplace.ec.europa.eu/insights/solutions/solution-booklet-citizen-engagement) is available.

## **2. Current and foreseen transnational calls for proposals relevant to smart cities**

## **Horizon Europe**

Current and foreseen calls for proposals that may be relevant to smart cities in the 2021-2022 Horizon Europe Work Programme:

* 15 topics of the “Sustainable, secure and competitive energy supply” call (HORIZON-CL5-2021-D3-02) are open (Deadline: 5 January 2022)
* 8 topics of the “Safe, Resilient Transport and Smart Mobility services for passengers and goods” call (HORIZON-CL5-2022-D6-01) are open: (deadline: 12 January 2022)
* 5 topics of the “Efficient, sustainable and inclusive energy use” call (HORIZON-CL5-2021-D4-01) are open: (deadline: 25 January 2022)
* 16 topics of the “Sustainable, secure and competitive energy supply” call (HORIZON-CL5-2021-D3-03) are open: (deadline: 23 February 2022)
* 7 topics of the “A human-centred and ethical development of digital and industrial technologies” call (HORIZON-CL4-2022-HUMAN-01) will open on 23 November 2021: (deadline: 05 April 2022)
* 15 topics of the “Sustainable, secure and competitive energy supply” call (HORIZON-CL5-2022-D3-01) are open: (deadline: 26 April 2022)
* 22 topics of the “Cross-sectoral solutions for the climate transition” call (HORIZON-CL5-2022-D2-01) will open on 28 April 2022: (deadline: 06 September 2022)
* 5 topics of the “Efficient, sustainable and inclusive energy use” call (HORIZON-CL5-2022-D4-01) will open on 28 April 2022: (deadline: 06 September 2022)
* 7 topics of the “Safe, Resilient Transport and Smart Mobility services for passengers and goods” call (HORIZON-CL5-2022-D6-02) will open on 28 April 2022: (deadline: 06 September 2022)
* 8 topics of the “Sustainable, secure and competitive energy supply” call (HORIZON-CL5-2022-D3-02) will open on 26 May 2022: (deadline: 27 October 2022)
* 5 topics of the “Efficient, sustainable and inclusive energy use” call (HORIZON-CL5-2022-D4-02) will open on 06 September 2022: (deadline: 24 January 2023)

Horizon Europe calls and relevant other documents are available on the [Horizon Europe segment of the Funding & Tenders portal](https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-search;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=0,1,2;statusCodes=31094501,31094502;programmePeriod=null;programCcm2Id=43108390;programDivisionCode=null;focusAreaCode=null;destination=null;mission=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=sortStatus;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState).

## **LIFE Programme**

Current calls for proposals that may be relevant to smart cities:

* “Addressing building related interventions for vulnerable districts” call (LIFE-2021-CET-ENERPOV) is open (deadline: 12 January 2022)
* “Multilevel climate and energy dialogue to deliver the energy governance” call (LIFE-2021-CET-GOV) is open (deadline: 12 January 2022)
* “Integrated Home Renovation Services” call (LIFE-2021-CET-HOMERENO) is open (deadline: 12 January 2022)
* “Community-driven clean energy transition in coal, peat and oil-shale regions” call (LIFE-2021-CET-COALREGIONS) is open (deadline: 12 January 2022)
* “Facing the increase in cooling demand of buildings in the coming years” call (LIFE-2021-CET-COOLING) is open (deadline: 12 January 2022)
* “Developing support mechanisms for energy communities and other citizen-led initiatives in the field of sustainable energy” call (LIFE-2021-CET-ENERCOM) is open (deadline: 12 January 2022)
* “Creating the conditions for a global improvement of smart readiness of European buildings” call (LIFE-2021-CET-SMARTREADY) is open (deadline: 12 January 2022)
* “Establish innovative business models and contractual schemes for smart and sector-integrating energy services” call (LIFE-2021-CET-SMARTSERV) is open (deadline: 12 January 2022)

LIFE calls and relevant other documents are available on the [LIFE segment f the Funding & Tenders portal](https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-search;callCode=null;freeTextSearchKeyword=;matchWholeText=true;typeCodes=1,0;statusCodes=31094501,31094502,31094503;programmePeriod=2021%20-%202027;programCcm2Id=43252405;programDivisionCode=null;focusAreaCode=null;destination=null;mission=null;geographicalZonesCode=null;programmeDivisionProspect=null;startDateLte=null;startDateGte=null;crossCuttingPriorityCode=null;cpvCode=null;performanceOfDelivery=null;sortQuery=startDate;orderBy=asc;onlyTenders=false;topicListKey=topicSearchTablePageState).

According to the 2021-2024 Work Programme of the LIFE Programme, new calls for proposals are expected in every January of the forthcoming years (2022, 2023 and 2024).

## **EU City Facility (EUCF)**

The 3rd Call of the EUCF Programme was launched on 15 October 2021 (deadline: 17 December 2021):

* Provision of technical and financial support to prepare investment concepts (60.000 Eur per project)
* Budget available (for Central Eastern Europe): 1,56 M EUR (funding 26 selected applicants)
* Czech winners in previous calls: none on the 1st call, 1 in the 2nd call
* No limit for number of inhabitants: The mission of EUCF is actually to support medium and small cities. Grouping
* No limit to the size of investment to be conceptualised either:
* Application of groupings (cities applying together with a joint project) is encouraged.

Further information of the call is available on the [EUCF website](http://www.eucityfacility.eu/). The 4th (and final) call is expected in Spring 2022.

## **Interreg Central Europe**

The [first call](https://www.interreg-central.eu/Content.Node/apply/newfunding.html) will open on 15 November 2021, with a submission deadline or 23 February 2022. The [Applicant Community](https://community.interreg-central.eu/) is already available providing support to find partners for project ideas.

## **Danube Transnational Programme**

The programme is still to be adopted. The first call is expected in the first quarter of 2022.

## **URBACT IV and European Urban Initiative (EUI)**

Two separate programs that will be implemented in very close synergy:

* URBACT will put more emphasis on small and medium-sized cities (while EUI will keep the threshold of 50,000+ for cities or agglomerations).
* Higher focus is provided for testing, further development, and transfer of existing solutions.

## **Interreg Europe**

The [final text of the Interreg Europe cooperation programme for 2021-2027](https://www.interregeurope.eu/fileadmin/user_upload/documents/Programming_Committee/Interreg_Europe_2021-2027_CP_final_version__September_2021_.pdf) is now published. First call is expected in March 2022.

# Smart City Financing by the SMO & VNG International

**Background information and methods for practical assignments: planning and timing activities of smart city projects**

## **Definition of basics**

* A **“Workpackage”** is a group of related project activities required to produce the “Main project outputs” of the project. Each Workpackage should lead to the development of one or more Main project outputs. A Workpackage can be thought of as a sub-project, which, when combined with other Workpackages, form the complete project. Workpackages are divided into activities.
	+ Examples for horizontal Workpackages: Project management; Communication
	+ Examples for thematic (or content) Workpackages: Stakeholder engagement, Construction, IT development, Knowledge sharing, Transfer and roll-out… (but there are no prescribed titles)
* An **“Activity”** is a single process or task, done for a particular purpose.
* A **“Deliverable”** is any physical or intangible result, that was produced through an activity. Deliverables contribute to the achievement of Main project outputs. Deliverables are manifold:
	+ Method: methodology, guideline, action plan…
	+ Tool: manual, knowledge repository, IT solution…
	+ Plan: communication plan, engineering design…
	+ Network: forum, platform, protocol, living lab…
	+ Digital/written communication: article, newsletter, brochure, website…
	+ Event: professional, public, media…
	+ Training: syllabus, training report…
	+ Report: analysis, study, conclusions…
	+ Data: database, map, GIS…
	+ Investment: equipment, construction…
	+ etc.
* The **“Main project outputs”** are the key deliverables of the project, that contribute to achieving the objectives of the project.

## **How to arrange Workpackages (or main groups of activities)?**

* Some EU programmes (e.g. transnational and cross-border Interreg programs, Horizon, LIFE) require the use of Workpackages, while calls under national Operational Programs usually don’t. However, **when planning project activities, it is useful to arrange them under Workpackages** in any project.
* **Identify key challenges of the project, and define Workpackages in line with them**, to answer these challenges.
* Keep the number of **thematic Workpackages between 3-6**.
* It is useful if one Workpackage is **coordinated by one partner** (with other partners contributing as required). Do not mix activities that require too different capabilities. This is beneficial to:
	+ Establish a balanced task division between project partners,
	+ Allow specialised teams to work on parallel processes.
* Consider **general timing features** of the Workpackages (sequential, parallel, mixed)
* **Generic Workpackages suggested** for the smart city projects:
	+ Horizontal: (Project management;) Communication
	+ Thematic Workpackages: Preparation; Stakeholder engagement; Technical solution; Knowledge sharing

## **Use of flow-charts**

* Pros:
	+ Visualises the process, easy to understand and to demonstrate to third parties,
	+ Clears logical conditions between steps, helps to avoid logical errors.
* Cons:
	+ Requires some graphic or visualisation skills,
	+ Can be difficult to constantly update in the later, refining stage of activity planning.
* Free online tool: [diagrams.net](https://app.diagrams.net/)
	+ Drag-and-rearrange elements,
	+ Vary shapes/colours/links/texts,
	+ Flowcharts can be integrated into your Google drive, to be shared and to be available remotely.

## **Use of Gantt charts**

* Presenting the activities of the project
* May be grouped into Workpackages
* Timing, dependencies, milestones, responsibilities are indicated
* Full process:
	+ Make a list of all the activities (tasks) that are needed to complete your project
	+ Define the start and end dates for each activity
	+ Create a project timeline based on the duration of activities
	+ Identify dependencies (logical relations) between activities
	+ Fill out the timeline with bar charts of the activities
	+ Assign tasks to your team members
	+ Set milestones
	+ Identify the critical path
* Further use during project implementation: endless possibilities!
	+ Introduce and update completion level counters,
	+ Share online for direct and real time access
	+ Include reminders, sync with calendars, etc.
* Software options:
	+ There are generally no standalone Gantt-chart designer tools, they usually come as part of complete project management software packages.
	+ Free demo of paid applications, with limited functionality:
		- [ClickUp™ | One app to replace them all](https://www.clickup.com/?_ga=2.50115555.491719599.1634109980-1330666336.1634109980)
		- [Timeline View (Gantt) – Redbooth Help](https://support.redbooth.com/hc/en-us/articles/115000252671-Timeline-View-Gantt-)
	+ Free, open source, desktop solution: [GanttProject - Free Project Management Application](https://www.ganttproject.biz/)
	+ Free, online solution: [Bitrix24 Registration](https://www.bitrix24.net/create/?user_lang=en&client_id=site.53889571c99248.40051848&referer=https%3A%2F%2Fwww.bitrix24.com%2Fuses%2Ffree-gantt-chart-software.php%3Fgclid%3DCjwKCAjwh5qLBhALEiwAioodsxNUjQIDAcRlxfhy-V9Nd-8Cc4AgGHmJNxVn6G241qiRgU3NaEWesxoC0scQAvD_BwE&ga=GA1.2.1983421281.1634112562&_ga=2.90995097.281158857.1634112562-1983421281.1634112562&gclid=CjwKCAjwh5qLBhALEiwAioodsxNUjQIDAcRlxfhy-V9Nd-8Cc4AgGHmJNxVn6G241qiRgU3NaEWesxoC0scQAvD_BwE&menu_preset=tasks) (free registration)
* Excel:
	+ Pros: Widely known, available and used
	+ Cons: Time consuming, non-responsive, no added functionality
	+ Do not start from scratch, download a free Gantt template (example: [A Complete Guide to Gantt Charts [Free Templates] | Aha! software](https://www.aha.io/roadmapping/guide/templates/gantt-charts))

## **Assignment: “Main activities and their time schedule”**

Please note that you will receive detailed instruction for this assignment during the training. Also, the moderators and experts will help your workgroup in preparing an initial activity plan for the thematic project idea under development by each thematic workgroup. Some notes and suggestions for the exercise:

* The assignment will aim to establish a simplified project activity plan, focusing on the key activities.
* Closely related activities will be grouped into Workpackages.
* For the sake of the exercise generic Workpackages are defined (but these can be modified or supplemented if required by the project idea)

The template used for the assignment is as follows (presenting a fictional smart mobility example with simplified activity plan, highlights, interdependencies, and critical path):

|  |
| --- |
| **Main activities / timeline** |
| Start End!!! |
| PreparationStakeholder surveyBenchmark of good practicesAwareness raising…National (and international) roll-outMedia events for the pilotingFinal conferenceConcept designPermitting, legal arrangementsDetailed designConstructionTesting, pilotingFeed-back and refinementPartner meetingsStakeholder training coursesStakeholder engagementTechnical solutionKnowledge sharingCommunicationOther: ………….. |

## **Optional homework assignment: “Implementation plan of a selected thematic workpackage of the project”**

The experts delivering the training session offer you the possibility to prepare an optional homework assignment and submit it to receive feed-back and thus become more familiar with the requirements of properly describing Workpackages of a smart city projects. The process of the assignment is as follows:

1. Please give a short description of the project scenario you are targeting. It can be one of the thematic project ideas developed during the workgroup assignments of the training sessions, but you are free to select your own project idea if you feel like to. Just make sure to provide sufficient information for the experts to be able to properly evaluate your homework assignment.
2. Please select one thematic Workpackage and fill out the template below.
3. Please submit the template to SMO until November 19 2021, who will forward it to the relevant expert.

|  |
| --- |
| **Short description of the project scenario** |
| *You are free to select any project idea, but make sure to provide sufficient information for the experts to be able to properly evaluate your homework assignment.* |
| **Title of thematic workpackage** |  |
| **General description of thematic workpackage** |
| *What is the main purpose of the workpackage and what is the relation to the project objectives?**How does it fit into the project process and how does it relate to other workpackages?**Which partners (or partner types) are responsible for the workpackage?* |
| **Activities and key outputs of the thematic workpackage** |
| *List the main activities to be implemented under the Workpackage, explaining their sequence and dependencies.**What are the key outputs of the workpackage?* |

# Smart City Financing by the SMO & VNG International

**Background information and methods for practical assignments: innovative aspects, indicator planning and target group analysis of smart city projects**

## **Why is the classification of innovations important for smart city projects?**

* When applying for EU funding in usually competitive application procedures, **it is advantageous if your smart city project is fresh, bold, creative, and experimental**. If possible, your smart city project should go beyond the present state-of-the-art and business-as-usual.
* The **EU is generally interested in financing niche areas and projects with high transferability potential**.
* Projects that are merely replications of already implemented examples, or that are part of normal urban development activities are better targeted at **national funding programs**.
* By classifying innovative elements under different types of innovation, it becomes **easier to design what the project should achieve and how**. It also helps to **better understand where the results and processes of the project fit** into the urban ecosystem.
* Innovation typology provides a **common understanding of technology status**. It also helps to trace the constant evolution of innovative solutions.
* Innovations of various types may require **different risk management, funding and transition approaches**, thus classification helps to better tailor these activities.
* The classification of innovations also helps to **present the innovative aspects of the project in a coherent and convincing way** – for partners, stakeholders, but also for decision makers evaluating your project proposal.
* As sustainable smart city projects are normally a complex set of actions, it is important to **distinguish between the various innovative elements** applied. Classification helps this exercise as well.
* Classification also helps to perform a **more structured research and benchmarking of innovative solutions** relevant for your project or city.

## **Types of innovation**

* **Organic/Evolutionary Innovation:**
	+ This type of innovation tends to be slow and focused on adaption rather than disruption. Such solutions (products, services, processes) evolved over time, based on lessons learned from experience. Innovative aspects can be the new elements added to the existing idea, or the new area to which existing solutions are applied.
	+ **Practical examples** include the kaizen development method applied by Toyota (literally translates as “continuous improvement”), or the highly successful products of Apple Inc. (iPhone, iPod, and iPad), representing enhanced solutions of already existing products to already existing markets.
* **Breakthrough/Revolutionary Innovation:**
	+ This type of innovation creates completely new solutions never tested before in that particular form or area.
	+ Revolutionary innovations make evolutionary innovations possible, as the latter uses the products and processes created by revolutionary innovation to make incremental innovation.
	+ **Disruptive innovations** are extreme cases of revolutionary innovations, creating a product or process that disrupts current markets and creates something completely new and amazing.
	+ A **practical example** from the car industry: The fuel injection technology (an evolutionary innovation) made possible the development of the first cars in the late 19th century (a revolutionary innovation). In 1908 however, Henry Ford introduced efficient fabrication based on the assembly line production (a disruptive innovation) leading to affordable automobiles to replace horse-drawn carriages.

## **Technology readiness levels (TRLs)**

* A classification method estimating the maturity of technologies.
* Originally developed at NASA (during the 1970s).
* Enables consistent, uniform typology of technical solutions within any technical (or scientific) area.
* The **full TRL scale includes 9 levels** starting from the lowest maturity (1) to the highest (9):

|  |  |
| --- | --- |
| **TRL** | **Maturity** |
| 1 | Basic principles observed |
| 2 | Technology concept formulated |
| 3 | Experimental proof of concept |
| 4 | Technology validated in a laboratory environment |
| 5 | Technology validated in a relevant testing environment |
| 6 | Technology demonstrated in a relevant testing environment  |
| 7 | System prototype demonstration in operational environment |
| 8 | System complete and qualified |
| 9 | Actual system proven in operational environment (competitive manufacturing in the case of marketable products) |

* **Shortages** of the TRL classification include:
	+ Readiness does not necessarily fit with applicability to a desired environment: a mature product may possess a greater or lesser degree of readiness for use in a particular context than one of lower maturity.
	+ Numerous other factors must be considered when analysing innovations, not measured by the scale: eligibility, feasibility, obsolescence, sustainability, etc.
	+ For more complex solutions incorporating innovative solutions on various development stages, a more detailed matrix scheme should be applied.

## **Indicator design**

A simple and easy-to-follow way to design proper indicators for projects is the **Results Framework method** used in Urbact indicator planning workshops. The method is explained hereunder with references to smart city situations:

The overall framework of the Results Frameworkmethod is the general scenario for any project, where initially we have a **‘current situation’** that is problematic and needs to be **‘changed’**.

* The **‘current situation’** forms a challenge that occurs on European, national and/or local level. Policy documents or baseline studies on the topic clearly state what ‘the problem’ is. Such documents may come from municipalities or their collectives on national or European level as well (e.g. the Leipzig charter, or statements of the CEMR - the overarching European union of national organisations similar to SMO).
	+ Energy example of a current situation: We are using fossil fuels as energy source for heating, resulting in CO2 exhaust, leading to climate change; but also side effects like (ultra)fine particles / air pollution causing illness and early deaths; dependency on autocratic regimes where we import these energy from; etc.
	+ Mobility example of a current situation: Automobility is growing, resulting in traffic jams, CO2 exhaust, fine particles exhaust /air pollution, noise, health issues, dangerous situations and accidents – all threatening liveability.
* We want to **‘change’** this current situation to a new, desired situation. Managing and achieving this change is a **‘challenge’**, that is the **‘specific objective’** of our project.
* We measure the change through **‘monitoring & evaluation’** of the outputs and results of our project.
	+ Energy examples of targeted change: We want to use less energy by energy saving measures; we want to step back from fossil fuels by installing renewable energy sources; etc.

To change the existing situation, we draw up an **‘Action Plan’.**

1. The starting point of the Action Plan is a description of the ‘change’ we want to achieve.

* This description of the change is concluded in the **‘specific objective’** answering the question: “What is it that we would like to achieve?”
* The specific objective leads to the **‘intended result’.**

2. We draw up **‘actions’** in the Action Plan, that contribute to the specific objective we want to reach.

* These actions can include both **‘hard’ investments** and **‘soft’ elements** as well.
* It might be that we are lacking knowledge on a specific theme, that we first need to survey; or that we need to change the mindset of stakeholders with a targeted communication campaign or training; etc.
	+ Energy examples of actions: In order to change the energy mix, we first need to know more about the existing situation, therefore we develop a road map or do a survey on the current situation; then we might decide to go for an investment scheme for our citizens to install solar panels or to do a renovation scheme of our public buildings.
	+ Mobility examples of actions: We might ‘close’ roads for vehicle traffic, and give more priority to alternative traffic, via installing facilities for (electric) bikes; etc.

3. The actions included in the Action Plan lead to **‘outputs’.**

* Outputs are **direct products** created by the actions.
	+ Energy examples of outputs: Roadmap; survey; marketing campaign; installation of solar panels on roofs of individual houses; renovating a certain number of buildings; etc.
	+ Mobility examples of outputs: Installation of a bicycle parking facility; construction of new bicycle roads; promotion campaign; etc.
* These outputs should be **clearly measurable**:
	+ Energy examples of measurable outputs: Number of solar panels installed with a capacity of X MW hours; number of meetings with households during the marketing campaign; etc.
	+ Mobility examples of measurable outputs: Number of bicycle stands installed; length of new bicycle roads built; number of flyers produced; number of lease of electric bikes; etc.

4. The outputs contribute to the **intended result**.

* The intended result is not a direct product of the actions, but the **desired change** in the existing situation.
* Since we want to have a tangible and measurable results, we need to find **‘result indicators’** closely related to the change we want to measure.
* Result indicators are often predefined by the funding programme you apply for: Since the programme wants to reach a specific goal in a certain territory (that is a certain change in a problematic existing situation) it invites the projects to ‘add’ to that change.
	+ Energy examples of result indicators: Reduction of CO2 in Mtons; % change in energy mix in the area; etc.
	+ Mobility examples of result indicators: Reduction of automobility in km; % change in modal split (public transport, private cars, soft mobility); etc.

These elements connect to each other and the strategic framework of the project in the way described by the following chart:

**ACTION PLAN**

**MONITORING & EVALUATION**

**SITUATION**

**CHANGE**

**SPECIFIC OBJECTIVE**

**INTENDED RESULT**

**RESULT INDICATOR**

**OUTPUT**

**OUTPUT INDICATOR**

The three main categories to be defined for a project in the results framework method are as follows:

* **Specific objective:** Description of the change you want to achieve in the existing situation: the intended result
* **Result indicator:** A variable that describes a relevant aspect of your intended result to measure the change in the situation.
* **Output indicator:** A variable that describes the outputs that your action plan will produce. Outputs are the direct products created by the implementation of your action plan.

The table below highlights possible contents of the Results Framework template for various general examples:

| **Specific objective** | **Result indicator** | **Output indicator** |
| --- | --- | --- |
| **Jobs and skills**Increase the number of young people in jobs (or reduce the youth unemployment rate) | Youth unemployment rateBaseline 24% (2016)Target 20% (2020) | No. young people accessing trainingNo. young people accessing careers adviceNo. young people accessing work experience placements |
| **Economic development & entrepreneurship**Increase the capacity of high street shop keepers to collaboritavely attract customers to their shopping street | Average number of customers visiting the high streets per day (based on systematic visitor counts)Baseline: 10.000 (2016)Target: 20.000 (2020) | No. Of promotion activities to attract customers to high streetNo. Of retail organisations supprted to write a business plan- No. Hours support delivered |
| **Community cohesion**Reduce inter-racial tensions between the different communities of Avalon | Number of racism-related incidents and hate crimes reported in police statistics (average per week)Baseline: 45 (2015)Target: 20 (2019) | No. of inter-cultural dialogue events organisedNo. Of awareness campaigns deliveredNo. Of new inter-community neighbourhood groups established |
| **Urban renewal**Improve the suitability of the post-war housing settlements for self-sustained living for elderly | % inhabitants who qualify their housing situation (defined as quality of their house and availability of essential services and facilities) as adequate for self-sustained ageing(Based on survey among inhabitants)Baseline 25% (2016)Target 60% (2024) | No. Of social housing apartments made future proofNo. Of 'elderly living support services' established |
| **Urban sustainability**Increase the share of locally generated renewable energy in total energy consumption of Avalon |   | No. Of local energy cooperatives createdAdditional solar energy production capacity installed (kilowatt peak)City incentive schemes to boost local renewable energy generation (e.g. small investment grants or a local revolving fund) |

The Results Framework template is presented below, through the cases of 3 smart city project examples presented in Sessions 2-3 by EU Quest:

# D2GRIDS project (smart energy):

|  |  |  |
| --- | --- | --- |
| **Specific objective** | **Result indicator** | **Output indicator** |
| To increase the share of Renewable Energy Sources (=RES) used for heating & cooling, through accelerating the roll-out of 5th Generation District Cooling & Heating systems. | **The following result indicators were established:**1. Share of renewable energy sources used for heating & cooling2. Surface area served by 5GDHC system3. Mwh/a heating and cooling capacity installed4. Reduction of greenhouse gas emission in tons CO2 equivalents/year**Baseline figures (before implementation):**1. Cca. 13% in North-West Europe2. 200,000 m23. 19,44 MWh/a**Target figures (after the project is completed)**2. 500,000 m23. 11.5 MWh/a4. GHG emissions reduced by 1,700 t CO2eq/yr**Target figures are also established for long term effects (5 and 10 years after the completion of the project).** Please note that target figures for result indicator no. 1 are not set for after the project was completed, but 5 and 10 years after completion (with a value of 17% and 20%). | * To industrialize the 5GDHC technological model. A generic technology model and product standards will be defined, increasing the adaptability and ease of replication of 5GDHC systems. Product and process standards and a catalogue of Best Available Technologies will facilitate the process.
* To reduce market barriers hindering the uptake of 5GDHC system. A business plan will be delivered for commercialisation of 5GDHC and pilot level investment thesis, risk/return profiles and investment opportunities will be demonstrated.
* To demonstrate 5GDHC concept at pilot sites. 5 pilot investments will be implemented.
 |

# W(E)SH project (digital services)

|  |  |  |
| --- | --- | --- |
| **Specific objective** | **Result indicator** | **Output indicator** |
| To increase citizen satisfaction rates of Public Spaces, and to meet the quality standards that the City itself has set by introducing digital citizen involvement means. | **A result indicator specifically measuring citizen satisfaction was introduced by the municipality earlier, measured via a bi-yearly standardized survey:**Citizens rates for maintenance level of public spaces **Baseline figure (before implementation):**Citizens rated the general maintenance level of public spaces at 6.7 (out of 10) in 2017 (6.6 in 2009), with high variance between neighbourhoods (7.8 v. 5.7) and maintenance categories.**Target figures (after the project is completed)**The municipality wants to improve the rating by half a point across neighbourhoods and management categories. Aggregate City-level Surveyed Citizen Satisfaction rating increases from 6.7 to 7.2**Further result indicators to measure long term effects:**1. Success of the WESH Crowd sourcing Scheme:* % increase in the number of completed tasks in relation to all tasks published
* % change in the number of actively involved citizens

2. Impact on the Quality of Public Services:* Rise of the aggregate satisfaction rating
* Increase in Citizen Satisfaction with Public Space Management

3. Impact on Social Cohesion:* Increase in Social Cohesion and Wellbeing

4. Impact on Local Economy:* Increase in the transactions with local businesses
 | * Create a Crowdsourced Public Service Delivery model (using digital currency & App): at least 3 departments of the Municipality will publish tasks on the WESH App
* Department of Public Space crowdsources 25% of its small maintenance tasks
* 150 man hours per year are spent on public space delivery
* At least 3 targeted intervention strategies completed via the Smart Neighbourhood Planning Platform
* 85% of registered users active (2 tasks completed/ year) user of the App
* 90% of the tasks on the App validated as done well.
* Involvement of 50 local businesses and service providers join the WESH Scheme (ca. 3% of all registered local businesses and establishments)
* Establishment of a Smart Public Service Lab delivering 5 new public service innovation projects
* 60 people trained from other cities and organisations on the application of the WESH Scheme
 |

# SASmob project (smart mobility)

|  |  |  |
| --- | --- | --- |
| **Specific objective** | **Result indicator** | **Output indicator** |
| To accelerate progress towards multimodal, inclusive and low-environmental impact mobility via data-driven responsive IT system and cooperation between public and private entities | **1. Improved company culture & success of employers mobility pledge:*** 7 companies with 6800 employees participate in the Smart Alliance for Sustainable Mobility (SASMob) and develop Commute and Telework Deals
* Additional 16 new companies join the Smart Alliance for Sustainable Mobility and sign Mobility Pledge Contracts
* 30% of employees within Smart Alliance are using IT JOB platform and fed their commuting data into the SASMob IT data analysis tool
* Increased home-working to 5% of office working days among participating institutions within SASMob, thus reducing mobility needs altogether (especially in rush hours)
* IT JOB for carpooling is used by 20% of employees within Smart Alliance

**2. Behaviour change of citizens:*** 20% modal shift towards sustainable travel modes (including cycling and car sharing) within Smart Alliance including using shared carpooling
* Increased satisfaction with working conditions within the SASMob
* Reduced single driver car traffic with 20% on working days
* 1000 registered players for IT JOB gamification App in Szeged and additional 1000 registered players in other, follower cities

**3. Decreased mobility footprint:*** Energy consumption & CO2 emission reduced 25% during SASMob project, allowing savings of 1,5 tons of CO2
* On average the weekly additional calories burnt are 200 calories - which represents an increase in calories burnt of 15% from walking and cycling
* Car usage decreased to 19% in modal split

**4. Responsive, sustainable public transport:*** Engagement of 3000+ citizens in defining priorities & co-designing city mobility plans
* 12% rise in satisfaction level with public transport services
* 10% rise in utilization level of public transport services
* 5% decrease in public transport budget deficit
 | * Development of a cross-sector cooperation (Smart Alliance) between businesses and the city through which businesses receive powerful tools to co-design and tailor innovative solutions to facilitate sustainable commuting for their employees.
* Development of a strong data management process (IT JOB) which enables analysis of the complex and interrelated urban mobility network, using transport behaviour data collected through detecting sensors/surveys/data aggregates from personal mobility patterns facilitated by smart phone applications.
* Adaptation of mobility service solutions to local circumstances in a responsive way.
 |

## **Target group analysis**

A smart city is a **multi-stakeholder ecosystem** where **stakeholder engagement** is very important for the success. Stakeholders may have positive or negative impacts to a project. The **suggested process to identify and manage target groups in a smart city projec**t is as follows:

1. **Identify relevant interested parties** of the project, their interests, possible impacts and influences. List of potential stakeholders of smart city projects (feel free to include further items if relevant for your project):
	* Academic and research institutions
	* Local and regional municipalities
	* Financial suppliers / Investors
	* Energy and mobility suppliers
	* ICT sector representatives
	* Citizens
	* Government
	* Property developers
	* Non-profit organisations
	* Urban planners
	* Policy makers
	* Experts and scientists
	* Political institutions
	* Media
	* Etc.
2. For each of the relevant target groups, try to **map their knowledge and initial opinion** about the project or activity, their **attitudes and behaviour**, and the **ways in which they interact** between themselves or with each other.
3. Based on the detailed understanding of the target groups, **analyse their interests** about the planned results of the project and their **impacts** on the success of reaching project objectives.
4. **Identify those who could be allies** in the implementation of the project. Decide who to involve as project partners, and which stakeholders to assign as target groups.
5. **Develop appropriate involvement, engagement and communication approaches** for each of the groups.

A simple and straightforward way to analyse the interests of stakeholders and their impacts on the project is the **stakeholder mapping method**, presented below via the example of a smart mobility project:

**INTEREST**

**INFLUENCE**

Citizens

Experts and scientists

Policy makers

Non-profit organisations

Property developers

Government

ICT sector representatives

Mobility suppliers

Energy suppliers

Financial suppliers / Investors

Local and regional municipalities

Academic and research
institutions

Political institutions

Media

The suggested approach to involve, engage or to communicate with the four main clusters of the stakeholder map is as follows:

* **High influence + high interest (top-right cluster):** These are the **TOP PRIORITY** stakeholders of the project. If feasible, they can be involved as project partners. In other cases, you have to make sure to align the project with their interests and to involve them into key project process during the development and the implementation as well.
* **High influence + low interest (top-left cluster):** These stakeholders should be **HANDLED WITH CARE**. They have lower ambitions to participate in the project, but it is essential to understand their needs and to serve them.
* **Low influence + high interest (bottom-right cluster):** These stakeholders **NEED YOUR HELP TO PARTICIPATE**. You have to introduce targeted cooperation activities to involve them. They may become the greatest supporters of the project.
* **Low influence + low interest (bottom-left cluster):** These stakeholders are of **LOWER PRIORITY**, but these positions may vary over time: you will need to reassess their interests and impacts later in the process.

Stakeholders can also be categorised as **internal or external stakeholders**:

* **Internal stakeholders** are people/groups/institutions directly related (interested or involved) in the processes of the project, potentially interested in the financial activities and efficiency of the project as well.
* **External stakeholders** are those who are not directly related to the project but are affected somehow by the activities or the project outcomes. They may have special interest in the value and quality of the outcomes of the project.

## **Assignment: “Innovative aspects of technology solutions”**

Please note that you will receive detailed instruction for this assignment during the training. Also, the moderators and experts will help your workgroup in collecting and analysing a wide range of innovative solutions under the specific thematic area of each thematic workgroup.

The template used for the assignment is as follows (representing a simplified TRL scale of 4 levels aggregated from the full 9 levels of the original scale):

|  |
| --- |
| **Innovative smart city solutions in the thematic field of the working group**  |
| TRL 8-9Proven solutions |  |
| TRL 6-7tested prototypes |  |
| TRL 3-5proven concepts |  |
| TRL 1-2initial concepts |  |

## **Assignment: “Indicator planning based on the Results Framework method”**

Please note that you will receive detailed instruction for this assignment during the training. Also, the moderators and experts will help your workgroup in preparing an initial Results Framework for the thematic project idea under development by each thematic workgroup.

The template used for the assignment is as follows:

|  |  |  |
| --- | --- | --- |
| **Specific objective** | **Result indicator** | **Output indicator** |
|  |  |  |

## **Optional homework assignment: “Key target groups of the project”**

The experts delivering the training session offer you the possibility to prepare an optional homework assignment and submit it to receive feed-back and thus become more familiar with the requirements of properly analyse stakeholders, identify relevant select target groups and specify their main characteristics. The process of the assignment is as follows:

1. Please give a short description of the project scenario you are targeting. It can be one of the thematic project ideas developed during the workgroup assignments of the training sessions, but you are free to select your own project idea if you feel like to. Just make sure to provide sufficient information for the experts to be able to properly evaluate your homework assignment.
2. Please put each relevant stakeholder of the project into one of the 4 segments of the influence / interest grid.
3. Based on the analysis, select the stakeholders to be targeted as target groups, and fill in their further specification, key interests and approximate size in the table below. Please only fill in data for the stakeholders selected to be target groups of the project.
4. Please submit the template to SMO until November 19 2021, who will forward it to the relevant expert.

|  |
| --- |
| **Short description of the project scenario** |
| *You are free to select any project idea, but make sure to provide sufficient information for the experts to be able to properly evaluate your homework assignment.* |
| **Influence / interest grid** |
| **High influence + low interest (HANDLE WITH CARE):** | **High influence + high interest (TOP PRIORITY):** |
| **Low influence + high interest (LOWER PRIORITY):** | **High influence + low interest (NEED HELP TO PARTICIPATE):** |

|  |  |  |
| --- | --- | --- |
| **Type of target group** | **Further specification, key interests** | **Approx. size** |
| **Academic and research institutions** |  |  |
| **Local and regional municipalities** |  |  |
| **Financial suppliers / Investors** |  |  |
| **Energy and mobility suppliers** |  |  |
| **ICT sector representatives** |  |  |
| **Citizens**  |  |  |
| **Government**  |  |  |
| **Property developers**  |  |  |
| **Non-profit organisations**  |  |  |
| **Urban planners**  |  |  |
| **Policy makers**  |  |  |
| **Experts and scientists**  |  |  |
| **Political institutions**  |  |  |
| **Media** |  |  |
| **Other: ………………..** |  |  |
| **Other: ………………..** |  |  |
| **Other: ………………..** |  |  |