

## ACTIVITY A.T2.1 ANALYSIS OF EXISTING SUPPORT TOOLS FOR ENERGY PLANNING AND PREVIOUS PROJECT RESULTS

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Version 1  
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# Analysis of existing support tools for energy planning and previous project results - Introduction

The ENES-CE project is dedicated to the development of a support toolbox for local energy planning. The toolbox will comprise a combination of analytical (toolbox) and procedural tools (guidelines) intended to support rational and sustainable decision-making of public authorities and address citizen engagement as a cornerstone for sustainability of local energy actions. This section is going to give a brief overview of existing tools and guidelines for integrated energy planning, analysis of investments and evaluation of implemented citizens projects. This overview will be the basis for creating ENES-CE tools including co-design methods, community energy investment guidelines and communication strategies for engaging citizens.

## 1. Analysis of existing support tools

Energy planning is usually conducted in isolation from local users of energy services. Traditionally Sustainable Energy Action Plans (SEAP) and Sustainable Energy and Climate and Actions Plans (SECAP) are written by experts in energy, who however do not take into account the social acceptance of proposed measures. Moreover, regular citizens are regarded as an observer in the process but not as an active participant. The co-design, technical and communications tools that will be developed in ENES-CE will be key in bridging the existing gap between energy experts and users. Within this short brief we present the existing tools that are in use today around the world. The purpose of this is threefold:

- 1) make use of the existing tools
- 2) learn from their implementation
- 3) make improvements in the tools that will be used within ENES-CE.

## 2. Methodology

All project partners were invited to fill in a excel based list of existing and known support tools. The support tools are sometimes local ones and sometimes national or international ones. The partners having support tools send back their list which were evaluated like described in the following chapters. Summarized about 40 different tools were presented by the project partners which were clustered into 4 tool categories.



### 3. Co-design tools

Co-design is usually defined as a tool or method that helps to achieve innovation outcomes. The aim is to gather people with different backgrounds and knowledge who will together create different programs and tools. This approach has a strong argument that engaging end users in the design process will result in more effective designs and solutions.<sup>1</sup>

Having that in mind, we did a specific research where we want to present current co-design tools, highlighting the ones that touch community engagement topics. The table below is showing some examples developed for different projects and purposes. Each of the toolkits represents an adaptable approach for designing processes tailored to specific issues in communities.

Table 1: Co-design toolkits (examples)

Toolkit	Project	Short description	Relevance for ENES CE
Designing technologies for and with children <sup>2</sup>	This toolkit is a part of a PhD research funded by KU Leuven (LUCA) and UHasselt (PXL-MAD)	Co-design toolkit to design future technologies and practices for children with children.	The tool can be used to generate different ideas and co-develop knowledge at the very early stages of the design process where the designed problem is still being defined.
Innovation map - Mapping, exploring and designing sustainable business models for energy access <sup>3</sup>	A part of a PhD research conducted at Brunel University London by Silvia Emili, within the “Learning Network on Sustainable energy system” project (EU funded, Edulink II, Oct 2013-Oct 2016) and then in the “Design and innovation tools to support SMEs in developing sustainable Product-Service Systems for energy access in African contexts” project (EPSRC Global Challenges Research Fund, Oct 2016-Feb 2017)	A tool for mapping out and classifying product service system models applied to distributed renewable energy, positioning company’s offers, analysing competitors and exploring new opportunities. The tool is intended to be used in rural settings in developing countries.	The tool can be used by the ENES CE project to map out different business models - types of citizen energy initiatives ranging from coop to regular SME, that jointly invest into a renewable energy, energy efficiency, waste etc. project.
Design framework and cards <sup>4</sup>		A tool that supports the idea generation and concept development of sustainable business models and that visualises all elements that need to be considered in the design process.	ENES-CE can use this tool to design set of cards and canvas. Each group of cards such as services, products or citizens will have an intro card that specifies what information can be found in there. The card model enables visualisation of all elements that need to be considered in the design

<sup>1</sup> <https://zum.io/wp-content/uploads/2010/06/Design-thinking-and-sustainability.pdf>

<sup>2</sup> <https://soc.kuleuven.be/mintlab/blog/wp-content/uploads/2017/01/CoDesign-Toolkit-Van-Mechelen-2016-highRes-II.pdf>

<sup>3</sup> <https://www.se4alldesigntoolkit.com/>

<sup>4</sup> <https://www.se4alldesigntoolkit.com/>



			process.
		Visualising and communicating sustainable business models for energy access	The tool can be used to visualize specific problem solutions. It is a set of icons, describing flows and processes in certain municipality. This tool will help stakeholders to get better understanding of their roles in the system.
Community planning toolkit <sup>5</sup>	Developed by Community Places through the support of the BIG Lottery Fund 2014	Toolkit focuses on quality and effectiveness, process planning and designing engagement tailored to the particular issue, level of participation to be achieved, timeframe and range of stakeholders affected.	The tool itself uses two different methods: dialogue designer and process planner. Both can be applied to ENES-CE project. Dialogue designer guides you through 3 key steps that can help to detect objectives, target audience and the sensitivity of the ENES-CE project. Process planner can help ENES-CE with guidance through 6 stages of the project: scope, purpose, participants, context, follow up and results.
Community engagement toolkit for planning <sup>6</sup>	The State of Queensland, Department of State Development, Manufacturing, Infrastructure and Planning	The aim of the tool is to help local governments to develop community engagement strategies for preparing new local planning instruments and amending existing local planning instruments.	This toolkit can be used as a central location for information about current project status and case studies. All this can serve stakeholders and citizens to be informed at every stage of the project.
Community engagement toolkit <sup>7</sup>	The toolkit was prepared by the social planning and research council of British Columbia	The toolkit was designed for municipal social planners and other municipal planning staff that are thinking about how to design and implement a community engagement process that is inclusive, accessible and results-oriented.	The ENES-CE project can develop a community engagement matrix based on the engagement toolkit example. The matrix can include information on the different types of expected impact.

<sup>5</sup> <https://www.communityplanningtoolkit.org/sites/default/files/Engagement.pdf>

<sup>6</sup> <https://dilgpprd.blob.core.windows.net/general/community-engagement-toolkit.pdf>

<sup>7</sup> <https://www.sparc.bc.ca/wp-content/uploads/2017/03/community-engagement-toolkit.pdf>



## 4. Technical tools

Second part of the toolbox is going to be focused on technical, environmental, legal and economic aspects of such projects. First of all, the main focus in this part is going to be on community energy investment guidelines. Particularly this refers to step by step approach for community investments, but also participatory business models for citizen energy projects (with evaluation tool) - where citizens are included in the projects ownership or have a large say in its development (this would depend on individual cases).

Technical aspects of the project are the basis in forming economic, organisational and environmental evaluation. Table 2 is showing some of the existing calculators that can be very useful in developing ENES-CE's own tool.

Table 2: Technical toolkits (examples)

Toolkit	Project / Developed by	Short description	Relevance for ENES CE
Levelled Cost of Energy Calculator - LCoE calculator <sup>8</sup>	Danish Energy Agency	A tool to estimate and compare the socio-economic electricity production costs in a simplified manner using localized data and estimates.	As the tool has an ability to compare different electricity production technologies, the ENES-CE can use it when evaluates pilot projects and their relevance for the local community. However this should be adjusted for local conditions.
Cash Flow Opportunity Calculator <sup>9</sup>	Energy Star - U.S. Environmental Protection Agency voluntary program	The calculator can accelerate the installation of energy efficiency projects by addressing the questions about buying energy efficiency equipment, how much can be bought with anticipated savings and when is the best time to buy it.	The Cash Flow Opportunity Calculator helps inform strategic decisions about financing energy efficiency projects. Using the tool, you will be able to estimate how much new equipment you can finance using anticipated savings, as well whether you should finance now or wait for a lower interest rate.
Renewable Energy Data Explorer <sup>10</sup>	U.S. Agency for International Development (USAID) and the U.S. Department of Energy's National Renewable Energy Laboratory (NREL)	The flagship tool of the RE Explorer, facilitates renewable energy decision making, investment, and deployment through a dynamic, online analytical tool.	This tool can help planners to identify and visualize potential renewable energy zones, through the evaluation of accessibility and feasibility (technical potential) as well as energy resource quality and quantity.

<sup>8</sup> <https://ens.dk/en/our-responsibilities/global-cooperation/levelized-cost-energy-calculator>

<sup>9</sup> <https://www.energystar.gov/CFOcalculator>

<sup>10</sup> <https://greeningthegrid.org/Renewable-Energy-Zones-Toolkit/tools-templates>



Multi-criteria Analysis for Planning Renewable Energy - MapRE <sup>11</sup>	Lawrence Berkeley National Laboratory (LBNL)	It provides a framework for the systematic identification and valuation of areas for renewable energy development, focusing mainly on solar and wind technologies in developing countries.	The MapRE initiative can provide local and regional officials and other stakeholders with information about multiple criteria for possible renewable energy projects. This means improving of the planning of low-carbon, cost-effective, socially and environmentally responsible energy systems.
System Advisor model (SAM) <sup>12</sup>	U.S. Agency for International Development (USAID) and the U.S. Department of Energy's National Renewable Energy Laboratory (NREL)	A performance and financial model designed to facilitate decision making for people involved in the renewable energy industry including policy analysts, technology developers, project managers.	ENES-CE can use SAM to estimate costs of potential pilot projects and evaluate their economic potential. Based on this it is going to be easier to decide in which project to invest.

## 5. Communication tools

The communication toolkit serves as a guidance on communicating with citizens about particular project. That's why reaching them effectively requires development of specific approaches.<sup>13</sup> It is important to detect what tools are going to be used on the project to reach and involve the community.

There are two starting points that have to be discussed on the very beginning<sup>14</sup>:

- content development
- communication channels.

Once stakeholders decide about the content and appropriate communication channels it has to be decided which tools are the most suitable. The next table is showing project examples that used communication tools that can be applied on the ENES-CE project.

<sup>11</sup> <https://greeningthegrid.org/Renewable-Energy-Zones-Toolkit/tools-templates>

<sup>12</sup> <https://greeningthegrid.org/Renewable-Energy-Zones-Toolkit/tools-templates>

<sup>13</sup> [https://civitas.eu/sites/default/files/brochure\\_toolkit\\_on\\_marketing\\_final4print\\_20110913.pdf](https://civitas.eu/sites/default/files/brochure_toolkit_on_marketing_final4print_20110913.pdf)

<sup>14</sup> <https://www.oecd.org/gov/Open-Government-Guide.pdf>



Table 3: Communication toolkit (examples)

Toolkit	Project / Developed by	Short description	Relevance for ENES CE
Reaching the citizen: Toolkit on effective communications and marketing <sup>15</sup>	The Civitas initiative co-financed by the European Union	This toolkit provides guidelines on communicating with citizens about sustainable urban mobility options. The information and advice contained in this toolkit is designed to assist local, regional and national authorities with various communication considerations.	ENES-CE project can use this tool to learn how to engage citizens in dialogue on certain topic/s. Materials can help with development of a strategic communication plan, organization of events and workshops and creating an online and offline media materials.
Communicating open government - A how-to guide <sup>16</sup>	OECD, Open Government Partnership	The guide has been developed for individuals tasked with explaining, encouraging, and building support for open government, understood as a culture of governance that promotes the principles of transparency, integrity, accountability and citizen participation for democracy and inclusive growth.	It can be used for the public officials, e.g. municipalities that are being part of the ENES-CE project, in charge of implementing strategies.
Digital Communication Toolkit: Best practices for organisations in India <sup>17</sup>	Developed by: Alyssa Jordan, Katelin Moran, Mariam Siddiqui, Veronica Thomas, Mehak Jain, Daniella Rivera-Burrell, Mike Newton-Ward, Sarah Parvanta, Ishu Kataria, & Sandra Travasso	This toolkit provides a step-by-step guide to help Indian organisations navigate and fully leverage digital communication activities for public health.	Since the toolkit incorporates best practices, case studies and expert recommendations on communication, it can help the ENES-CE to decide which communication channels are the most suitable for the project.
Energy Help desk <sup>18</sup>	Municipality of Forlì	Give information about energy efficiency, renewable energy, incentives, regulation	

<sup>15</sup> [https://civitas.eu/sites/default/files/brochure\\_toolkit\\_on\\_marketing\\_final4print\\_20110913.pdf](https://civitas.eu/sites/default/files/brochure_toolkit_on_marketing_final4print_20110913.pdf)

<sup>16</sup> <https://www.oecd.org/gov/Open-Government-Guide.pdf>

<sup>17</sup> <https://pdfs.semanticscholar.org/4e86/10a25d02e501dd6b8bbe4a8a0bb1ce7f8d80.pdf>

<sup>18</sup> <http://www.comune.forli.fc.it/servizi/menu/dinamica.aspx?idArea=72479&idCat=229815&ID=229815>



## 6. Conferences

Conferences on energy planning and energy usage are of special interest for different stakeholders. There is a wide variety of people addressed from the private house owner to technicians up to investors and politicians. In the following to conferences the willingness for investments in energy projects is significantly higher - so the approach of conferences as described in WP T1 is very mandatory for the ENES-CE project.

Table 4: Conferences (examples)

Toolkit	Project / Developed by	Short description	Relevance for ENES CE
Energie für alle Woche <sup>19</sup>	Energy and solar club Pfaffenhofen	This annual conference addresses all kind of citizens from interested public to investors	ENES-CE project can learn how to successfully establish an annual energy conference.
Conferences on energy, air quality, residential thermal plants or boilers <sup>20</sup>	Municipality of Forlì	Give information and raise awareness about energy efficiency, renewable energy, incentives, regulation	These conferences address technical designers and specialized employees

## 7. Conclusion

The practice showed that existing energy planning tools are helping project stakeholders with project development and improving final results. Following best practices ENES-CE project will use some of the ideas for implementing tools that showed as successful ones and will develop a new toolbox within the project. The toolbox will be tested and refined through the implementation of selected pilot projects, and it will be published on an on-line platform and as a manual.

A detailed analysis of investments and the estimation of implemented citizens projects resulting out of the existing tools was only possible in qualitative figures and not in number of projects. However each tool has a positive impact on the path towards sustainability.

<sup>19</sup> <https://esv-paf.de>

<sup>20</sup> [http://www.comune.forli.fc.it/servizi/notizie/notizie\\_homepage.aspx](http://www.comune.forli.fc.it/servizi/notizie/notizie_homepage.aspx)