

A Guide to Solar Road Maps



What is a solar road map?

A solar road map creates a strategy and a delivery plan to accelerate the use of solar energy in a defined area. It is usually created by local government organisations and often part of an Energy Plan which considers broader issues of energy demand and other renewable energy technologies and targets.

This methodology is a guide to help organisations to create their own Solar Road Map. It will help you to consider the actions and issues needed to create a Solar Road Map, according to your local circumstances, resources and objectives. Use the points which are most relevant for your area.

This solar road map guide was created under the SOLARISE Interreg 2 Seas programme by Brighton & Hove City Council with the collaboration of the SOLARISE partners. The goal of SOLARISE is to accelerate the adoption of solar energy in the 2 Seas territories through innovative pilot solar installations. The project brings together 12 partners and 14 observers with different but complementary profiles in France, UK, Belgium and the Netherlands.

The solar road maps of SOLARISE partner municipalities – Brighton & Hove City Council, Fourmies, Heerhugowaard, Middelburg, Middelkerke and Zoersel – are available as case studies [here](#).

The SOLARISE programme also supports innovative solar energy [pilots](#) projects in social housing, historic buildings, and public buildings; academic research on solar energy in [Living Labs](#); and developed [guidelines](#) for overcoming technical, legal, economic and social barriers to increased solar energy.

Stakeholders

Identifying and engaging the right stakeholders is essential for gathering evidence, building collaboration, and delivery of the solar road map. The support of local communities, especially for large projects, is crucial to the successful design and delivery of solar energy projects.

<p>Identify key stakeholders</p> <ul style="list-style-type: none"> • Who are the decision makers? • Who is needed for successful delivery, including funding? • Who can provide evidence and support development of policy? • Who needs to be informed? • Who might be an obstacle? 	<p>Local authorities</p> <p>Government departments, regional and national (funding, policy development)</p> <p>Universities (evidence, training, policy development)</p> <p>Housing corporations and builders / developers (sites for solar energy installations)</p> <p>Solar energy suppliers, installers</p> <p>Citizens and affected individuals and organisations</p>
<p>Engage stakeholders to ensure their support and involvement</p>	<p>Raise awareness of benefits (economic, environmental, social and others)</p> <p>Address negative perceptions about proposed development</p>
<p>How will you communicate with stakeholders?</p>	<p>Regular meetings – neighbourhood or city-wide?</p> <p>Workshops, events, tours, webinars</p> <p>Newsletters, social media</p> <p>Project planning</p>
<p>How will you communicate with the community?</p> <ul style="list-style-type: none"> • Plan this in from the start 	<p>Newsletters, news releases, social media, videos</p> <p>Events, launches, tours</p> <p>Residents’ meetings, planning events</p>
<p>Case study</p>	<p>Brighton & Hove City Council convened an Energy Working Group with representatives from local government, community energy, and businesses, to inform and develop the Energy Plan and Solar Road Map</p>
<p>Resources</p>	<p>WVI is the regional Coordinator CoM for 29 West Flemish municipalities and write their SECAP for CoM2030 : https://www.wvi.be/nl/werkvelden/klimaat-en-energie/klimaat-uw-lokaal-beleid</p> <p>In Flanders, ODE (organisatie duurzame energie) is the membership organisation for sustainable energy. They have a specific pillar for solar energy : https://www.pv-vlaanderen.be/</p>

Policy Drivers

Why is the organisation developing a Solar Road Map? What targets and strategies will it help to meet?

<p>International and national policies form the background and context for action</p>	<p>CO2 and greenhouse gas reduction targets – national, regional and local</p> <p>Strategies for decarbonising transport, heat, electricity, energy efficiency, infrastructure, digital, green growth etc</p> <p>Regulation and subsidies for solar energy</p> <p>Fuel prices and taxes (are they subsidised?) and future forecasts of prices</p> <p>Recovery from Covid-19</p>
<p>Align the solar road map to relevant local strategies and targets</p> <ul style="list-style-type: none"> • Is your organisation committed to climate or energy targets, for example, the Covenant of Mayors or the Carbon Disclosure Project? • Is there a local energy plan or renewable energy targets? • How does the solar road map connect to the energy plan? • Express the benefits of wider solar deployment for the local environment, society and economy 	<p><i>Environmental –</i></p> <ul style="list-style-type: none"> • Cutting carbon emissions • Renewable energy targets • Covenant of Mayors, Carbon Disclosure Project <p><i>Social –</i></p> <ul style="list-style-type: none"> • fuel poverty • housing energy efficiency performance • access to renewable energy <p><i>Economic –</i></p> <ul style="list-style-type: none"> • income from solar energy installations • cheaper electricity for public buildings • Supporting local businesses by cutting fuel costs and increasing productivity • Creating and maintaining jobs, enhancing training and skills • Procurement from local supply chain
<p>Innovation</p>	<p>interoperability, creating energy networks, strategic decisions on grid infrastructure</p> <p>Technical innovation in solar panel design and applications (eg solar panels for vertical walls, rooftile shapes)</p> <p>Innovations that reduce cost of solar panels and installation</p>
<p>Funding</p>	<p>How are existing installations funded?</p> <p>Can the Solar Road Map help to attract investment by demonstrating a pipeline of investable projects, and aggregating projects to create a larger volume of work?</p> <p>How will available funding and/or subsidies inform the ambition of the Solar Road Map? Are there innovative</p>

	<p>funding models which could help?</p> <p>How will subsidies change in the next 2 years?</p>
Case study	<p>Fourmies Solar Road Map establishes a baseline and 3 scenarios to develop solar energy for 2030 and 2050</p>
Resources	<p>SOLARISE Teaching Toolkits will cover a range of technical issues suitable for policy makers, students and the general public (available 2022).</p> <p>SOLARISE Guidelines for overcoming technical, legal, economic and social barriers to increased solar energy https://www.interregsolarise.eu/downloads-wp1/</p> <p>Local Area Energy Planning https://es.catapult.org.uk/reports/local-area-energy-planning-the-method/</p> <p>The City Journey – Global Covenant of Mayors https://www.globalcovenantofmayors.org/journey/</p>

Scoping and vision

Focusing the activities that the Solar Road Map will include.

Scale of action proposed in Solar Road Map	<p>Locations - Public buildings / businesses / residential / rural</p> <p>Scale - Solar farms / rooftop solar</p> <p>New technologies (eg wall-mounted solar PV)</p>
Geographical area for Solar Road Map	<p>Neighbourhood / city / region</p> <p>Boundaries of geographical area</p>
Set your vision	<p>Summarise the key objectives of the Solar Road Map</p>
Set your objectives and targets	<p>Environmental, social and economic objectives</p> <p>Alignment to other strategies and targets</p>
Case study	<p>Zoersel's Energy Plan includes a strong vision for the future of sustainable energy in their town.</p>
Resources	<p>European legislation on renewable energy communities (REC) has e.g. a geographical or technical perimeter that must be defined : https://ec.europa.eu/energy/topics/markets-and-consumers/energy-communities_en</p> <p>Covenant of Mayors Sustainable Energy and Climate Action Plan guidance</p>

The evidence base

This is the opportunity to investigate the whole local energy system and identify the challenges and opportunities of accelerating solar power. How can solar energy be deployed effectively and where?

<p>Map solar resources, existing installations and opportunities</p>	<p>Use a spatial planning approach to identify suitable sites and clusters of potential projects</p> <p>Consider different locations, eg business parks, landfill sites, reservoirs, industrial locations</p> <p>Identify characteristics of the Solar Road Map area: geographical, social and economic features</p> <p>Map existing solar energy installations and solar energy projects which are in the process of being delivered.</p>
<p>Investigate the local energy system, future local energy scenarios and carbon reduction scenarios</p>	<p>Does the area have an Energy Plan which identifies and forecasts energy demand, consumption and production?</p> <p>Are there energy scenarios which forecast demand for solar energy? Are these realistic targets for the Solar Road Map?</p> <p>How can solar energy operate together with and enhance other renewable technologies, eg heat pumps, electric vehicles, hydrogen?</p>
<p>Understand constraints and barriers to solar energy installations</p>	<p>Is a local supply chain, installation companies and skilled workers in place?</p> <p>Is digital capacity adequate to enable smart grid connections?</p> <p>Ownership / leasing business models in place</p> <p>Are planning regulations an obstacle</p> <p>Availability of subsidies for solar energy and funding models</p> <p>How does the solar road map align with the Sustainable Heating Plan? Can solar energy link to heat pumps?</p>
<p>What solar energy technologies are available and is there local expertise in using / installing them?</p>	<p>SOLARISE Living Labs have investigated a range of technologies and efficient deployment in real-world settings.</p>
<p>Case study</p>	<p>Middelburg is looking at innovative ways to install solar thermal on historic buildings, while respecting the heritage and visual impact.</p> <p>Heerhugowaard mapped the neighbourhood around the station, starting with existing buildings and likely future changes. Future potential energy consumption for heat, cooling and electricity was used to inform scenarios for meeting the energy demand using different energy sources and infrastructure arrangements (solar, heatpumps, district heating, etc.)</p>

	<p>Middelkerke carried out a review of potential locations to select the most appropriate and efficient</p> <p>Find these case studies here</p>
Resources	<p>SOLARISE Living Labs on solar energy https://www.interregsolarise.eu/pilots/living-labs/</p> <p>BISEPS-project in 2 Seas : http://www.biseps.eu/step-by-step-guidebook/. The project developed a methodology for increasing the use of renewable energy on existing business parks/industrial estates.</p> <p>BISEPS also developed a tool that can be used outside business parks : http://www.biseps.eu/react/</p>

Leading and implementing delivery

How can the organisation – often a municipality – drive forward delivery of solar energy projects and help partners too?

Delivery plan to support action	<p>Create a programme of projects with short, medium and long-term deliverables to achieve the plan objectives</p> <p>Include some projects that will build capability and experience</p> <p>Deploy market-ready solutions for quick wins</p> <p>Test and demonstrate new innovations</p>
Get top-level commitment from decision makers	<p>Strategic</p> <p>Investment</p> <p>Facilitation</p>
Embed Solar Road Map in relevant local strategies	<p>For example: local plans for Energy, Fuel Poverty, Zero Carbon, spatial planning, Sustainable Heating Strategy</p> <p>To gain additional support and funding for key programmes and projects</p>
Continue to build partnerships that have been helpful in developing the Solar Road Map	<ul style="list-style-type: none"> • Electricity distribution companies - Forward planning for electricity demand and renewable generation • Community energy companies – projects on public buildings and small-scale innovation • Housing corporations, estate developers and managers - New house building developments and potential solar energy sites – New business parks and industrial estates • Local academia and consultants- Access to research and innovation
Planning permissions	<p>Are there planning or zoning permissions or building standards that are required?</p>

	<p>Policies, regulations and required permits and procedures for historical monuments and buildings</p> <p>What is the timescale, costs and documentation to apply for planning permissions?</p> <p>Are building regulations or standards required?</p>
Identify skills needed to deliver projects	<p>Are there skills gaps or training needs, or supply chain weaknesses locally?</p> <p>Who could help to create training plans, apprenticeships and courses?</p>
Learning from each other	<p>Each phase of the Solar Road Map can learn from previous phases and projects.</p> <p>Build in shared learning between participants, wider stakeholders and academics.</p>
Case study	<p>Sussex Innovation Forum on Energy and Water, sponsored by the University of Sussex</p> <p>Solarise Living Labs at Portsmouth University and KULeuven.</p>
Resources	<p>Solarise Solar Training Toolkit (available 2022)</p> <p>Building permits</p> <p>https://www.solarroadmap.com/about/my-roadmap/</p>

Monitoring

Referring back to the objectives of the Solar Road Map, how will these be measured and reported and are methods in place to capture the data needed?

<p>What is measured depends on your Solar Road Map objectives</p> <p>How does the Solar Road Map contribute to environmental, social and economic objectives?</p> <p>Build in monitoring arrangements from the start.</p>	<p>CO2 reduction</p> <p>Electricity generation kWh</p> <p>Number of residents / businesses with access to renewable energy</p> <p>Number of jobs / training places</p> <p>Investment in renewable energy</p> <p>Process monitoring – learning from delivery and existing projects</p>
<p>Who is the monitoring reported to?</p> <p>How often?</p>	<p>What information is needed for annual reports, communications, news and promotional campaigns?</p>
Resources	<p>Monitoring results of the SOLARISE living labs and pilots case studies (available 2022)</p>