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100% RENEWABLES SOLUTIONS PACKAGE

Crowdfunding community-scale renewable energy projects



This solution is part of a package of solutions meant to guide local and regional governments in implementing a local renewable energy transition by providing guidance on mechanisms, applications or technologies that can help accelerate their climate and energy action.

It was produced as part of the 100% Renewables Cities and Regions Roadmap project, which supports nine cities and regions across Argentina, Indonesia and Kenya to develop bankable renewable energy projects and in-depth local strategy and action plans to achieve one hundred percent renewable energy. The 100% Renewables Cities and Regions Roadmap project is implemented by ICLEI – Local Governments for Sustainability and funded through the International Climate Initiative (IKI), which is implemented by the Federal Ministry for Economic Affairs and Climate Action (BMWK) in close cooperation with the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) and the Federal Foreign Office (AA).

DISCLAIMER

All cities are unique. The Solutions Gateway has been developed as an advanced knowledge catalogue to provide an overview of possible Low Emissions Development Solutions. The Solutions and Packages it contains provide guidance on general conditions, which may not correspond to the existing conditions in your city or jurisdiction. The consultation and use of the Solutions Gateway does not waive the need for the Local Government to assess the feasibility of a Solution or Package in the local context in its city or jurisdiction, prior to implementation. Please note that the impacts, benefits and co-benefits indicated are generally valid but may not materialize in particular circumstances.

ABOUT SOLUTIONS GATEWAY

[Solutions Gateway](#) is an online resource platform for Local Governments where they will be able to find possible Low Emissions Development (LED) Solutions for their cities.

In the context of the Solutions Gateway, Solutions are processes, or groups of actions, which Local Governments can implement to deliver climate change mitigation results and enhance local sustainable development. Taking an integrated approach, and focusing on Local Governments usual responsibilities and roles, Solutions include core actions as well as enabling and multiplying actions essential to maximize their effectiveness and efficiency. These include policy, regulatory, governance, capacity building, awareness raising, stakeholder engagement, etc.

ABOUT ICLEI – LOCAL GOVERNMENTS FOR SUSTAINABILITY

ICLEI – Local Governments for Sustainability is a global network working with more than 2,500 local and regional governments committed to sustainable urban development. Active in 125+ countries, ICLEI influences sustainability policy and drives local action for low emission, nature-based, equitable, resilient and circular development. ICLEI's Members and team of experts work together through peer exchange, partnerships and capacity building to create systemic change for urban sustainability.

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1. INTRODUCTION

Crowdfunding is where several individuals contribute small sums of money in order to fund a project. Given the low risk that each person takes on, crowdfunding can be an innovative financing tool, including for local renewable energy (RE) projects [1]. They can also help involve the local community in various ways, increasing buy-in and ensuring the long-term sustainability of the project [2]. This solution addresses the use of crowdfunding for the local energy transition, and how local and regional governments (LRGs) can take advantage of it while protecting the best interests of their communities.

1.1 RELEVANCE

A rapid transition away from fossil fuels is central to achieving the goals of the Paris Agreement. This goal implies the need for huge investments in RE technologies and for policy-making at the local, regional and national levels to channel this investment to where it is needed most, and to ensure that this energy transition takes place in a just and inclusive way. It is estimated that USD 275 trillion in cumulative investments in renewable energy is needed by 2050 to achieve the aforementioned objectives [3].

Private finance is central. To convince private investors to invest in local or community renewable energy projects, certain measures could be deployed to reduce the perceived risks of investing in them. It is also important to bring communities on board for the smooth implementation of a project.

Crowdfunding can be a real asset in making these projects attractive for both parties. First, it can fill the financing gap for the initial investment, and prove the social support of the project [4]. For funders, it can also provide a higher return compared to traditional banks [5]. The large numbers of funders and the relatively low amount of money invested redistributes the risk—crowdfunding may thus improve access to finance for climate projects globally [6].



1.2 MAIN IMPACTS

- Reduce the financing gap and perceived risk for renewable energy projects
- Through successful RE projects—reduce emissions, increase energy security
- Strengthen local communities by increasing awareness, skills, confidence and cooperation
- Improve the acceptance of RE projects through the involvement of citizens, making the decision process more transparent and increasing mutual understanding between different stakeholders
- Develop access to clean energy and electricity

1.3 BENEFITS

- RE projects can be made more attractive to other investors if they already have an up-front investment commitment, such as through crowdfunding [7]. The overall risk of the project is reduced.
- Access to public-sector funding could be streamlined, as sometimes grants can require a matching contribution, which can be met through crowdfunding [8].
- Allowing small projects coming from the community to be financed—these are often overlooked by investors, even if they serve an important need.
- Involving communities in projects directly or indirectly can increase community acceptance of projects, reducing overall project risk and highlighting other challenges in the community that can be addressed simultaneously [6, 7, 8].
- Promoting citizen participation in the energy transition can increase social ties and community resilience [4, 8].
- LRGs and citizens can learn a lot from the financing and development of small RE projects stemming from the community, resulting in overall improved capacities [4, 8].
- Local employment and skill development in RE technologies could be fostered through such projects [6].

1.4 SUGGESTED INDICATORS FOR MONITORING RESULTS

- Reduction of the LRG's annual GHG emissions [tCO₂e/year]
- Number of RE projects funded by crowdfunding at the local level [number]
- Number of citizens taking part in RE projects at the local level [number]
- Percentage of community contribution to the total project amount [currency/project]
- Investments in RE in the region [currency/year]
- RE installed capacity in the region [MW]
- Electricity generated from RE sources [GWh]

1.5 TYPICAL LOCAL GOVERNMENT ROLES

- | | |
|-----------------------------------|---|
| • Policy maker | • Coordinator |
| • Legislator/regulator | • Mobilization and stakeholder engagement |
| • Planner | • Advocate |
| • Education and awareness raising | • Communicator |

2. INTEGRATED SOLUTION OVERVIEW

	Enabler Actions	Required Actions	Multiplier Actions
Policy	<ul style="list-style-type: none"> • Develop or collaborate with existing crowdfunding platforms to create a city-specific platform • Communicate clearly the LRG's energy and climate targets, as well as the amount of investments needed 	<ul style="list-style-type: none"> • Promote policies and/or guidelines for platforms/projects to follow, such as information disclosure on the social and environmental impacts of the projects, risks for crowdfunders, information on the project developers etc. • Develop good practices for crowdfunding platforms when dealing with local RE projects 	<ul style="list-style-type: none"> • Call for projects that contain clauses providing benefits for the local community, such as local job creation, training opportunities etc. • Advocate, along with other LRGs, for laws at the national level that frame and promote guidelines around crowdfunding • Investigate the feasibility of incentives for crowdfunding at the local, regional and national level such as tax credits, deductions, or exemptions, as well as grants and financial support [1] • Advocate for the implementation of enabling measures such as feed-in tariffs to encourage investments in certain RE projects
Stakeholders and Awareness	<ul style="list-style-type: none"> • Communicate effectively about crowdfunding initiatives [2] • Support citizens' initiatives by promoting them on an LRG-affiliated website [8] 	<ul style="list-style-type: none"> • Develop a clear information campaign with a clear indication of resources, steps etc. to encourage citizens to get involved 	<ul style="list-style-type: none"> • Build an in-house crowdfunding mechanism to attract investors [8] • Facilitate meetings/exchanges between communities and potential investors
Governance	<ul style="list-style-type: none"> • In the case of an equity-based model, create an adapted governance framework for community-owned RE projects as a reference • Create a central point for addressing complaints or grievances about local crowdfunding 	<ul style="list-style-type: none"> • Advocate for the national government to put in place supporting regulatory and legal frameworks for RE investments by communities • Collaborate closely with development banks, climate funds, NGOs etc. to facilitate channeling the finance to the project 	<ul style="list-style-type: none"> • Invest in capacity-building for local officials on crowdfunding processes, community energy projects and RE projects, or hire experts where needed

	Enabler Actions	Required Actions	Multiplier Actions
Capacity Building	<ul style="list-style-type: none"> • Create a repository or provide access to it on various crowdfunding initiatives, resources, best practices and relevant organizations 	<ul style="list-style-type: none"> • Provide training and enabling information to citizens on how to set up crowdfunding projects 	<ul style="list-style-type: none"> • Ensure that access to information is equitable, and that those attending capacity-building sessions are representative of the community
Technical	<ul style="list-style-type: none"> • Engage experts where possible to provide technical advice to citizens on RE technologies, business models and the risks involved in crowdfunding • The LRG can create a separate legal entity (known as a Special Purpose Vehicle) for the RE project if necessary, in order to isolate the LRG from financial risk 	<ul style="list-style-type: none"> • Identify reliable crowdfunding platforms to assure lenders that the money invested will be committed to the energy transition, including through labels, partnerships and other such measures [6] 	<ul style="list-style-type: none"> • Create a reporting platform to centralized and share information on the different projects that were undertaken • Consider leasing public land at a lower rate to community-led RE projects
Finance	<ul style="list-style-type: none"> • Collaborate with crowdfunding platforms on managing/ creating civic fundraising [2] 	<ul style="list-style-type: none"> • Consider matching fund schemes for crowdfunded RE projects to encourage the involvement of citizens and reduce risk [9] • Mobilize grant funding from national and international sources to support projects. 	<ul style="list-style-type: none"> • Develop and implement strategies to encourage more public-private partnerships • Investigate how the LRG can use resources available to it for risk-mitigation for projects



3. WORKFLOW /PROCESS PHASES

3.1 PREPARATION

- Analyze the national framework for crowdfunding and philanthropic platforms, and requirements for projects
- Analyze the risks involved in crowdfunding projects and determine which approach is the most suited for a particular community
- Liaise with local energy developers to understand the project development cycle and its constraints, risks, financing issues etc.
- Identify suitable RE sites, as well as the scale, e.g. rooftop PV, agrivoltaics, free-field PV

3.2 COMMUNICATION

- Create campaigns for how communities can be involved in local RE development
- Provide easy access to information on how to get involved in crowdfunding, as well as the risks involved, in line with national-level frameworks for information disclosure for investments etc.
- Educate citizens on the types of contracts, business models, financing required, risks etc.

3.3 IMPLEMENTATION

- Collaborate with existing crowdfunding platforms where possible
- Collaborate with local energy developers to identify gaps and spread awareness about crowdfunding
- Identify certain projects that can be low-risk, in order to increase community trust and awareness in the crowdfunding method
- Identify various de-risking measures for the investment

3.4 MONITORING

- Monitor the performance of the chosen project closely, and take action where needed in order to maintain community trust in the project and the financing method
- Outline ways citizens can get recourse in case they encounter any problems, aligned with general consumer and investor protection laws

4. REALITY-CHECK

This solution is applicable in the following situations:

- When LRGs want to meaningfully engage their community in the local energy transition, and provide other benefits
- When LRGs want to diversify the sources of finance available for the development of RE projects in their territories
- In areas where there is a financing gap, crowdfunding can be used to bridge it or to reduce overall project risk
- In cases where a community is interested in developing decentralized renewable energy solutions for its own interests

4.1 REQUIRED PRE-CONDITIONS

- Favorable national legislation on crowdfunding and similar platforms
- Trust in public institutions
- Effective communication campaigns and established channels
- Local tradition of citizen participation
- Policies supporting the capacity building of local stakeholders
- A favorable business environment and investors interested in developing RE projects in the region
- Established or growing supply chain for RE technologies and services
- Sufficient technical knowledge on RE technologies and a qualified workforce

4.2 SUCCESS FACTORS

- Well-defined roles and responsibilities between the municipality and the citizens in the development of RE projects
- Well-established crowdfunding platforms and legal and regulatory protections
- Adequate time and budget allocation for programs fostering crowdfunding at the local level
- Effective communication on how citizens can get involved in RE projects, as well as the risks involved
- Business models adapted to crowdfunding
- Active citizen participation and engagement through an accessible and inclusive process
- Openness and responsive to feedback
- Ongoing follow-through and monitoring, as well as grievance redressal

4.3 FOLLOW-UP NEEDED AND/OR RECOMMENDED

- Define a robust monitoring and evaluation mechanism to assess the utility of crowdfunding, and to incorporate any feedback from citizens
- Continue building the capacity of citizens on financing community initiatives and knowledge of RE technologies
- Continue the development of technical skills in public-private partnerships and business models in the field of RE for LRG officials
- Continue to develop a favorable local and national framework to spur the development of trustworthy and transparent crowdfunding platforms, and to adapt their use for local RE projects

4.4 BARRIERS

- Government and personnel changes can affect the continuity of programs as well as the level of engagement from the municipality
- Crowdfunding projects with higher targets tend to succeed less than the ones asking for smaller amounts of money [9]. Therefore, the LRG should consider the utility of crowdfunding only for certain kinds of projects
- Trust is very important for crowdfunding campaigns and citizen participation. In high-trust countries, citizens are more inclined to take part in programs set up or supported by the local government [9]. LRGs in low-trust countries could face more difficulties; building trust can be a long process, but worthwhile
- Citizens may not have the resources to understand how to get involved in RE projects, or the risks involved. Making this information easily accessible and digestible can help overcome this.
- Investors may not know of the possibility that crowdfunding holds, or the various business models that can be built around it. Early engagement and generating visibility can help address this barrier.
- Citizens may not always have the financial resources to invest in RE projects

4.5 RISKS

- Like any investment, there is a risk of fraud or a failure of the project [6]. Trust-building by LRGs and a robust business and legal environment can help mitigate this
- Crowdfunders have little bargaining power, even in an equity-based model [6]
- Lack of trust and information, as the reputation of the platform is the only asset on which crowdfunders can rely on before investing [6]. This can be addressed through greater stakeholder engagement on the project and its risks and rewards.
- The equity-based model can encounter administrative and governance challenges, including higher costs [6]
- Highly urbanized neighborhoods tend to donate more money to civic crowdfunding campaign, which could potentially lead to inequalities in the funding capacity of urbanized and less urbanized cities and regions [9].
- A lack of expertise in effectively managing crowdfunded RE projects can lead to mishaps which can further damage the trust of such projects in the future. Early and robust engagement with experts and other peer LRGs can help mitigate this risk.



5. CLIMATE CHANGE MITIGATION POTENTIAL

Access to finance and an insufficient volume of investments are some of the major hurdles when it comes to deploying renewable energy sources rapidly enough to meet international climate goals. The scale of the energy transition also demands the greater involvement of communities, who may need to turn into more active participants in the energy system in terms of energy use patterns, opting for suitable energy sources and suppliers, and greater involvement in RE projects. While crowdfunding may not directly contribute to climate change mitigation, it can act as a facilitator at the local level to spur the development of RE projects by bridging the financing gap, while also ensuring that the community is involved, which can create greater buy-in and improve the overall sustainability of a project.

6. FURTHER SCIENTIFIC AND TECHNOLOGICAL INSIGHTS

Crowdfunding is essentially a way of raising money from a large group of individuals [9]. It has different business models, including donation- or reward-based crowdfunding, but also lending-based and equity-based. In a lending-based model, crowdfunders are paid back at a fixed or floating interest rate, which is usually more advantageous than what traditional banks usually offer. In an equity-based model, crowdfunders become shareholders of the project and receive dividends and voting rights [6]. The latter two crowdfunding models accounted for 90% of the increase in funds collected by crowdfunding platforms between 2016 and 2018 [10]. The motivation in donation- and reward-based crowdfunding stems from altruism and local identity, and such funding is often found in civic crowdfunding campaigns and more often used to finance small projects entirely. For equity- and lending-based models, the financial incentive as well as the will to get involved as shareholders of the company are what motivate crowdfunders [4].

With the help of social media, crowdfunding platforms have been growing rapidly since the financial crisis of 2007–2009, answering to the difficulty small enterprises and initiatives were facing in securing loans/funding from traditional banks [4]. The sector of renewable energy was particularly vulnerable, as RE technologies still tended to be seen as less secure than more traditional energy technologies [6]. Renewable energy projects also lack collateral at the early stage and require a considerable upfront investment, which makes them slightly riskier for traditional investors [4, 7].

Crowdfunding became an alternative way to finance such projects, and an opportunity for investors to receive a better rate of return, usually around 8% [5]. The amount of funds collected through crowdfunding platforms grew by 140% between 2015 and 2018, going from EUR 167 million to EUR 402 million in only 3 years [10].

Since crowdfunding can only result in relatively low amounts of money, it can either be used to finance the entirety of a small-scale project or help cover the upfront investment of bigger RE projects. Local community engagement and the creation of energy cooperatives are central in the development of decentralized renewable energy production. This financing mechanism is not only fit to fill in the financing gap for an LRG's RE projects, it is also applicable to local citizen initiatives, including energy cooperatives. This will in turn reduce the dependence of the community on other carbon-intensive energy sources and promote the use of renewable energy by citizens, while increasing their acceptance [4]. The cooperative business model is defined by four principles: openness, transparency, democracy and solidarity. The equity-based crowdfunding model is thus very well adapted to this type of renewable energy project organization. As such, crowdfunding challenges the more traditional top-down approach to financing the energy transition, and offers a decentralized alternative where the end user can be both investor and producer [2].

7. NATIONAL – SUBNATIONAL INTEGRATION IN THE CONTEXT OF THIS SOLUTION

7.1 BENEFITS TO LOCAL GOVERNMENT

- Deploying crowdfunding can be an opportunity for local governments to showcase innovative financing mechanisms for local RE projects
- LRGs can contribute to the overall achievement of national and international climate and energy commitments

7.2 BENEFITS TO OTHER LEVELS OF GOVERNMENT

- National governments can gather valuable data and insight through pilot/demonstration projects that can be used to further create a more robust legal and regulatory framework for crowdfunding
- Allowing for more effective citizen participation in local RE projects can help the projects be more acceptable to the community. This can help reduce delays in project development and therefore contribute to meeting national climate and energy goals

REFERENCES

- [1] Nigam, N., Mbarek, S., & Benetti, C., 2018. "Crowdfunding to finance eco-innovation: case studies from leading renewable energy platforms". *Journal of Innovation Economics Management*, (2), 195–219.
- [2] De Crescenzo, V., Botella-Carrubi, D., & Rodríguez García, M., 2021. "Civic crowdfunding: A new opportunity for local governments". *Journal Of Business Research*, 123, 580–587. doi: 10.1016/j.jbusres.2020.10.021
- [3] McKinsey, 2022. "The net-zero transition: What it would cost, what it could bring", McKinsey Global Institute. Available at: <https://www.mckinsey.com/capabilities/sustainability/our-insights/the-net-zero-transition-what-it-would-cost-what-it-could-bring>
- [4] Lam, P., & Law, A., 2016. "Crowdfunding for renewable and sustainable energy projects: An exploratory case study approach." *Renewable And Sustainable Energy Reviews*, 60, 11–20. doi: 10.1016/j.rser.2016.01.046
- [5] Gianfrate, G. and Loewenthal, S., 2015. "Private Equity Throughout the Financial Crisis". *The Journal of Private Equity*, 19(1), 14–26.
- [6] Bonzanini, D., Giudici, G., & Patrucco, A., 2016. "The Crowdfunding of Renewable Energy Projects". In *Handbook of Environmental and Sustainable Finance*.
- [7] Covenant of Mayors in Sub-Saharan Africa (CoM SSA), 2020. "Finance Roadmaps for Climate Projects". CoM SSA.
- [8] Ecivis, 2022. "Civic Crowdfunding for Local Government". Retrieved 14 March 2022. Available at: <https://www.ecivis.com/blog/crowdfunding-for-local-government-whats-new-in-civic-crowdfunding>
- [9] Van Montfort, K., Siebers, V., & De Graaf, F., 2020. "Civic Crowdfunding in Local Governments: Variables for Success in the Netherlands?" *Journal Of Risk And Financial Management*, 14(1), 8. doi: 10.3390/jrfm14010008
- [10] Bourcet, C., & Bovari, E., 2020. "Exploring citizens' decision to crowdfund renewable energy projects: Quantitative evidence from France". *Energy Economics*, 88, 104754.
- [11] Vasileiadou, E., Huijben, J. C. C. M., & Raven, R. P. J. M., 2016. "Three is a crowd? Exploring the potential of crowdfunding for renewable energy in the Netherlands". *Journal of Cleaner Production*, 128, 142–155.
- [12] bettervest, 2019. "Crowdfunding as an alternative to Financing of Sustainable Clean Energy Projects". bettervest GmbH.



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