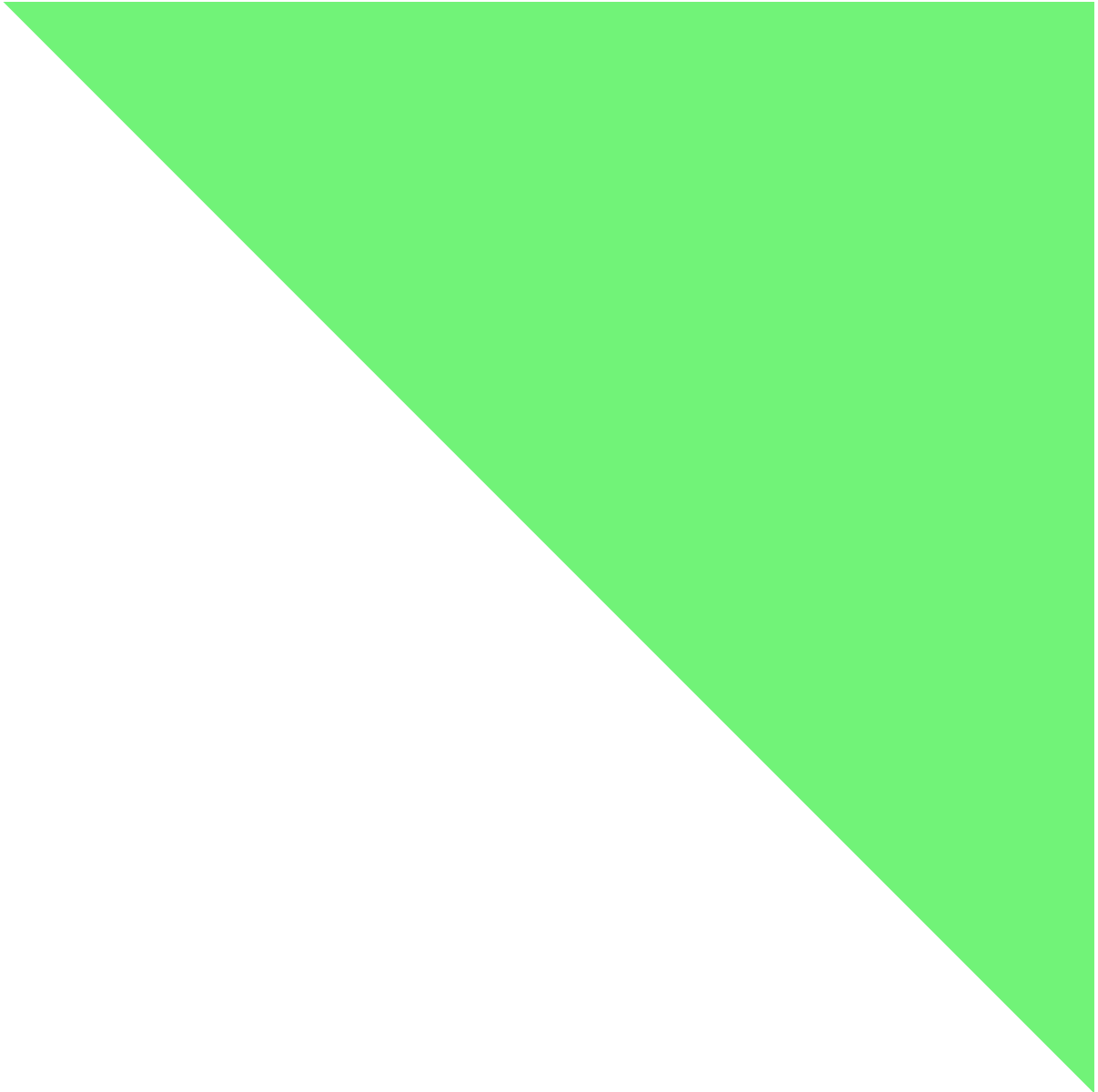


CDP Briefing on City Project Aggregation

September 2025



This briefing, prepared by CDP in partnership with the Global Covenant of Mayors for Climate and Energy (GCoM), outlines the benefits and challenges of project aggregation, provides practical guidance to local governments, and features insights from data disclosed to CDP-ICLEI Track in 2024. Please refer to CDP's [2024 Global Snapshot](#) and [Open Data Portal](#) for visuals, additional case studies, and more detailed data. Data provided by cities may have been edited from its original form for clarity and brevity.

If any content is derived from this briefing, please provide a citation as 'CDP Briefing on City Project Aggregation, published September 2025.'

What is project aggregation?

Finance is essential to fund projects that communities need to implement to reduce emissions and adapt to climate change. Each year, local governments report through CDP-ICLEI Track thousands of climate actions, physical risks to climate change and climate-related projects that are either partially or fully unfunded. **In 2024, 611 cities across 75 countries disclosed 2,508 climate-related projects with a total investment requirement of US\$86 billion.**

One tool available to local governments to attract and facilitate investment for these climate-related projects is project aggregation, also referred to as 'project bundling,' the practice of bringing together several projects to form a joint portfolio, combining purchasing or borrowing power and achieving economies of scale. This type of aggregation is also called "demand-side" aggregation, as it is led by the entities seeking financing, in this case, local governments.

For instance, project aggregation might be applied when a municipality's climate action plan identifies 10 priority interventions ranging from US\$50,000 to US\$5 million each. At the same time, a regional fund is seeking to disburse US\$10 million in low-interest financing for municipal infrastructure. By bundling projects into a larger proposal, the municipality can access capital for initiatives that would be too small or too risky to finance individually.

Local governments can also undertake project aggregation as a strategy to reduce the likelihood of disjointed or inefficient project development and identify areas where integrated planning can bridge shared challenges. Governments working across jurisdictions can standardize interventions, share best practices, reduce duplication of effort, and benefit from joint technical assistance, all of which can be highly impactful to fill local capacity and finance gaps, including in cases where joint financing is not the primary intended outcome.

Aggregation can also refer to 'supply-side' aggregation, where small financial commitments from multiple investors are pooled together. This approach is common in the private sector – for example for the creation of investment funds, which combine capital from many investors to increase collective impact and spread risk.



While the focus of this briefing is explicitly on project-level, demand-side (i.e. city-side) aggregation, some instruments, such as green bonds, may combine features of both supply- and demand-side aggregation. [Green bonds](#) are fixed-income financial instruments designed to finance environmental or climate projects; in addition to financial returns, they are evaluated based on their impact and earmarked for specific projects or priorities. From the issuer's perspective, a green bond represents demand-side aggregation, since one issuance channels resources to a portfolio of smaller projects. From the investor's perspective, the same bond reflects supply-side aggregation, as each purchaser contributes only a fraction of the total financing.

In the broadest sense, aggregation capitalizes on economies of scale and partnerships to maximize impact, enhance efficiency, and facilitate access to financing.

Why should cities undertake aggregation?

Of the 1,700+ projects with cost estimates reported by local governments to CDP-ICLEI Track in 2024,¹ 47% (823 projects) had a reported cost under US\$1 million. Yet minimum project size thresholds for investment often exceed US\$1 million. The [Brazilian Development Bank](#) (BNDES), which offers financing to municipalities, has a minimum investment threshold of approximately US\$7 million (20 million Reals). Meanwhile, the [Climate Investment Fund's Smart Cities Program](#)² seeks to provide US\$30-100 million in low-interest loans for each participating city. [Covenant of Mayors – Eastern Partnership](#) reports that multilateral development banks and international financial institutions are usually seeking projects with a minimum size of 5-15 million EUR.

Investment thresholds also appear among project preparation facilities. The [Cities Climate Finance Leadership Alliance](#) identified that while most project preparation facilities do not publicize clear information on their minimum project size eligibility thresholds, those that do are seeking multimillion dollar projects, ranging from a minimum size of US\$1.5 million up to a minimum of US\$26 million, depending on sector and stage.

Multimillion thresholds present a challenge for cities, especially small- and medium-sized cities in low- and middle-income countries. Without significant planning, many municipalities do not have the capacity to absorb and execute this level of financing. For example, a 2025 [World Bank](#) analysis of budget expenditures in Uganda and Kenya found significant underspends at the local and national levels. Failure to implement finance once received

¹ In 2024, 611 local governments publicly disclosed 2,508 climate projects via CDP-ICLEI Track, of which 1,742 included cost estimates. 823 of projects with cost estimates were each reported to be worth less than US\$1 million.

² The Climate Investment Fund works in partnership with multilateral development banks (MDBs) to provide concessional finance and comprehensive project preparation support.



means mounting debt burdens and long-term credit risk implications, which can undermine a municipality's ability to access finance in the future.

Bundling can also reduce duplication of effort and implementation costs. Joint development distributes the planning burden, allowing participants to exchange best practices, and capitalize on economies of scale in terms of purchasing and administration. [The US Federal Highway Administration](#), for example, encourages bundling to expedite project delivery, reduce costs, and streamline design, construction, and procurement.

See Table 1 for a full list of benefits of aggregation.

How can disclosure to CDP-ICLEI Track facilitate project aggregation?

Disclosure to CDP-ICLEI Track allows subnational governments to share climate-related data in a standardized and accessible manner, giving data users insight into subnational trends, complementary projects, and the status of enabling conditions.

In 2024, over 1,000 cities, states, and regions disclosed to CDP, including 600+ cities publicly reporting 2,500+ projects in need of funding and financing through CDP-ICLEI Track. Within this disclosure, cities reported evidence of ongoing project bundling, individual projects that could be candidates for aggregation, and valuable contextual data, such as whether a discloser is already collaborating with nearby local governments, examples of private -sector partners, current climate risks, and external factors that impact the municipality's climate-related decision-making.

This data is made available to entities that facilitate aggregation, such as the Global Covenant of Mayors, project preparation facilities, national government ministries, international organizations, and financial institutions, providing them with necessary information to drive the provision of technical assistance, advocacy, and finance to local governments.

Reporting through CDP-ICLEI Track encourages cross-team coordination among disclosers. CDP's questionnaires capture the depth and breadth of climate action, and cities report that disclosure incentivized them to initiate conversations and break down siloes within their organizations, enabling cities to identify the synergies and collaborations that underpin aggregation.

Aggregation in CDP-ICLEI Track Disclosure

In 2024, cities reported evidence of ongoing aggregation in their CDP-ICLEI Track disclosures.



Aggregation at the city level

The City of Cape Town, South Africa, reported it is seeking over \$170 million for a **Livable Urban Waterway Program**, an initiative to use nature-based interventions to rehabilitate urban waterways, which will reduce flooding, increase access to potable water, and provide essential ecosystem services. In its disclosure, the city identified 45 projects that could be a part of the initiative. In July 2025, the city issued a [cost-benefit analysis](#) showing a strong economic case for nature-based interventions.

The City of Austin, US is in the final stages of a multiyear initiative to develop a **comprehensive public transportation system**. The core of the project is a light rail system, coupled with bus transit, and cycling pathways funded through a combination of bonds, grants, and local taxes. The city created a specialized publicly managed entity, Austin Transit Partnership (ATP), to design and implement the project, working in coordination with city departments and the regional public transit agency. In August 2025, ATP issued a [Request for Proposals](#) for the multibillion design and construction contract.

Singapore will issue an estimated \$25 billion in green bonds by 2030. In its 2024 disclosure, Singapore reported it has issued approximately US\$4 billion. In support of this, the municipality issues regular updates to its green bond framework, including one as recently as [January 2025](#), outlining use of proceeds guidelines in plain language and establishing transparent reporting practices for the projects financed under this mechanism.

In 2024, the City of Mendoza, Argentina, a city of just over 100,000 people, reported to CDP-ICLEI Track that it is issuing a green bond to fund renewable energy. The [green bond](#) will provide just over US\$500,000 in financing over a two-year term to increase solar energy installation throughout the city.

Project aggregation across jurisdictions

In Costa Rica, the Municipality of Monteverde is working with regional entities and the local water utility to access finance for over US\$13 million worth of waste and sanitation projects. This public-private partnership aims to benefit 11 communities and 300 companies through the development of a waste transfer center, a wastewater treatment plant, and an organic waste treatment plan.

In the UK, the City of Belfast reported it participated in a successful two-year cross-border initiative with cities in Scotland, Ireland, and Northern Ireland to increase the volume of electric vehicle charging. The project was awarded 6.4 million EUR by the European Union, along with national funds from the respective countries, and successfully installed 75 rapid electric vehicle stations.

Taking joint initiatives a step further, 18 UK cities formed a joint planning and decision-making body known as West Midlands Combined Authority. This organization reports to CDP-ICLEI Track as a single entity and in 2024, launched the [Local Net Zero Accelerator Program](#). The



Combined Authority will act as an intermediary for funding, working with investors on behalf of the municipalities, and provide technical assistance to participating governments.

Meanwhile, the City of Athens reports it is building on a legacy of successful aggregation to build partnerships for clean and affordable energy. In 2017, 7 municipalities in the [Athens Metropolitan Area](#) jointly financed energy efficiency projects collectively worth more than 20 million EUR and resulting in almost 24,000 tons of avoided CO2 emissions. The municipalities aggregated 135 building retrofits and 22,000 energy efficient lighting installations into 8 bundled packages. The project was successfully funded using ESCOs³ and private investment. In its 2024 disclosure, the city reported it launched the 'Athenian Energy Alliance' with 17 municipalities to enhance energy production and reduce costs for consumers.

Untapped Project Aggregation through CDP-ICLEI Track

Many cities reporting to CDP-ICLEI Track demonstrate they have the enabling conditions in place to bridge investment barriers through project aggregation. One of the key aspects of aggregation is the ability to identify complementary projects within the jurisdiction, which involves a high-level understanding of municipal or regional priorities and visibility into ongoing activities.

Of the 880 cities that reported to CDP-ICLEI Track in 2024, 82% reported the details of their climate action plans. Among these, 44% reported they assess synergies and/or co-benefits of action and have an annual monitoring plan to assess progress.⁴ Cities with these features are uniquely positioned to pursue aggregation as they already have a strong understanding of local action, are actively examining interdependencies, and have established accountability frameworks.

Furthermore, in 2024, 68% of disclosing cities reported that they are already engaging with other governments, including local governments, regional governments, and/or national government,⁵ on their climate action, indicating that many cities already have the relationships necessary to pursue inter-city aggregation.

³ An [ESCO](#) is a performance-based contract for energy efficiency projects. The selected Energy Services Company (ESCO) manages the financing and implementation of the project and may guarantee some level of energy savings. The building owner repays the ESCO through monthly savings on energy bills.

⁴ Of the 880 cities that disclosed to CDP-ICLEI Track in 2024, 718 reported the details of their climate action plans. Among these, 313 reported that they assess synergies and/or co-benefits of actions and have an annual monitoring plan in place (Q8.1.1 of CDP-ICLEI Track)

⁵ Of the 880 local governments that disclosed through CDP-ICLEI Track, 598 indicated they are working with other local governments, regional governments, or national governments on their climate action (Q1.5 of CDP-ICLEI Track)



Project level data in Q9.3 reveals additional untapped opportunities for aggregation.

The City of Abidjan, Côte d'Ivoire, reported three complementary transport projects in its CDP-ICLEI Track disclosure, jointly seeking over US\$30 million in investment. While these projects differ in their activity type, these may be aggregated based on their shared objective of reducing vehicular emissions and promoting multimodal transport within the municipality. The projects are all reported to be at the pre-feasibility/impact assessment stage - bundling these projects at the early stages presents an opportunity to undertake a joint impact assessment, allowing project developers to synchronize work to enhance resource efficiency while exploring opportunities to maximize mutual benefits. Bundling road and parking infrastructure improvements with cycling infrastructure can be particularly impactful to pre-empt the risk of increasing vehicles emissions caused by congestion reductions.

In South Africa, the cities of Johannesburg, Tshwane, and Ekurhuleni reported four renewable energy projects jointly seeking more than US\$7 million. The projects differ in their size, scope, and development stage (Johannesburg is seeking to repurpose degraded mining land for solar PV generation, Ekurhuleni is seeking to retrofit municipal buildings with solar, and Tshwane is seeking to procure renewable energy and distribute off-grid solar in informal settlements), however the projects may be suited to aggregation based on their geographic proximity and shared overall goal of enhancing access to reliable, locally produced solar energy through an equity lens. The provincial government may be able to facilitate coordination between the three municipalities and provide a platform for financing and regional strategy alignment.

The City of Buenos Aires, Argentina reported 10 renewable energy and building retrofit projects collectively seeking just over US\$4 million. The projects include city-led solar PV energy generation, a retrofit program targeting more than 36,000 homes, and a series of social and economic interventions to enhance information about renewable energy and reduce implementation costs for residential and commercial retrofits. These projects are all in the later stages of project development, but in 2024 all but one were reported to be 'not funded and seeking full funding,' suggesting the presence of a systemic bottleneck preventing implementation. Bundling the projects may be an opportunity to reassess the projects with a focus on bridging shared challenges.

In 2024, six cities located near the capital of San Jose, Costa Rica reported 10 waste management projects with an emphasis on increasing community-based recycling and composting. These projects are all small scale, jointly worth less than US\$300,000, and are at different stages of development, but each focus on working with small businesses and households to improve waste management through education and resource distribution. Two of the cities (Municipality of Belén and La Union) also reported they are seeking just over US\$400,000 in financing to invest in organic waste processing facilities, both of which are at earlier stages of development. This suggests an opportunity for inter-municipal collaboration,



including the exchange of best practices on how to incentivize behavioral changes and a joint planning and financing scheme to allow neighboring municipalities to benefit from nearby waste treatment facilities.

Four cities in the Philippines report they are working to tackle solid waste management in their jurisdictions through projects collectively worth US\$8 million. While geographically dispersed, each city reports it is seeking jurisdiction-wide solutions to solid waste management, with a focus on comprehensive plans that help address multiple facets of urban waste. Three of the four projects mention this activity is mandated by a federal regulation and the projects' shared focus on long-term planning indicates the potential for a shared solution to systemic challenges with support of the national government.

These examples demonstrate the untapped project aggregation opportunities reported in CDP-ICLEI Track disclosure. With disclosures from over 880 cities in 89 countries requested with our partners, including Global Covenant of Mayors and C40, it would be strategic to work together to identify more candidate projects for aggregation and encourage further disclosure based on a shared typology of project bundling. CDP strongly recommends that local governments continue to update their disclosure on an annual basis to ensure the accuracy and thoroughness of their data and that partners continue to share clear guidance for project aggregation opportunities.

Aggregation guidance for cities

Project aggregation can be technically and logistically complex. To help address information gaps [EU Covenant of Mayors](#), [Covenant of Mayors – Eastern Partnership](#), [Cities Climate Finance Leadership Alliance](#), [Climate Policy Initiative](#), and [Copenhagen Centre for Energy Efficiency](#) have each issued detailed resources for cities, the key takeaways of which help inform the guidance below.

Summary of recommendations

- Project aggregation is an effective strategy to bridge investment thresholds and increase efficiency in project development and implementation.
- The primary obstacle to aggregation is the complexity of coordinating across fragmented stakeholders.
- Municipalities should undertake stakeholder mapping during the earliest stages of project development to identify collaboration opportunities and reduce duplication of effort.
- Municipalities should work directly with financial institutions and project preparation facilities to identify minimum investment thresholds and other investment criteria.
- Regional and national governments should facilitate subnational aggregation by creating shared standards, setting priorities, and driving engagement with financial institutions.



- In the absence of guidance from higher levels of government, municipalities can spearhead standardization, including technical standards, policy guidance, procurement standards, and monitoring and evaluation processes.
- Third-party organizations are encouraged to play a facilitator role and alleviate coordination burden from municipalities.

Recommended criteria for project aggregation

Sectors with shared technical standards are well suited to aggregation, such as energy efficiency, renewable energy, waste management, and transportation. While details inevitably vary across individual projects, greater homogeneity eases coordination challenges and is more amenable to economies of scale in terms of procurement and implementation.

Geographical proximity facilitates coordination. There may already be existing cross-party collaboration and intermediaries that can support the process, such as a regional government or inter-municipal entity working across jurisdictions. Municipalities in the same geography are likely to be facing similar challenges and have key interdependencies.

Projects should have complementary risk profiles. Projects can be bundled based on similar risk profiles, which facilitates strategic, coordinated risk management, or based on a mix of risk profiles, thus moderating the risk of the overall portfolio.

Projects may also be matched based on differing payback periods, enabling investors to receive returns before all the projects have been implemented and reducing the repayment burden on individual project owners.

See Table 2 for a full list of recommended aggregation criteria.

The primary obstacle to aggregation is the complexity of coordinating across fragmented stakeholders.

Stakeholder mapping and alignment should start at the earliest stages of project development. This step provides project developers with a clear understanding of relevant networks and partners, visibility into how projects fit into larger strategic priorities, and identifies opportunities for peer-to-peer learning. Early-stage alignment mitigates the need to retroactively adjust projects.

Project owners must be willing to invest in the development of shared project management processes and governing structures. The participation of a facilitator, such as a higher-level government, a trusted third party, or the creation of a dedicated entity can help address disputes and reduce the burden on a dispersed group of project owners by centralizing project management and decision-making. The [EU Covenant of Mayors](#) specifically suggests the establishment of a multi-municipal governance structure that is empowered to make timely decisions.

Regulations and standards should be harmonized. Shared monitoring and evaluation practices build trust and transparency among project owners and simplify the assessment



process for investors. Aligning technical standards and/or procurement practices can also reduce transaction costs. Internal processes may be subject to lock-in and adjusting them involves buy-in from stakeholders that may be resistant to change. Yet this can also present an opportunity to adapt processes to better align with changing priorities. For example, [C40](#) suggests joint procurement allows participants to assess existing standards and adopt strategies to drive climate innovation.

Third parties can facilitate connections and incentivize collaboration.

Regional and national governments shape priorities and create frameworks for cooperation.

For example, since 1997, the [Municipal Development Fund of Georgia](#) has cooperated with private and public financial institutions to invest in local infrastructure, strengthen the long-term financial capacity of local governments, and led the bundling of municipal energy projects. In the 2000s, the Belgian and Croatian national governments helped popularize an innovative financing model for energy efficiency known as ESCOs by [creating 'super ESCOs'](#), national entities mandated to provide financing and standardize the market for this model, thus reducing transaction costs and risk for participating municipalities. More recently, the Brazilian government launched a [Green and Resilient Cities Program](#) that aims to collaborate with institutions, incentivize local financing, and standardize guidance on municipal climate action.

Non-governmental organizations can also be facilitators. In the US, approximately 100 cities along a major waterway are part the [Mississippi Rivers Cities and Towns Initiative](#) (MRCTI), an association that provides technical assistance, advocacy, and a platform for joint planning. [The Covenant of Mayors- Eastern Partnership](#) has provided in-depth technical assistance to cities in Eastern Europe to support project bundling for energy efficiency and renewable energy.

Disclosure is key to identify common sectors, project types and risk profiles across

jurisdictions. CDP-ICLEI Track serves as critical tool to give guidance to local governments as they report projects which could be further aggregated, to find opportunities for alignment across jurisdictions, and support partners to identify trends for aggregation. In Latin America, for example, CDP leveraged disclosure data and existing relationships with local governments, financial institutions, and national government ministries to host 'investor round tables' where municipalities were brought together to present projects to financial institutions, enabling peer-to-peer learning among municipalities and giving investors a platform to share their criteria and guidance directly with municipalities. CDP is continuing to build on these relationships through ongoing engagement with national ministries in Chile and Brazil.

See Table 3 for a full list of challenges to successful project aggregation.



About CDP

Founded in 2000, [CDP](#) is a not-for-profit that runs the world's environmental disclosure system for investors, companies, cities, states and regions. We aim to make environmental reporting mainstream, providing detailed insights and analysis to drive urgent action needed for a climate safe, water secure, deforestation free world.

About CDP-ICLEI Track

CDP-ICLEI Track brings together the knowledge and expertise of two global organizations to provide national governments with evidence and insight on the state of city climate action. Through a jointly developed international framework, CDP-ICLEI Track sets the bar for global best practice in measuring, tracking and communicating city climate risks, impacts and actions.

By making cities' environmental data openly available for not-for-profit partners and organizations, we ensure policymakers have access to high-quality information, and that policy is grounded in meaningful insight. Cities' data is used by entities such as the UN, the IPCC, WHO and the World Bank to inform climate policy and initiatives.

Using one questionnaire, the platform allows simultaneous reporting to key climate initiatives from ICLEI, C40, WWF, Making Cities Resilient 2030 and the Global Covenant of Mayors, and measures a city's progress against UN-backed climate campaigns (such as Race to Zero and Race to Resilience).

Project disclosure through CDP-ICLEI Track can help address the widespread standardized data gap on urban sustainable infrastructure needs. This can better position local governments for robust technical assistance and financing opportunities. [Search and view disclosure data](#) from local governments or [start reporting](#) today.



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Table 1: Benefits of project aggregation⁶

Benefit	Details
Reaching economically feasible minimums	MBDs and IFIs are usually seeking projects from 5,000,000 to 15,000,000 EUR and above (depending on the sector) due to existing allocation procedures and costs for project administration.
Enhanced investor appeal	Bundling smaller projects into larger portfolios increases their attractiveness to investors. This aggregation provides a more substantial investment opportunity and aligns with the criteria set by these entities.
Economies of scale	By consolidating projects or their elements, bundling schemes aim to achieve economies of scale. This approach can significantly contribute to the scalability of energy and climate initiatives, as it allows for more efficient resource allocation and implementation strategies across a broader spectrum of projects.
Streamlined processes	Bundling projects enables the streamlining of various components such as administration, tendering, contracting, energy audits, project design and funding. This streamlining not only boosts efficiency but also reduces associated expenditures, optimizing resource utilization throughout the project lifecycle.
Increased competition	Larger contract sizes usually resulting from bundling schemes increase competition among contractors. This competition incentivizes participants to offer competitive pricing and innovative solutions, ultimately benefiting project outcomes and overall cost-effectiveness.
Cost savings through volume purchasing	The procurement of larger quantities of materials through bundling provides leverage for negotiating lower prices. Additionally, the utilization of similar technologies and processes across bundled projects enhances worker efficiency and reduces overall construction costs.
Advanced technical solutions and expertise	Bundling schemes facilitate the application of technical expertise and advanced solutions within projects, leading to more significant impacts compared to alternative approaches. It allows to involve high-level technical, administrative and management expertise, making them more attractive to local and international specialists. By consolidating multiple initiatives, experts can apply their knowledge to larger, more impactful projects, improving efficiency, innovation, and overall project success.
Accelerated project design, implementation and replication	Using standardized interventions across key stages reduces risks by ensuring thorough project selection and feasibility assessments while also streamlining access to funding sources. Additionally, it facilitates knowledge sharing, allowing successful models to be replicated more efficiently across multiple locations.

⁶ Content originally published by *Covenant of Mayors – Eastern Partnership*



Strengthen collaboration between municipalities	The bundling approach improves collaboration among municipalities enhancing coordination and governance capacities. This model not only supports joint investment programs but also strengthens municipalities' ability to tackle regional challenges such as air quality management, smart mobility, and tourism strategies. By defining a clear geographic scope, more municipalities can participate in large-scale initiatives.
Flexibility in payback periods	Bundling projects offers opportunities to balance energy efficiency projects (measures) with varying payback periods, ensuring project bankability while achieving tangible results. This flexibility allows for the optimization of investment returns while meeting sustainability objectives.
Cost efficiency during construction	During the construction phase, bundling projects enables cost savings through various means, including the procurement of materials at lower prices and reduced contractor mobilization costs. Furthermore, efficient utilization of labor and equipment, especially when employing a single contractor, further enhances cost efficiency and project delivery timelines.

Table 2: Recommendations for project selection⁷

Recommendations	Description	Example
Shared/common objectives	Seek projects with aligned goals or outcomes, as bundling projects with similar objectives enhances coherence and focus.	For instance, CO ₂ reduction, costs savings, etc.
Resource alignment	Evaluate projects with comparable resource requirements in terms of budget, manpower, expertise, and time. Bundling projects with similar resource needs streamlines resource allocation and management.	Refurbishment of 5 school from 1 municipality and 6 kindergartens from another with more or less similar dimensions, etc.
Complementary activities	Look for projects with complementary activities or tasks that can benefit from coordination or integration. Bundling such projects enhances synergies and avoids duplication of efforts.	Combination of mitigation and adaptation measures, combination of building refurbishment projects with DH projects within one district.
Geographic proximity	Consider projects located in the same geographic area or with coinciding target regions. Bundling geographically proximate projects leverages economies of scale and reduces logistical challenges.	Projects within one municipality/region/river basin.

⁷ Content originally published by *Covenant of Mayors – Eastern Partnership*



Stakeholder alignment	Assess projects with common stakeholders, beneficiaries or partners. Bundling projects with shared stakeholder interests facilitates collaboration and enhances stakeholder engagement.	Bundled projects addressing same stakeholders (children, residents, elderly people) have more social benefits.
Technical compatibility	Evaluate projects with compatible technical requirements, methodologies, or technologies. Bundling technically compatible projects facilitates knowledge sharing and interoperability.	Wet facade technology for building refurbishment, LED-lights for public lighting, PV panels of same capacity, etc.
Risk profiles	Examine projects with similar risk profiles or risk mitigation strategies. Bundling projects with comparable risk levels enables more efficient risk management and contingency planning.	Low-risks project bundling; mix of low and high-risks project to make overall project moderated.
Policy and regulatory environment	Consider projects operating within similar policy frameworks or regulatory contexts. Bundling projects subject to similar regulations streamlines administrative processes.	Bundling of projects which do not require extra permissions or licenses.
Strategic alignment	Evaluate projects aligned with overarching organizational or strategic objectives. Bundling projects contributing to common strategic priorities enhances alignment and coherence in project portfolios.	Similar Projects from SECAPs or other long-term strategies.
Scale and scope	Assess projects with compatible scales and scopes. Bundling projects of similar size or complexity facilitates portfolio management and optimizes project outcomes.	Bundling projects for thermal refurbishment of same size/type buildings, street lighting projects for lamps with similar capacity and quantity, transport projects for similar vehicles.



Table 3: Key challenges of aggregation⁸

Benefit	Details
Complexity	Bundling multiple components or tasks into a single package can increase the complexity of project management. Coordinating various elements and ensuring they all align properly can be challenging.
Resistance to change	Stakeholders may resist bundling because it requires adopting new processes or methodologies that they may not be familiar with or comfortable using.
Lack of understanding	Some stakeholders (especially political level representatives) may not fully understand the concept or benefits of bundling. This can lead to skepticism or reluctance to participate.
Capacities of municipal staff	The vast majority of municipalities have no staff with relevant expertise and competences to implement large-scale bundling projects.
Risk allocation	Bundling can shift risks among different parties involved in the project. Ensuring fair and equitable risk allocation among stakeholders can be difficult and may require negotiation.
Regulatory and legal compliance	Projects in certain sectors or regions may be subject to regulatory/legal requirements that affect the feasibility or implementation of bundling schemes. Ensuring compliance with relevant regulations adds an additional layer of complexity.
Procurement challenge	Bundling may require changes to procurement processes, such as selecting different vendors or negotiating new contracts. Procurement challenges, such as finding suitable suppliers or ensuring competitive pricing may impact implementation.
Fragmented stakeholder interests	Different stakeholders may have conflicting interests or priorities, making it challenging to reach consensus on the scope and implementation of a bundling scheme.
Technical compatibility	Bundling multiple components or tasks together may require ensuring compatibility and interoperability between different systems, technologies or processes.
Measurement and evaluation	Establishing metrics and evaluating the effectiveness of a bundling scheme can be challenging. It may be difficult to attribute specific outcomes or improvements directly to the bundling initiative.

⁸ Content originally published by *Covenant of Mayors – Eastern Partnership*



Appendix 1: City of Abidjan aggregation opportunity

City	City of Abidjan, Côte d'Ivoire
Title	Development of parking spaces
Description	The park and ride offer will provide an alternative to the use of private cars in urban centers (walking, cycling, public transport) and will promote intermodality.
Development status	Pre-feasibility/impact assessment
Financing status	Project not funded and seeking full funding
Project size (US\$)	10 million < 50 million

City	City of Abidjan, Côte d'Ivoire
Title	Development of 150 km of pedestrian and cycle paths
Description	The development of 150 km of road for bicycles and pedestrians is now part of a favorable context in terms of soft, intelligent urban mobility and sustainable development.
Development status	Pre-feasibility/impact assessment
Financing status	Project not funded and seeking full funding
Project size (US\$)	10 million < 50 million

City	City of Abidjan, Côte d'Ivoire
Title	Construction of a modern pound
Description	The creation of 4 pounds aims to quickly remove from circulation bulky, obstructing or abandoned vehicles on public roads. The creation of pounds comes to curb the issue of recurring and endless traffic jams and guarantee road fluidity.
Development status	Pre-feasibility/impact assessment
Financing status	Project not funded and seeking full funding
Project size (US\$)	5 million < 10 million

Appendix 2: South Africa aggregation opportunity

City	City of Johannesburg, South Africa
Title	Renewable energy (RE) development in the form of solar PV on disused and degraded mining land and city-owned land
Description	The City of Johannesburg intends to repurpose disused and degraded mining land, as well as city owned land, for renewable energy (RE) development. Rehabilitation of disused mining land is an environmental solution for managing the dust, recycling water, and reconditioning soil as key interventions for addressing the long term environmental and social consequences of mining. Solar photovoltaic (PV) generation capacity has been identified as a feasible technology for generating RE given the abundant sunshine available to Johannesburg.
Development status	Pre-feasibility/impact assessment
Financing status	Project not funded and seeking partial funding



Project size (US\$)	Unknown
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City	City of Tshwane, South Africa
Title	Renewable Energy Independent Power Producer Programme
Description	The City of Tshwane is planning to procure 1000 MW from Independent Power Producers (IPP) in the next three years using the off-balance sheet funding (private finance). The City has issued Request for Information (RFI) to gauge interest from parties interested as Independent Power Producers (IPP) to design, build and operate a collection of Renewable and Cleaner Energy Technologies. The information submitted has been utilized to understand the market offerings on energy generation and viability for implementation. The city is now working on the design and development of Request for Proposals.
Development status	Pre-feasibility/impact assessment
Financing status	Project partially funded and seeking additional funding
Project size (US\$)	500 million and over

City	City of Tshwane, South Africa
Title	Tshwane smart off-grid solutions for informal settlements.
Description	Off Grid Smart solutions is a project envisaged to service informal settlements that currently do not have access to electricity or household heating. The projects intend is to use solar electricity / energy to demonstrate how 'green' technologies can be used appropriately to incrementally upgrade informal settlements energy and electrification systems for households in a safe and secure manner.
Development status	Scoping
Financing status	Project not funded and seeking partial funding
Project size (US\$)	1 million < 5 million

City	Ekurhuleni Metropolitan Municipality, South Africa
Title	Green municipal buildings
Description	This measure proposes that the City commits to building green for all new municipal buildings, as well as retrofitting existing buildings to be more energy and water efficient through a refurbishment program and generates renewable electricity with solar photovoltaic (PV) panels on rooftops of municipal buildings. It would build on work already done as part of the Green Building Framework for City-owned Buildings (CoE & Makone, 2019) which summarizes the baseline energy status of City-owned buildings, outlines green measure decision-making tools, and presents a marketing strategy for implementation.
Development status	Pre-feasibility/impact assessment
Financing status	Project not funded and seeking full funding
Project size (US\$)	1 million < 5 million



Appendix 3: Buenos Aires aggregation opportunity

City	City of Buenos Aires, Argentina
Title	Strengthening CIFA (Environmental Information and Training Center) as a reference
Description	The aim is to position the Environmental Information and Training Centre (CIFA) as a local and national reference node in the training and technological aspects of urban applications of energy sources, also generating local knowledge through the promotion of research, development and innovation.
Development status	Project structuring
Financing status	Project not funded and seeking partial funding
Project size (US\$)	Under 500,000

City	City of Buenos Aires, Argentina
Title	Promotion of photovoltaic solar installations for distributed generation
Description	Develop a platform for linking and associating supply and demand to promote an economy of scale that, also leveraged with subsidized financing for the acquisition of equipment, reduces costs and promotes distributed residential, commercial and industrial generation. Through the use of this platform, successive calls will be made to create groups for the joint purchase of goods and services, which will receive partial subsidies for their acquisition costs.
Development status	Project feasibility
Financing status	Project not funded and seeking full funding
Project size (US\$)	500,000 < 1 million

City	City of Buenos Aires, Argentina
Title	Community Solar Generation with broad social impact
Description	Technical-economic study for the implementation of a Community Solar Generation model in new social housing in vulnerable neighborhoods of the City of Buenos Aires. Carrying out large-scale photovoltaic installations, reducing costs and payback periods, bringing the option of investing in this technology to all residents of the city, and economically benefiting the owners of the roofs of social buildings, by reducing their energy costs and removing the risk of energy poverty. Generation of green jobs associated with the activity of these installations.
Development status	Implementation
Financing status	Project not funded and seeking full funding
Project size (US\$)	Under 500,000

City	City of Buenos Aires, Argentina
Title	Neighborhood Clubs: Connecting Energies
Description	To improve the energy performance of neighborhood clubs and contribute to the sustainability of the clubs and their important social function. The aim is to create a space for collaboration where representatives of neighborhood clubs who need to implement energy efficiency and renewable energy measures can participate.



Development status	Project structuring
Financing status	Project not funded and seeking full funding
Project size (US\$)	1 million < 5 million

City	City of Buenos Aires, Argentina
Title	CABA retrofit WEB portal
Description	Develop a web portal where all information related to retrofits is centralized, which would serve as a repository of general information to guide citizens, provide technical information and best practice guides for professionals, and provide guidance services. Promote a list of suppliers, professionals, financing lines, and offer product discounts.
Development status	Project structuring
Financing status	Project not funded and seeking full funding
Project size (US\$)	Not reported

City	City of Buenos Aires, Argentina
Title	Metropolitan Platform for Monitoring Renewable Energy
Description	Monitor in a centralized and real-time manner the status and evolution of the set of photovoltaic installations in the City, with information on generation, status, maintenance requirements (preventive and corrective), alerts and rapid response to failures, also serving as a governance and dissemination tool for clean technologies.
Development status	Project structuring
Financing status	Project not funded and seeking full funding
Project size (US\$)	Under 500,000

City	City of Buenos Aires, Argentina
Title	Solidarity City - program for the implementation of new community development strategies for clean energy and energy empowerment in vulnerable sectors
Description	Empowering residents of vulnerable urbanized neighborhoods in the City of Buenos Aires to efficiently manage their energy, through assistance and training in energy savings and efficiency, and in the correct use, maintenance and self-management of renewable energy facilities provided by the State, to maximize and make lasting the economic, social and environmental impacts derived from them.
Development status	Implementation
Financing status	Project not funded and seeking full funding
Project size (US\$)	Under 500,000

City	City of Buenos Aires, Argentina
Title	Sustainable social housing design
Description	Design and build a prototype of social housing, emphasizing all those elements that will determine the use of energy during the useful life of these buildings. Incorporate the necessary elements to achieve social housing with



	optimal energy performance and serve as a model for other social housing applications in the City.
Development status	Project structuring
Financing status	Project not funded and seeking full funding
Project size (US\$)	Not reported

City	City of Buenos Aires, Argentina
Title	Solar Map of the City
Description	Develop a tool to provide information to citizens and public managers about the possibility of generating renewable energy at specific points in the city and about the economic, environmental and social benefits this generates.
Development status	Project structuring
Financing status	Project not funded and seeking full funding
Project size (US\$)	Under 500,000

City	City of Buenos Aires
Title	Incentives and financing lines to promote residential retrofit (credits)
Description	Implement a 5-year Residential Retrofit Program, reaching 36,500 homes. 92,000 tons of CO2 could be avoided.
Development status	Project structuring
Financing status	Project not funded and seeking full funding
Project size (US\$)	Under 500,000

Appendix 4: Costa Rica aggregation opportunity

City	Alajuela, Costa Rica
Title	Project for the separation, collection, transportation, storage and treatment of ordinary solid waste of organic origin generated in the Municipal Market of Alajuela
Description	The organic waste generated in the municipal market is managed by a company, converting the waste into organic fertilizer, which is then taken to the nursery to be used in plants. During 2022, 33.68 tons of waste were managed.
Development status	Implementation
Financing status	Other
Project size (US\$)	Under 500,000

City	Montes de Oca, Costa Rica
Title	Implementation of actions that allow the composting of biodegradable waste produced in the canton and processing it in the same facilities, creating by-products for gardening.
Description	This project aims to reduce the amount of organic waste sent to landfills and consequently reduce greenhouse gas emissions from the disposal of this waste. Since 2019, the local government has implemented the home composting project by delivering home-made rotating composters. This project has provided local treatment to household organic waste, avoiding



	the sending of organic waste to the landfill. This project seeks to provide local treatment to gardening waste generated by the cleaning of parks and public spaces in the canton.
Development status	Pre-feasibility/impact assessment
Financing status	Other
Project size (US\$)	Under 500,000

City	Municipalidad de Belén, Costa Rica
Title	Increase the amount of recoverable waste in Bethlehem
Description	Currently, 51% of the recyclable waste is recovered, and an increase in the amount collected is planned.
Development status	Implementation
Financing status	Project partially funded and seeking additional funding
Project size (US\$)	Under 500,000

City	Municipalidad de Belén, Costa Rica
Title	Composting
Description	Increase the number of homes and businesses that compost
Development status	Implementation
Financing status	Project partially funded and seeking additional funding
Project size (US\$)	Under 500,000

City	Municipalidad de La Unión, Costa Rica
Title	Composting
Description	Increase composting generation through: Participatory workshops with communities, purchase of community composters, providing training with economic options to build composters with materials available in communities, increase composting in shops and greengrocers
Development status	Implementation
Financing status	Project partially funded and seeking additional funding
Project size (US\$)	Under 500,000

City	Municipalidad de La Unión, Costa Rica
Title	Recycling and strengthening the collection of recoverable waste
Description	The action is made up of two parts: 1- Increase the amount of recyclable waste collected through recyclable waste recovery campaigns, by taking advantage of the raw material of this waste, thus extending the useful life of the landfill. 2- Strengthen the collection of recyclable waste by scrap metal dealers in the canton, by providing training to scrap metal dealers or informal collectors on types of waste or their management with the help of the Ministry of Health, as well as providing tools and knowledge so that these managers can be formalized.
Development status	Implementation
Financing status	Project partially funded and seeking additional funding
Project size (US\$)	Under 500,000



City	Municipalidad de La Unión, Costa Rica
Title	Reduction in waste through incentives for businesses and households
Description	Generation of incentives for companies that demonstrate actions associated with waste reduction, such as the replacement of single-use plastic, plastic rejection or similar. It can start in institutions and businesses in downtown Tres Ríos and continue to Concepción. Once the good practices have been identified, the corresponding recognitions would be delivered and disseminated.
Development status	Scoping
Financing status	Project not funded and seeking partial funding
Project size (US\$)	Under 500,000

City	Municipalidad de La Unión, Costa Rica
Title	Avoid food waste
Description	Preventing recyclable foods, such as fruits, vegetables, and others, from ending up in landfills by coordinating businesses and greengrocers with daycare centers, community associations, CREA homes, institutional cafeterias, and non-profit organizations
Development status	Scoping
Financing status	Project not funded and seeking partial funding
Project size (US\$)	Under 500,000

City	Santa Ana, Costa Rica
Title	Improving organic waste management through composting
Description	This project consists of promoting composting techniques on a residential and community scale that allow reducing the amount of organic waste sent to landfills and the associated greenhouse gas emissions. The project seeks to build a municipal composting plant, for which it is proposed to carry out the necessary feasibility studies. This project aims to: 1. Reduce the amount of garbage that ends up in landfills. 2. Close the organic matter cycle. 3. Obtain a high-quality fertilizer for our plants, without any type of chemical product. 4. Return organic matter to the soil, thus enriching it.
Development status	Scoping
Financing status	Project not funded and seeking partial funding
Project size (US\$)	Unknown

City	Santa Bárbara, Costa Rica
Title	Composting using rotating drums
Description	The action is aimed at providing 200 families with rotating composters for the treatment of organic waste. To do this, a call will be made where interested families must register and participate for a composter according to the criteria previously established at the municipal level. Likewise, informative talks and training will be held for the families that were selected for better management of organic waste at home.
Development status	Scoping



Financing status	Project not funded and seeking partial funding
Project size (US\$)	Under 500,000

Appendix 5: Philippines aggregation opportunity

City	Baguio City, Philippines
Title	Solid Waste Disposal Facility
Description	One of the major problems of the City is solid waste disposal, the City is in need of a Solid Waste Disposal Facility to address the City's increasing wastes generation. Every year a large chunk of the City's budget is allocated to Solid Waste related activities. A long-term solution to the City's most serious problem is needed for the betterment of the City and its residents.
Development status	Pre-feasibility/impact assessment
Financing status	Project not funded and seeking full funding
Project size (US\$)	Not reported

City	City Government of Makati, Philippines
Title	Formulation and Updating of Environmental-related plans
Description	This project aims to formulate and update the (1) Air Quality Management Plan, (2) Greening Master plan, and (3) Solid Waste Management Plan in alignment with Republic Act 9003 for Ecological Solid Waste Management and other national mandates. The formulation of the plan will facilitate the programs and projects of the city and guide the environmental management sector in the implementation of short-, medium- and long-term plans for the city.
Development status	Scoping
Financing status	Project not funded and seeking full funding
Project size (US\$)	Under 500,000

City	City of Ormoc , Philippines
Title	Solid Waste Management Facility and Renewable Energy Production
Description	The project aims to improve services and access to an integrated waste management facility that aims to achieve waste reduction, waste minimization, and resource recovery by developing a waste to energy facility to increase power supply thereby providing good quality of life. This includes the construction of a new cell of the sanitary landfill and other essential facilities as required under RA 9003. It also includes procurement of additional equipment.
Development status	Pre-feasibility/impact assessment
Financing status	Project not funded and seeking full funding
Project size (US\$)	5 million < 10 million

City	Dipolog City, Philippines
Title	Waste-to- Energy Project
Description	The project is geared towards proper management of solid waste, particularly zero-waste management as prescribed under RA 9003. The project is expected



	to gain financial returns from processing of biodegradable wastes into biogas and soil compost, and non-biodegradable wastes into fuel or energy.
Development status	Scoping
Financing status	Project not funded and seeking full funding
Project size (US\$)	1 million < 5 million

