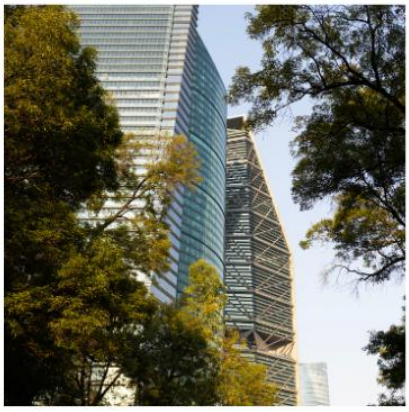
PROSPECT





Learning Handbook on Third-Party Financing (TPF)

Co-funded by the European Union under project ID 101212861. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.

Technical information

Project Acronym	PROSPECT CUBE
Project Name	Capacity Building for Local and Regional Authorities
Grant Agreement No.:	101212861
Topic:	LIFE-2024-CET-LOCAL
Type of Actions:	LIFE-PJG (LIFE Project Grants)
Project Coordinator:	Institute for European Energy and Climate Policy (IEECP)
Website url:	https://h2020prospect.eu/

About the project

PROSPECT aims to strengthen the capacity of local and regional authorities (LRAs) across Europe to implement sustainable energy and climate actions by reducing reliance on public funding and increasing the use of innovative financing schemes (e.g., one-stop-shops, energy agencies, energy communities). The project offers a peer-to-peer Capacity Building Programme (CBP) tailored to the needs and time constraints of LRAs, available in multiple languages and structured in adaptable learning modules. Through large-scale outreach, including very small and remote LRAs, PROSPECT CUBE acts as an entry point to EU programmes and financing opportunities for authorities with limited experience in the field.

PROSPECT CUBE builds upon two successful Horizon 2020 initiatives: PROSPECT (2017–2020) and PROSPECT+ (2022–2025).

Disclaimer

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Climate, Infrastructure and Environment Executive Agency (CINEA). Neither the European Union nor the granting authority can be held responsible for them.

Copyright message

This report, if not confidential, is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0); a copy is available here: https://creativecommons.org/licenses/by/4.0/. You are free to share (copy and redistribute the material in any medium or format) and adapt (remix, transform, and build upon the material for any purpose, even commercially) under the following terms: (i) attribution (you must give appropriate credit, provide a link to the license, and indicate if changes were made; you may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use); (ii) no additional restrictions (you may not apply legal terms or technological measures that legally restrict others from doing anything the license permits).

Table of Contents

Contents

1. Introduction 5

1.1. Purpose of this handbook 5

1.2. Target audience 6

1.3. How to use this handbook 6

2. Understanding the TPF scheme 7

2.1. How it works in practice? 7

2.2. Arrangements, types and characteristics 9

2.2.1. Types 11

2.2.2. Key characteristics across the TPF models 22

2.3. Why TPF matters? Benefits and added value for LRAs 24

2.4. Sector-wide application: When and where TPF can be used? 25

2.5. Main stakeholders involved 26

3. Setting up a TPF scheme: A quick step-by-step guide 28

3.1. The TPF implementation roadmap 28

3.2. TPF checklist – Key questions for successful setup 32

4. Critical conditions influencing TPF implementation 33

4.1. Drivers and success factors 33

4.2. Barriers and limitations 33

4.3. Key risk dimensions 34

4.4. Synthesis of critical conditions affecting TPF implementation 35

5. Summary of key takeaways 36

List of Figures

Figure 1. Simplified schematic representation of a TPF model 7

Figure 2. Illustrative representation of the operational flow of a TPF scheme 8

Figure 3. Illustrative representation of the contractual and financing relationships in ESCO-based TPF arrangements 10

List of Tables

Table 1. Comparison of ESCO-led and Third-Party Financing structures 10

Table 3. Core characteristics of PPAs 12

Table 4. Common PPA models/variations relevant to LRAs 12

Table 5. Core characteristics of leasing and service-based models 15

Table 6. Common leasing models/variations relevant to LRAs 15

Table 7. Core characteristics of vendor financing 17

Table 8. Core characteristics of on-bill schemes 19

Table 9. Core characteristics of on-tax financing 20

Table 10. Cross-cutting characteristics of TPF models 22

Table 11. TPF vs. Complementary Instruments: A Conceptual Comparison 23

Table 12. Indicative overview of TPF models applications across sectors and type of investment 25

Table 13. Primary stakeholder responsibility matrix 26

Table 14. Secondary stakeholder engagement matrix 27

Table 15. Comparison of EPC and TPF implementation processes 28

Table 16. Summary of critical conditions influencing TPF schemes 35

Table 17. Summative overview of the main TPF models and their typical cross-sectoral application 36

List of abbreviations

Abbreviation	Description
CAPEX	Capital Expenditure
CfD	Contract-for-Difference
CHP	Combined Heat and Power
EE	Energy Efficiency
ELENA	European Local Energy Assistance
EPC	Energy Performance Contracting
ESA	European System of (national and regional) Accounts
ESCO	Energy Service Company
EV	Electric Vehicle
€/kWh	Euro per Kilowatt-hour
FIT	Feed-in Tariff
HVAC	Heating, Ventilation, and Air Conditioning
IGA	Investment Grade Audits
IRR	Internal rate of return
IPMVP	International Performance Measurement and Verification Protocol
LRA	Local and Regional Authority
MEAT	Most Economically Advantageous Tender
M&V	Measurement and Verification
OBF	On-Bill Financing
OBR	On-Bill Repayment
OPEX	Operational Expenditure
OSS	One-Stop-Shop
PPA	Power Purchase Agreement
RES	Renewable Energy Sources
SME	Small and Medium Enterprises
SPV	Special Purpose Vehicle
TOB	Tariffed On-Bill
TPF	Third-Party Financing

1. Introduction

While local and regional authorities (LRAs) across Europe are at the forefront of the transition towards a sustainable and climate-resilient future, delivering on the ambitious targets set by the European Green Deal and its supporting legislative framework requires a substantial mobilisation of investment. And this is where a major challenge emerges; many municipalities struggle to secure the necessary financing, as traditional funding sources, such as direct grants or municipal budgets, are no longer sufficient to support large-scale climate action.

In practice, the key barrier for many LRAs remains the "upfront cost barrier". Even when projects are technically sound and capable of generating long-term savings, the high initial capital expenditure (CAPEX) often competes with other essential public services. In addition, strict debt ceilings and the technical complexity associated with developing and managing specialised energy assets can further limit their ability to initiate new projects. As a result, many viable investments remain unrealised, creating a persistent "funding deadlock" driven by immediate financial constraints and the limitations of traditional public procurement approaches.

Against this background, Third-Party Financing (TPF) offers a strategic pathway forward. Under TPF, an external partner provides the necessary capital, technical expertise, and management for a project, while the LRA pays for the "output" (such as renewable electricity or a mobility service) over a long-term agreement. By leveraging private capital in this way, LRAs can accelerate their climate transition while transferring technical risks and preserving their own borrowing capacity for other public needs.

1.1. Purpose of this handbook

This handbook guides LRAs through the concepts, principles and practical requirements of Third-Party Financing (TPF) schemes. Moving beyond traditional Energy Performance Contracting (EPC), it explores approaches such as Power Purchase Agreements (PPAs) and Leasing, showing how external capital can support the delivery of sustainable energy and climate actions. It also explains the organisational relationships underpinning TPF arrangements, particularly in connection with broader Public-Private Partnership (PPP) frameworks, and outlines the key steps for effective design and implementation.

Drawing on the experience of previous PROSPECT initiatives and the peer-learning exchanges between participating cities, the handbook incorporates practical lessons and implementation insights from across Europe. These experiences complement the theoretical concepts presented and provide LRAs with actionable guidance for evaluating and applying TPF schemes in different local contexts.

1.2. Target audience

As the successful implementation of TPF requires cross-departmental collaboration within LRAs, this handbook is intended for a broad range of stakeholders, including:

- Elected officials and senior managers, who define strategic priorities, approve investment approaches, and enable the use of externally financed delivery models within long-term climate and infrastructure strategies.
- Energy, sustainability, and technical teams, who identify project opportunities and assess which assets are suitable for implementation under TPF schemes.
- Finance and accounting units, responsible for evaluating funding structures, assessing budgetary implications, and ensuring that TPF arrangements are aligned with financial regulations and reporting requirements.
- Legal and procurement departments, who design and manage contractual frameworks, ensure compliance with public procurement rules, and oversee negotiations with third-party providers.
- Project development units or coordination teams, where available, responsible for structuring projects, aligning internal stakeholders, and supporting the preparation and implementation of TPF initiatives.

The handbook may also be useful for external stakeholders - such as energy agencies and One-Stop-Shops (OSSs), financial institutions, and technical advisors - who support LRAs in delivering TPF projects.

1.3. How to use this handbook

This handbook is designed as a modular learning and reference tool, allowing readers to engage with its content according to their role, experience and specific needs. It follows a structured progression from conceptual understanding to practical implementation, guiding LRAs through the main elements of TPF, from financing models and organisational arrangements to implementation steps and success factors. The intention is to help authorities better understand the opportunities and challenges associated with TPF schemes, assess their organisational and financial readiness, and support the development of projects suited to their local and regional contexts.

While the handbook can be read sequentially for a comprehensive overview, each section is also designed to function independently, enabling readers to focus on the topics most relevant to their needs or revisit specific elements when required.

2. Understanding the TPF scheme

TPF is an innovative financing mechanism that enables LRAs to implement energy and climate projects without relying primarily on their own upfront capital and potentially without increasing public debt. At its core, it is a service-based model: instead of the LRA purchasing and owning an asset (such as a solar installation or an electric vehicle fleet), an external partner - the "third party" - mobilises the necessary capital, assumes part or all of the relevant technical and operational risks, and manages project implementation (Bertoldi & Rezessy, 2005; Slomiak, 2024; Todeschi et al., 2025).

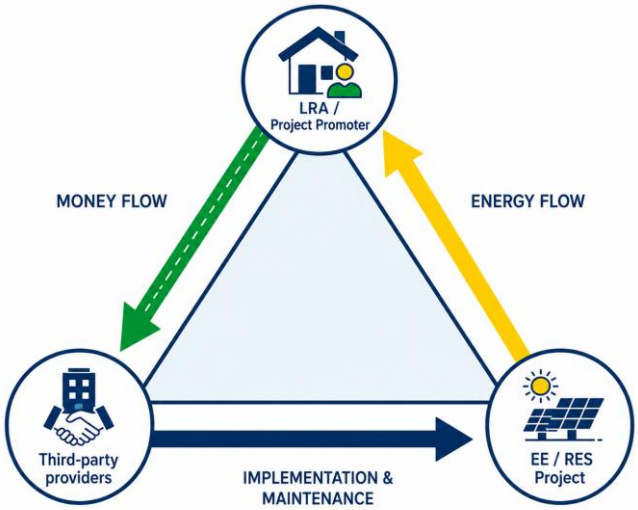


Figure 1. Simplified schematic representation of a TPF model (Source: Adopted from Solar Permit Solutions, 2026)

Under this arrangement, LRAs enter into long-term contracts to pay for the performance or the output of the investment, based on the savings generated (e.g. reduced energy costs) or the revenues associated with the project. This may allow projects to be treated as "off-balance sheet", meaning they do not count towards municipal debt limits under standard Eurostat accounting rules[1], provided that a sufficient level of risk is transferred to the "third party" provider (EIB, 2021; Eurostat & EIB, 2018).

2.1. How it works in practice?

The operational success of a TPF scheme relies on a circular exchange of value, where the investment is repaid through the performance of the asset itself. In practice, the scheme operates on practices similar to those of a revolving fund, whereby capital is gradually recovered through energy savings or service

[1] Refers to the European System of Accounts (ESA 2010), which sets the framework for recording public debt. According to Eurostat & EIB (2018) guidance, investments may be classified as "off-balance sheet" where the third-party provider assumes "construction risk" and "either availability" or "performance risk", meaning they do not count towards municipal debt.

revenues to cover project costs over time. The primary distinction lies in the source of capital: in a TPF model, funding is provided primarily through external sources, reducing the need for direct public investment and, depending on the contractual and risk allocation structure, potentially limiting impacts on the balance sheet or debt capacity of the city or region (Interreg Europe, 2019; Todeschi et al., 2025).

The process begins with the LRA identifying and bundling energy-related needs to create an investment opportunity at a scale attractive to external investors. Once a contract is established, the third-party provider manages the entire implementation phase - from design and financing to delivery and maintenance - while the LRA acts as the project host, with no (significant) upfront financial exposure.

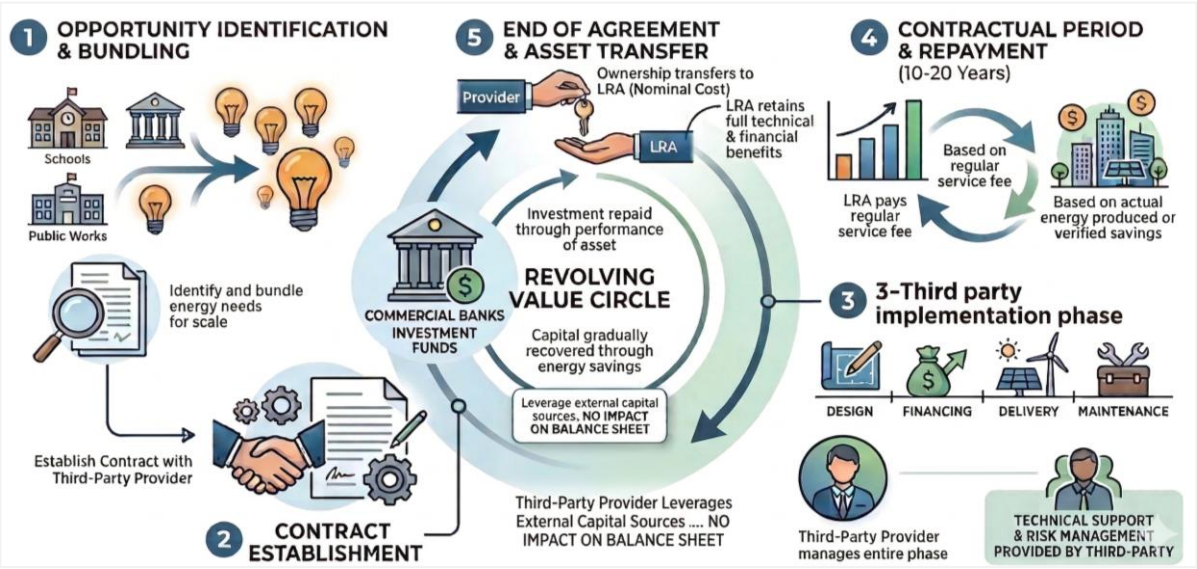


Figure 2. Illustrative representation of the operational flow of a TPF scheme
(Source: Author's own elaboration / AI-enhanced)

Throughout the contractual period, typically lasting 10 to 20 years, the LRA pays a regular service fee to the provider, based on the actual energy produced or the verified savings achieved. Some agreements may also include provisions for transferring the assets to the LRA at the end of the term, under predefined conditions or residual value arrangements. The resulting accounting treatment and balance-sheet implications ultimately depend on the allocation of risks and responsibilities between the parties as well as the applicable national framework (Energy Charter Secretariat, 2003).

Focus Box 1: The role of public support and blending

While TPF relies primarily on private capital, public funding - such as EU Structural Funds (ERDF), REPowerEU grants or technical assistance (ELENA) - helps de-risk projects, by supporting preparation, covering financial gaps or providing guarantees that improve financing conditions.

By blending public and private funding, LRAs can deliver more ambitious projects that may not be financially viable through savings or service revenues alone.

2.2. Arrangements, types and characteristics

The way TPF schemes are structured depends on how responsibilities for financing, implementation, and risk are distributed among the actors involved. While the core principles remain consistent, the specific contractual and financing arrangements can vary depending on the model applied and the context.

In many cases, TPF arrangements are implemented alongside EPC frameworks, where the contractual relationship between the LRA and the service provider defines service delivery, while the financing structure determines how capital is mobilised and how risks are allocated.

Within the TPF ecosystem, a range of actors interact, assuming different roles in financing and delivering a project. The third-party investor - which may be a private company, a cooperative, or even a public entity - acts as both a technical and financial intermediary, creating the conditions required to make the project bankable for financiers such as commercial banks or investment funds. While in developed markets this role is often fulfilled by an ESCO, the model remains flexible and can accommodate different organisational structures (Todeschi et al., 2025).

A common configuration involves a three-way ("tripartite") arrangement between:

- the LRA, which provides access to the site and commits to a long-term service payment,
- the ESCO, which is responsible for the technical design, the implementation, and the performance guarantees, and
- the third-party financier, which provides the upfront capital.

Crucially, in this setup financiers do not necessarily take on the technical risk; instead, they rely on the ESCO's performance guarantees to de-risk the LRA's ability to meet its payment obligations, thereby securing that the cash flows required for debt servicing are underpinned by the technical success of the project (Bertoldi & Rezessy, 2005). This performance-based approach has proven particularly effective in the public sector, where assets such as public buildings and street lighting remain among the key drivers of the energy service market across Europe (Moles-Grueso et al., 2023).

Alternatively, when a dedicated external financier is involved instead of relying on the ESCO's internal resources, the structure of the arrangement may differ. In such cases, the project is typically treated as a service contract rather than public debt, which is particularly important for LRAs, as it can preserve their borrowing capacity keeping the liability off the balance sheet. In addition, specialised financiers often benefit from a lower cost of capital compared to technical service providers, enabling LRAs to leverage

more favourable financing conditions and improve the overall financial viability and scale of the project (Bertoldi & Rezessy, 2005; Eurocontract, 2010).

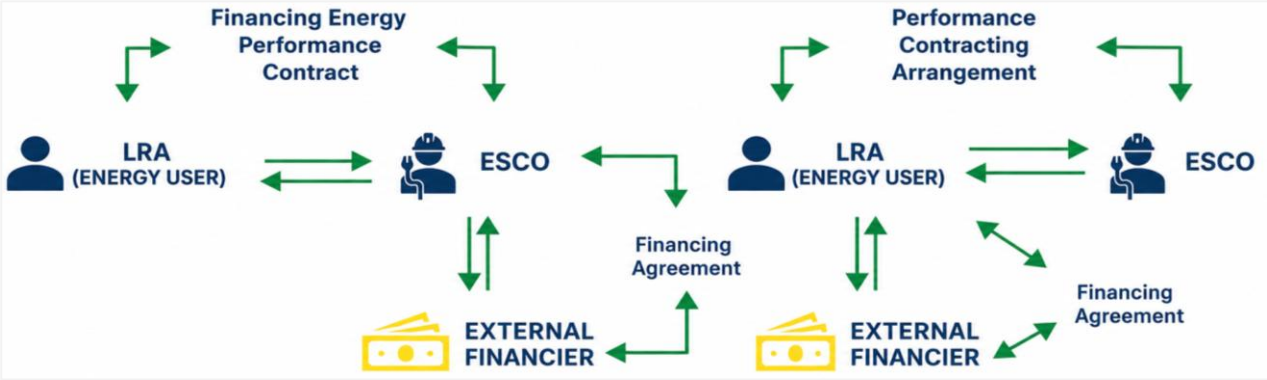


Figure 3. Illustrative representation of the contractual and financing relationships in ESCO-based TPF arrangements (Source: Author's own elaboration / AI-enhanced)

The choice between the two arrangements has important implications for the distribution of responsibilities, risk allocation and accounting treatment, as summarised in Table 1.

Table 1. Comparison of ESCO-led and Third-Party Financing structures

Feature	ESCO-Led Financing (Left side of Figure 3)	LRA/User-Led Financing (Right side of Figure 3)
Who finances the investment?	The ESCO raises capital (often via bank loans)	A third-party investor or financier provides capital
Role of the LRA	Off taker of energy/services	Off taker of energy/services (no direct borrowing)
Risk allocation	ESCO carries technical and often financial risk	Risks are shared: financier carries financial risk, ESCO ensures performance (Eurostat rules)
Balance sheet treatment	Typically, off the LRA's balance sheet (subject to risk transfer)	Often off-balance sheet if risk transfer conditions are met
Typical use case	When ESCO has strong balance sheet and financing capacity	When specialised financiers offer better capital conditions or scale

Focus Box 2: TPF vs PPPs – Understanding the key differences

TPF represents a targeted and flexible approach, primarily applied to specific EE or RES investments. Rather than covering entire infrastructure systems, it focuses on performance or service-based arrangements repaid through savings or service fees, making it less complex and more standardise, so easily accessible to LRAs, particularly for smaller-scale or modular projects.

By contrast, PPPs are long-term arrangements where private partners design, finance, build, and operate public infrastructure or services, typically assuming significant construction, availability, or demand-related risks through dedicated structures such as Special Support Vehicles (SPV).

2.2.1. Types

LRAs can draw on a range of TPF models depending on the type of investment, the desired level of risk transfer, and their internal technical and financial capacity. Commonly applied approaches include:

- PPAs,
- Leasing and "As-a-Service" models and
- Vendor Financing (Equipment-driven TPF)

In addition, repayment-oriented mechanisms such as on-bill and on-tax financing can also support the implementation of TPF schemes (Ahmed, 2023; Bertoldi & Rezessy, 2005; Energy Charter Secretariat, 2003; Enerinvest, 2018; Eurocontract, 2010; EIB, 2022; Mihalciuc, 2020; Todeschi et al., 2025).

2.2.1.1. PPAs

A PPA is a long-term bilateral contract under which an electricity buyer agrees to purchase a defined amount of power from a specified generation source at agreed terms and for a fixed period. From a financing perspective, PPAs are key instruments for enabling private investment in RES infrastructure, as the long-term revenue certainty they provide supports access to project finance and reduces investment risk (Ahmed, 2023; EIB, 2022; Todeschi et al., 2025).

The model is widely used in public-sector settings, especially for solar PV installations on public buildings and other municipal sites (Enerinvest, 2021; IRENA, 2023; Papazoski and Mishev Law Firm, 2024) .

How PPAs work in practice?

In the context of LRAs, the arrangement typically involves a third-party developer (the "Seller") - often backed by one or more financial institutions - that finances, builds, owns, and operates a RES asset - most commonly a solar PV or wind installation - while the LRA acts as the buyer ("Off taker"), purchasing the electricity generated at a predetermined price.

This structure allows LRAs to access renewable electricity without upfront investment, while providing the third-party developer with a predictable revenue stream that supports project financing[2].

[2] In some contexts, particularly outside Europe, private developers may also benefit from tax incentives linked to RES investments, which can significantly enhance project viability. Such incentives are typically not accessible to public authorities due to their tax-exempt status, further reinforcing the role of private partners in delivering these investments (Cory et al., 2009).

What are the key characteristics of a PPA?

PPAs are defined by a set of core characteristics that distinguish them from other TPF models, particularly in terms of risk allocation, financing structure, and contractual design. These are summarised in Table 2.

Table 2. Core characteristics of PPAs

Feature	Description
Long-term contractual structure	Agreements typically span 10–20 years, reflecting the lifetime of the RES assets
Price certainty and financial predictability	Electricity is supplied at a pre-agreed price, providing a hedge against energy market volatility and enabling stable budget planning.
Third-party ownership and operation	The third-party developer retains ownership of the asset and is responsible for its design, construction, operation, and maintenance.
Performance or delivery-based payments	Payments are linked either to the electricity physically delivered or to contractual financial settlements.
No upfront capital requirement for the LRA	The LRA does not finance the asset directly, but pays for the energy or the contractual value over time.

What are the most common PPA models/variations?

PPAs can take different forms depending on how electricity is delivered, how financial flows are structured, and the regulatory context in which they are implemented. This flexibility allows allowing LRAs to adapt the model to their needs and local conditions.

At a high level, two broad categories can be distinguished (EIB, 2022):

- Commercial PPAs, where the counterparty to the generator is a non-governmental entity (e.g. utility, power trader, or corporation) with a commercial interest in procuring electricity.
- Government PPAs, where the counterparty to the generator is a government entity offering a competitively set Contract-for-Difference (CfD) or an administratively set Feed-in Tariff (FIT).

These categories can be further broken down into the following models that are most relevant for LRAs.

Table 3. Common PPA models/variations relevant to LRAs

Model/variation	Description and key characteristics
Physical PPAs	Involve the direct (physical) delivery of electricity to the byer (off taker).
	They can take the form of: • On-site arrangements, where generation occurs on the municipal property (e.g. rooftop solar systems). • Off-site or sleeved arrangements, where electricity is delivered via the grid, often through a “sleeving” arrangement with an intermediary supplier.
	Particularly suitable where generation can be matched with consumption at the local level (Ahmed, 2023).

Virtual (vPPAs) or synthetic PPAs	Financial contracts where no physical electricity is delivered; instead, the parties settle the difference between a fixed contract price and the market price (CfD).
	Provide a hedge against price volatility and support RES deployment (Ahmed, 2023).
Aggregated PPAs	Combine demand from multiple smaller buyers ("off takers") to reach sufficient scale of investment.
	Particularly relevant for smaller LRAs or groups of municipal entities and local public organisations with fragmented load, seeking to participate in large-scale renewable projects (EIB, 2022).

Apart from these models, cross-border PPAs are also possible. These involve electricity contracted across different national contexts and can support access to RES resources beyond local availability. However, they introduce additional complexity related to regulatory frameworks, interconnection capacity, and price-basis risks, and are therefore more demanding in terms of legal and technical capacity (EIB), 2022).

What is the main value and implications for LRAs?

For LRAs, PPAs represent a strategic mechanism to mobilise private investment while securing long-term access to RES. By shifting from asset ownership to energy procurement, LRAs can avoid upfront capital expenditure and benefit from predictable, long-term pricing, reducing exposure to volatile energy markets. At the same time, they are enabled to transfer key risks such as construction, operational performance, and maintenance, to the private sector, allowing the focus on service delivery rather than asset management. Furthermore, PPAs play an important role in supporting local and regional decarbonisation objectives by enabling the development of new renewable energy capacity.

Realising the benefits of PPAs requires LRAs to have sufficient institutional capacity to manage contractual complexity, assess risks, and align procurement, financial, and accounting considerations. PPAs are therefore most effective when supported by robust expertise within the LRA.

2.2.1.2. Leasing and "As-a-Service" models

Leasing is a financing mechanism that enables LRAs to access and use energy-related equipment or infrastructure through regular payments over a defined contractual period, without requiring upfront capital investment. More advanced configurations include "as-a-service" models, where leasing evolves into performance-based service arrangements focused on predefined outcomes (Mihalciuc, 2020; NetZero Cities, 2025; Todeschi et al., 2025).

In public-sector leasing and "as-a-service" arrangements are widely used for CHP systems, public buildings, and other municipal assets, and may in some cases be implemented through dedicated project structures such as SPVs (Economidou M. & Bertoldi P., 2014).

How leasing works in practice?

Leasing is a flexible contractual arrangement involving the lessor (asset owner), the lessee (user), and, in many cases, a financial intermediary supporting or structuring the financing. Under this arrangement, the lessor typically retains ownership of the asset, as well as the responsibility for installation, maintenance, and performance monitoring, as specified in the contract (Grosu & Hlaciuc, 2018).

In the context of LRAs, leasing represents one of the most established mechanisms for overcoming the upfront cost barrier in EE and clean technology investments, including, inter alia, lighting systems, heating, ventilation and air conditioning (HVAC) installations, and electric vehicle (EV) fleets. Rather than purchasing the asset outright, LRAs (as the lessee) acquire the right to use it over the contractual period, in exchange for an agreed fee (lease payment), which may be paid either to the lessor - often an ESCO or an ESCO client (asset owner) - or to a financial intermediary, depending on the contractual arrangement.

In some configurations, payments may be structured as periodic instalments (annuities), while in others they may take the form of a service-based feed linked to asset use or performance. Depending on the contractual setup and the risk allocation arrangement, these payments may be treated as operational expenditure (OPEX) or classified as debt -related obligations under applicable accounting frameworks. Under specific conditions, leasing can therefore support investment implementation without requiring significant upfront capital expenditure from the LRA, while reducing part of the operational and technical burden associated with asset management (SECCA, 2025; Todeschi et al., 2025).

In more advanced "as-a-service" models, payments are linked to performance indicators such as availability, uptime, or service quality. This creates strong incentives for the provider to ensure efficient and reliable operation throughout the contract period, aligning financial flows with service delivery outcomes (Mihalciuc, 2020; NetZero Cities, 2025).

What are the key characteristics of leasing models?

Leasing and "as-a-service" models share a set of defining features that distinguish them from both traditional public procurement and other TPF approaches, particularly in terms of ownership arrangements, payment structures, and allocation of responsibilities.

Table 4. Core characteristics of leasing and service-based models

Feature	Description
Separation of ownership and use	The asset remains under the ownership of the provider, while the LRA obtains the right to use it under agreed contractual terms.
External asset provision	Equipment and infrastructure are supplied and financed by a third party, eliminating the need for direct public investment at the outset.
Structured repayment over time	Costs are recovered through scheduled payments over the duration of the contract.
OPEX treatment	Payments are generally classified as operational expenditure, supporting budget flexibility and reducing pressure on capital budgets.
Performance-based service delivery	In service-based ("as-a-service") models, payments mainly depend on availability, uptime, or performance.
Allocation of technical responsibilities	Responsibilities for installation, operation, and maintenance are often assigned to the provider, reducing the technical and administrative burden on LRAs.
Flexible contractual configurations	Leasing agreements can be adapted, depending on ownership transfer, risk allocation, and accounting treatment.

What are the most common leasing models/variations?

At a high level, leasing may differ in terms of amortisation structure and residual asset value, including:

- full-amortisation arrangements, where the total cost of the asset is recovered over the lease term
- part-amortisation arrangements, where a residual value remains at the end of the contract.

Some models may also require advance payments, although many arrangements - particularly those linked to EPC frameworks - are designed to minimise or eliminate upfront costs for LRAs (SECCA, 2025). Together, these elements shape the main leasing models relevant to LRAs, presented in Table 5.

Table 5. Common leasing models/variations relevant to LRAs

Model/variation	Description and key characteristics
Operational leasing ("as-a-service") (Mihalciuc, 2020)	The LRA pays for the use or performance of the asset, with most ownership-related risks and benefits remaining with the provider throughout the contractual period.
	Typically, these arrangements: • are shorter than the asset's economic lifetime, • take the form of "as-a-service" models • are associated with part-amortisation structures, with a residual value remaining at the end of the contract.

Capital/financial leasing (Mihalciuc, 2020)	The LRA makes regular payments covering most or all of the asset's value over time, often resulting in the transfer of ownership and a substantial share of ownership-related risks and benefits to the LRA at the end of the contract.
	Typically, these arrangements: • are long-term, in terms of duration, • are structured as full-amortisation contracts, whereby the economic value of the asset is recovered over the lease period. Under certain accounting frameworks, these arrangements may result in on-balance-sheet treatment.
Sale-and-leaseback (SECCA, 2025)	The LRA sells an existing asset to a financier and leases it back for continued use.
	The approach: • enables the LRA to unlock capital embedded in existing infrastructure ("hidden reserves") and reinvest it in EE or renovation projects, • is particularly relevant for large-scale or bundled renovation programmes.

What is the main value and implications for LRAs?

Leasing and "as-a-service" models provide LRAs with a flexible pathway to deploy EE and clean technology solutions without requiring upfront capital investment. In certain configurations, they may enable expenditure to shift from capital (CAPEX) to operational (OPEX), supporting project implementation while potentially preserving borrowing capacity and maintaining budgetary flexibility. At the same time, they facilitate the transfer of technical and operational responsibilities to external providers, reducing implementation risks and administrative burden for LRAs.

These models are particularly suitable for standardised and modular technologies, where performance can be clearly defined and monitored over time. However, their effective use requires careful contract design, including clear allocation of responsibilities, performance criteria, and long-term cost considerations. In addition, successful implementation depends on sufficient institutional capacity to structure agreements, manage contractual obligations, and monitor implementation over time.

Leasing shifts the focus from asset ownership to service delivery, making long-term performance and effective contract management central to success. Its effectiveness depends on LRAs' ability to align contractual structures with public objectives while ensuring transparency and long-term value.

2.2.1.3. Vendor financing (equipment-driven TPF)

Vendor financing is an equipment-driven TPF model in which technology providers facilitate access to financing for the acquisition of their products. Unlike service-based models, it focuses on discrete assets - such as HVAC systems, heat pumps, or EV fleets - with financing embedded into the procurement process (Todeschi et al., 2025).

How vendor financing works in practice?

In vendor financing, an equipment supplier partners with a financial institution - such as a commercial bank, leasing company, or specialised fund – to offer financing at the point of sale. The LRA enters into a repayment agreement either directly with the financier or through the vendor, enabling the acquisition of equipment without upfront capital expenditure.

The financing typically covers the full investment cost and is repaid through regular instalments over a defined period. In many cases, these payments are aligned with the expected operational savings or efficiency gains generated by the equipment, helping to reduce the net financial burden on the LRA.

Unlike ESCO or service-based models, vendor financing generally involves limited performance guarantees. While vendors may provide warranties or technical assurances, the responsibility for the system performance and integration often remains with the LRA. As a result, the level of risk transfer is more limited compared to other TPF approaches (NetZero Cities, 2025; Todeschi et al., 2025).

What are the key characteristics of vendor financing?

Compared to service-based TPF models, vendor financing is characterised by financing structures centred on individual assets and more limited risk transfer. Its core characteristics are closely linked to its equipment-driven nature and integration within procurement processes.

Table 6. Core characteristics of vendor financing

Feature	Description
Asset-specific approach	Financing is tied to technology acquisition rather than integrated energy services
Point-of-sale finance	Financing is integrated into the procurement stage via vendor-financier partnerships
No upfront capital	Third-party capital covers initial costs, preserving LRA liquidity
Instalment-based repayment	Repayment occurs through fixed schedules, often mirroring projected savings
Warranty-linked	Risk transfer is typically partial, relying mainly on product warranties and technical assurances rather than full performance-based contracts
Low complexity	Easier to implement and to procure than full EPC models or leasing arrangements

What is the main value and implications for LRAs?

Vendor financing provides LRAs with a straightforward and accessible pathway to implement targeted energy upgrades without requiring upfront capital. It is particularly suitable for standardised technologies with predictable performance and limited integration complexity. However, because it does not typically include comprehensive performance guarantees or long-term service provision, LRAs must carefully assess technical specifications, expected savings, and lifecycle costs.

Vendor financing lowers the barrier to entry for clean technologies, but its long-term value depends on how effectively investments are integrated into broader energy and infrastructure strategies.

2.2.1.4. On-bill schemes (financing and repayment mechanisms)

On-bill schemes are financing mechanisms in which the cost of EE or RES investments is repaid through charges added to the energy bill. These models leverage the existing relationship between energy users and utilities to facilitate repayment, and in the context of LRAs, they are particularly suitable for programmes targeting public buildings, social housing, or citizen-focused initiatives, including measures such as high efficiency heating systems or building insulation (Bertoldi & Rezessy, 2005; Enerinvest, 2021).

How on-bill schemes work in practice?

Under on-bill schemes, upfront capital is provided either by the utility or by a third-party financier, and the investment is repaid through regular charges included in the energy bill of the LRA or end-user. In some configurations the utility itself provides the loan, which is then recovered through monthly billing, reducing administrative costs and simplifying repayment processes (NetZero Cities, 2025).

Three main approaches can be distinguished (ACEEE, 2026):

- The on-bill financing (OBF), where the utility provides the capital and recovers it directly through the energy bill. In this case, the loan may remain on the LRA's balance sheet.
- The on-bill repayment (OBR), where a third-party financier provides the capital, while the utility acts as a repayment collection agent.
- The tariffed on-bill (TOB), where investments are financed through a utility-led scheme, with repayment being embedded in a new tariff structure designed to recover costs through charges lower than the expected savings.

Especially in the latter case, repayment obligations are linked to the energy meter rather than the individual user. This allows the obligation to remain with the building even if occupancy changes, helping

to address the "split incentive" problem where owners are reluctant to invest in properties they do not occupy. Furthermore, in almost all cases, repayment structures are designed to achieve bill neutrality, whereby energy savings offset repayment costs, limiting the financial impact on the LRA and enabling projects to be effectively self-financing from day one (ACEEE, 2026; RenOnBill, 2020).

What are the key characteristics of on-bill schemes?

On-bill schemes are characterised by the integration of financing and repayment within existing utility billing systems. Their defining features relate to how financial flows are embedded in energy consumption patterns, shaping both risk allocation and implementation complexity.

Table 7. Core characteristics of on-bill schemes

Feature	Description
Utility-based repayment mechanism	Investment costs are recovered through regular charges on energy bills.
Integration within existing infrastructure	Established utility billing systems are used for repayment collection, reducing administrative burden.
Flexible capital sourcing	Capital may be provided by utilities or third-party (private) financiers.
Meter-linked obligation	Repayment is tied to the property's meter, ensuring continuity during transfers.
Bill-neutrality potential	Repayment is structures so that energy savings offset repayment costs.
Enhanced credit access	Utility payment history can support creditworthiness and expand access to finance.

What is the main value and implications for LRAs?

By converting energy savings into a structured repayment channel, on-bill schemes provide LRAs with a practical mechanism to scale EE and RES investments. Their integration into existing billing systems reduces administrative complexity, improves collection efficiency, and lowers perceived financial risk. In addition, by leveraging utility payment records as a proxy for creditworthiness, these schemes can extend access to financing to segments that may otherwise face barriers, including public entities and low-income households. However, their successful implementation depends on enabling regulatory frameworks, utility participation, and sufficient market maturity.

For LRAs, effectiveness of the scheme often hinges on their ability to coordinate stakeholders - particularly utilities and end-users - and to operate within a regulatory environment that supports enforcement mechanisms (e.g. payment recovery through billing), which are critical for ensuring high repayment rates.

2.2.1.5. On-tax (property-linked) financing

On-tax financing is a mechanism through which investments in EE or RES are repaid via charges added to local property taxes. In particular for LRAs, by leveraging their tax collection authority, the model minimises default risks and helps attract private capital at competitive rates.

In the European context, the approach is inspired by the successful Property Assessed Clean Energy (PACE) model in the United States (EuroPACE, 2021).

How on-tax financing works in practice?

Under this model, financing is attached to the property rather than the owner. A third-party financier provides the upfront capital for the investment, and repayment is made through an additional assessment or charge included in the property tax bill over a long-term period, with all obligations remaining in place even if ownership changes. This "transferability" ensures that those benefiting from the energy savings are responsible for repayment and significantly reduces risk for financiers, thereby enabling longer repayment periods (Pernetta, 2018; Triollet, 2022).

LRAs often play a central role in coordinating these schemes. In many cases, they act as aggregators or facilitators, bundling multiple projects - such as residential or small commercial building renovations - into larger investment portfolios capable of attracting institutional investors. This role is essential for overcoming market fragmentation and high transaction costs associated with small-scale renovations (Zubel & Styczyńska, 2018).

What are the key characteristics of on-tax financing?

On-tax financing is mainly distinguished by its property-linked structure and long-term financing horizon. Overall, the main features of the model are summarised in Table 8 below.

Table 8. Core characteristics of on-tax financing

Feature	Description
Property-linked repayment	Financing is secured through the property via tax mechanisms, rather than the individual's credit profile.
Extended repayment horizon	Long-term repayment periods improve affordability for deep renovations.
Seamless transferability	Repayment obligation automatically transfers to the owner upon ownership change.
Aggregation potential	Small projects can be bundled into larger portfolios to attract large-scale investment.
LRA enabling role	Coordinate scheme implementation, including tax collection and verification.
Market-value preservation	Supports deep retrofits that increase long-term local building value.

What is the main value and implications for LRAs?

On-tax financing enables LRAs to mobilise large-scale investment in building renovation and energy transition initiatives, particularly where access to finance is otherwise limited. By linking repayment to the property, it reduces financial risk and enables long-term renovation strategies that extend beyond individual ownership cycles. However successful implementation requires enabling legislation that allows tax-based recovery of the investment.

When properly implemented, on-tax financing serves as a powerful policy tool to meet local climate targets without increasing the public debt of the municipality. Its main implication for LRAs is the need for stronger administrative capacity to coordinate tax departments, financial institutions and technical auditors.

2.2.2. Key characteristics across the TPF models

Despite their differences in structure and application, TPF models share a common set of operational, financial, and contractual principles that shape how investments are financed, how risks and responsibilities are distributed, and how value is generated and recovered over time.

Table 9. Cross-cutting characteristics of TPF models

Characteristics	Description	Implications for LRAs
Use of third-party capital	Investments are financed by external actors (e.g. ESCOs, banks, investors), rather than public budgets	Enables project implementation without upfront capital expenditure
Repayment through performance or service	Costs are recovered over time through energy savings, service fees, or contractual payments	Aligns financial flows with project outcomes and operational performance
Shift from CAPEX to OPEX	Depending on the contractual setup and risk-sharing structure, investments may be treated as operational rather than capital expenditure	Preserve borrowing capacity and provide budgetary flexibility (where risks are appropriately allocated)
Risk allocation and transfer	Technical, financial, and operational risks are distributed between stakeholders depending on the model	Reduces exposure of LRAs, but requires careful contract design
Performance-based structures	Payments may be linked to energy savings, availability, or service delivery	Creates incentives for efficiency and long-term asset performance
Contractual complexity and duration	Agreements are typically long-term (often 10–20 years) and require detailed contractual frameworks	Requires institutional capacity for procurement, monitoring and enforcement
Asset ownership structures	Ownership may remain with the provider or be transferred at the end of the contract	Influences accounting treatment and long-term control of assets
Scalability and aggregation potential	Projects can be bundled to attract larger investors and reduce transaction costs	Enables implementation of large-scale programmes, especially in the buildings sector
Dependence on regulatory and market conditions	Implementation depends on enabling frameworks (e.g. procurement, accounting rules, utility regulation)	May limit applicability or require policy support
Access to private finance and innovation	Facilitates the mobilisation of private capital and technical expertise	Accelerates deployment of innovative technologies and solutions

Together, these characteristics define the core added value of TPF as a financing tool for LRAs, enabling the reduction of upfront financing barriers, improving project attractiveness, and supporting the implementation of more affordable energy transition investments. This value can be further enhanced when TPF is integrated into blended finance strategies involving complementary mechanisms - such as EPC arrangements, guarantee funds, or soft loans - which may involve external or third-party financing

components but do not necessarily constitute TPF mechanisms in themselves (EEFIG, 2022; European Commission, 2026; OECD, 2025; Todeschi et al., 2025).

Table 10. TPF vs. Complementary Instruments: A Conceptual Comparison

Mechanism	Role in a project	Relationship to TPF	Main risktaker
TPF	Primary financing structure where a third party provides all or part of the upfront capital	Core model: The baseline for external investment	Third-Party (Investor/ESCO)
EPC	Performance-based arrangement and investments repaid through verified energy savings	Delivery model: May be combined with TPF to secure revenue	Third-Party (ESCO)
Guarantee funds	Risk-sharing mechanisms partially covering potential losses for lenders or investors	De-risking tool: Lowers the interest rate for the TPF provider	Public/Managing Authority
Soft loans	Subsidy-based tool improving financing conditions and affordability for TPF projects	Concessional financing tool: Low-interest debt with favourable repayment terms	LRA / Project Owner

Focus Box 3: Distinguishing TPF from publicly supported debt instruments

A common source of confusion for LRAs concerns the distinction between TPF and publicly supported debt instruments, such as soft loans.

The core distinction

TPF is primarily characterised by the involvement of an external entity that provides upfront capital and assumes part of the technical and/or financial risk associated with project performance. In many TPF structures, repayment is linked to the verified performance of the investment or the service delivered.

Soft loans are debt instruments offering favourable financing conditions, such as reduced interest rates or extended repayment periods. Although the financing originates from an external institution, the LRA generally remains the borrower of record and retains the repayment obligation.

Why this distinction matters for LRAs

- Debt and accounting implications: Depending on the contractual structure and risk allocation, certain TPF/EPC arrangements may under specific conditions be treated differently from conventional debt obligations, potentially helping preserve municipal borrowing capacity.
- Performance risk allocation: In soft-loan structures, the LRA generally retains the repayment obligation even if the investment underperforms. In many TPF/EPC arrangements, part of the performance-related financial risk may instead be transferred to the third-party provider.

2.3. Why TPF matters? Benefits and added value for LRAs

TPF provides LRAs with a flexible and scalable mechanism to implement energy and climate investments under constrained public budgets. Either by mobilising private capital and reallocating risks across actors or facilitating a transition towards performance-based and service-oriented investment models, it enables the delivery of projects that might otherwise be delayed or unfeasible (Todeschi et al., 2025). Collectively the main TPF benefits for LRAs include:

ENABLING INVESTMENT UNDER BUDGET CONSTRAINTS. TPF allows LRAs to implement projects without significant upfront CAPEX, accelerating the deployment of EE and RES solutions.

MAINTAINING FISCAL FLEXIBILITY. Depending on the contractual structure and risk transfer allocation, investments can often be treated as service contracts, helping preserve LRAs' borrowing capacity and ensure compliance with debt ceilings and fiscal rules.

OPTIMISED RISK ALLOCATION. Technical and operational risks are shifted to specialised providers, reducing implementation uncertainty for LRAs and ensuring performance through rigorous contractual arrangements.

STABLE AND PREDICTABLE FINANCIAL PLANNING. Long-term payment structures - often fixed or linked to verified savings - support budget stability and reduce exposure to energy price fluctuations.

FASTER AND MORE EFFICIENT PROJECT DELIVERY. Access to established private-sectors procurement and financing routes streamlines the project development lifecycle moving from planning to implementation more rapidly than traditional tender processes.

ACCESS TO SPECIALISED EXPERTISE AND INNOVATION. TPF connects LRAs with experienced market actors, facilitating the adoption of advanced technologies that LRAs might not have the capacity to manage.

PERFORMANCE-ORIENTED ACCOUNTABILITY. By linking payments to specific outputs or service levels, TPF promotes long-term asset performance and provider accountability.

SCALABILITY AND PROGRAMME DEVELOPMENT. TPF allows for the bundling of smaller, discrete projects into larger portfolios, creating the scale necessary to attract institutional investor and achieve significant economies of scale.

DIRECT CONTRIBUTION TO CLIMATE MANDATES. TPF is a delivery vehicle for decarbonisation, allowing LRAs to meet their Sustainable Energy and Climate Action Plan (SECAP) targets and European Grean Deal obligations, while preserving municipal budget reserves turning energy savings into viable repayment stream.

2.4. Sector-wide application: When and where TPF can be used?

TPF is not a one-size-fits-all solution; its strength lies in its cross-sectoral adaptability and scalability, with its distinct operational models - based on energy supply, equipment use or service provision - enabling tailored approaches for different investment needs (Ahmed, 2023; Bolinger, 2009).

Table 11. Indicative overview of TPF models applications across sectors and type of investment

Sector	Indicative applications and main relevant TPF models
Public buildings (schools, offices, hospitals)	TPF is widely used for deep renovations and self-consumption solutions, often involving EE upgrades such as insulation, HVAC systems and lighting, and RES installations such as rooftop solar • Primary models: Leasing/"As-a-Service", Vendor financing, On-bill, Physical PPA • Suitable for: standardised technologies and performance-based upgrades
Public lighting (street lighting retrofits)	TPF is widely used for highly scalable and replicable applications, often involving LED upgrades, smart lighting systems and smart city sensor integration. • Primary models: Leasing/"As-a-Service", ESCO-based PPA • Suitable for: performance-based contracts and rapid deployment
RES generation (solar, wind, small-scale hydro)	TPF is widely used for enabling LRAs to access RES without owning the asset. • Primary models: Physical PPAs/vPPAs • Suitable for: on-site and off-site installations and solutions
Sustainable mobility (EV fleets)	TPF is widely used for enabling e-mobility solutions, often involving fleet electrification and charging infrastructure deployment. • Primary models: Leasing/"As-a-Service", Vendor financing • Suitable for: high-cost equipment with predictable usage patterns
Building renovation programmes (residential/mixed-use assets)	TPF is widely used for large-scale renovation programmes, often involving EE improvements across multiple buildings. • Relevant models: On-tax financing, On-bill schemes • Suitable for: aggregation of small-scale projects and citizen-focused initiatives
District energy and integrated systems	TPF is widely used for investments, often including district heating and cooling networks, and multi-technology energy systems integrating RES generation, storage, and distribution infrastructure. • Relevant models: ESCO-based PPA, blended financing approaches • Suitable for: complex projects requiring high capital and long-term operation

Focus Box 4: Cross-sector considerations

Across sectors the applicability of TPF depends on several key factors, including:

- the predictability of savings or revenues
- the technical standardisation of solutions
- the scale and aggregation potential of projects
- the institutional capacity of the LRA to manage contracts and stakeholders

LRAs often combine different TPF models within broader investment strategies, selecting the most appropriate mechanism based on the project characteristics and the local conditions.

2.5. Main stakeholders involved

Most TPF arrangements rely on a structured ecosystem of actors with clearly defined roles, leading to a reconfiguration of responsibilities across technical, financial, and operational functions, compared to traditional public procurement. At the core, a tripartite relationship between the primary participants - the public authority the service provider, and the third-party financier - ensures the project is "bankable" and "performant". Beyond them, a wider group of secondary participants may also contribute to project development, implementation, and local impact (Bertoldi & Rezessy, 2005; Energy Charter Secretariat, 2003; Eurocontract, 2010; NetZero Cities, 2025; Todeschi et al., 2025).

Among the core TPF contractual actors:

- LRAs act as the "off takers" and the primary beneficiaries, providing access to the site, defining the required service or performance levels, and committing to long-term payments. Their role shifts from asset ownership and technical management to performance oversight and contract management.
- The service providers - typically ESCOs or an equipment vendors - assume responsibility for the technical design, implementation, and operation of the solution. In ESCO-based models in particular, providers may offer performance guarantees, taking on the technical risk associated with the project and ensuring that agreed performance levels are met.
- The third-party financiers (e.g. commercial banks, investment funds, or dedicated SPVs) provide the upfront capital required for project implementation, relying on the contractual framework and the creditworthiness of the LRAs to secure and recover its investment.

The distribution of roles and responsibilities among these stakeholders is summarised in Table 12 below.

Table 12. Primary stakeholder responsibility matrix

Responsibility	Public Authority/LRA	Service Provider (ESCO/Vendor)	Third-Party Financier
Upfront funding	No	Optional (if self-financed)	Primary
Technical risk	No	Primary (often guaranteed)	No
Operation & maintenance	No	Primary	No
Credit/payment risk	Primary	No	No
Asset ownership	Optional (end of contract)	Often during contract	Security interest

In terms of the secondary TPF actors, these may involve:

- Citizens and prosumers who act as end-users and, increasingly, as active participants in energy systems, contributing through behavioural changes, feedback, or co-investment in local projects.
- Energy communities which can play a complementary role, supporting local value creation and, in some cases, acting as facilitators or "social ESCOs", particularly in initiatives addressing energy poverty or community-led energy transitions.
- Regional and local energy agencies which often act as intermediaries or OSSs, providing technical expertise, supporting project aggregation, assisting with procurement and contract design, and facilitating monitoring and verification processes.
- Local small and medium enterprises (SMEs) which are frequently involved as subcontractors or implementation partners, contributing to the delivery and maintenance of projects while supporting local economic development and job creation.

Depending on their position, capacity, and level of interest, these stakeholders may assume different enabling roles, as summarised in Table 13 below.

Table 13. Secondary stakeholder engagement matrix

Actor	Primary interest	Role in TPF
Citizens/prosumers	Lower energy costs and improved comfort	End-users, behavioural contribution, potential co-investors
Energy communities	Local sustainability and energy autonomy	Community financing, facilitation, or "social ESCO" role
Energy agencies	Achievement of climate and energy targets	Project facilitation, aggregation, technical support, M&V
Local SMEs	Economic opportunities and local development	Technical implementation and long-term maintenance

3. Setting up a TPF scheme: A quick step-by-step guide

The journey to implementing a TPF scheme follows a structured logic similar to that of EPCs, as both are rooted in performance-driven outcomes and long-term service delivery (BELESCO, 2026; Taft Stettinius & Hollister LLP, 2026). While the technical focus differs - whether targeting EE (e.g. building upgrades) under an EPC or energy generation and supply under a PPA - both approaches share a common "implementation spine", with the primary distinctions lying in how value is generated, measured, and contracted. In addition, TPF encompasses a broader range of contractual structures - from asset-specific leasing arrangements to more complex PPAs - requiring a more nuanced approach to risk allocation and financial "bankability" from the outset (Energy Charter Secretariat, 2003; EIB, 2023).

A simplified overview of the main differences between the two approaches is give in Table 14.

Table 14. Comparison of EPC and TPF implementation processes

Phase	EPC focus (efficiency)	TPF / PPA focus (generation / supply)
Preparation	Investment Grade Audit (IGA) to identify energy savings potential	Feasibility study to assess renewable energy yield (e.g. solar or wind)
Procurement	Selection of an ESCO based on guaranteed savings	Selection of a developer based on energy price (€/kWh) and project conditions
Contract	EPC agreement with performance guarantees and penalties	PPA or service contract with pricing and performance provisions (e.g. take-or-pay clauses)
Measurement	Measurement and Verification (M&V) of energy savings	Metering of generated or supplied energy

This section provides a practical implementation framework to support LRAs in navigating the TPF project lifecycle. Recognising the diversity of TPF models, it focuses primarily on ESCO-based and PPA-type structures and presents a streamlined six-step roadmap applicable to a range of project types.

3.1. The TPF implementation roadmap

Rather than prescribing a fixed sequence of actions, the following roadmap is designed as a flexible framework that can be adapted to different project types and local circumstances. By progressing through each step, LRAs can gradually establish the technical, financial and governance foundations required to develop bankable projects that meet the expectations of third-party investors (IREC, 2015; NREL, 2009; North West Net Zero Hub, 2024; Renewabl, 2026).

Step 1 - Secure political commitment and strategic alignment

This step anchors the project within the LRA's long-term vision and ensures alignment across key departments (finance, legal, technical). Key actions typically include:

- securing formal political approval for multi-year contractual commitments,
- aligning the TPF project with broader local energy and climate strategies (e.g., SECAPs),
- ensuring cross-departmental coordination to overcome internal silos and procurement delays.
- conducting a preliminary selection of the most suitable TPF model.

Strong high-level political backing is a primary prerequisite, as TPF schemes demand long-term contractual agreements with third-party providers that extend beyond individual mandates.

Common pitfalls to avoid:

- Treating TPF as a "no-cost" solutions rather than a long-term service commitment
- Failing to engage the finance departments early, leading to late-stage "on-balance sheet" debt concerns or rejections

Step 2 - Technical audit and baseline definition

This step establishes the analytical foundation of the project by defining the reliable energy baseline, against which all future savings or energy production will be measured. Key actions typically include:

- conducting investment-grade audits to assess technical potential and expected performance,
- establishing a robust baseline using 24–36 months of verified energy data,
- normalising data to account for external variables (e.g., weather or building occupancy changes).

A verified historical energy baseline is the "currency" of any TPF agreement, and functions as the contractual reference point.

Common pitfalls to avoid:

- Inaccurate or incomplete data, increasing perceived risks for the third-party participants
- Unrealistic baseline assumptions that may lead to disputes during implementation

Step 3 – Financial feasibility and market engagement

This step tests the financial viability of the project and gauges market interest to ensure the tender attracts high-quality third parties. Key actions typically cover:

- a "bankability" assessment to ensure projected savings cover investment and service costs,
- soft market consultations with potential providers to refine the project scope,
- Aassessing regulatory and accounting considerations (e.g., public aid, off-balance sheet treatment) as well as technical and risk transfer details to finalise the TPF model selection.

Early market engagement ensures that the LRA's ambition matches the private sector's expectations and risk appetite.

Common pitfalls to avoid:

- Insufficient projects scale, making the investment unattractive to large third-party actors
- Over-specifying technical solutions, which may prevent private provider innovation

Step 4 - Procurement and tendering

This step covers the formal tendering process, focusing on the selection of the most suitable third parties through a competitive procedure, which may last around six months or longer for complex projects. In practice, this requires LRAs to prepare transparent and standardised tender documentation to ensure clarity, comparability and reduced administrative burden by:

- defining clear, MEAT-based evaluation criteria to assess overall bid quality and lifecycle value,
- benchmarking financial offers against market projections to assess price competitiveness,
- establishing clear M&V protocols, including provisions for adjusting performance in case of non-routine events to ensure contractual fairness.

TPF procurement is typically guided by the most economically advantageous tender (MEAT), where value is assessed on lifecycle quality and performance rather than lowest price alone.

Common pitfalls to avoid:

- Using traditional "lowest-price" procurement criteria as the primary selection method
- Poorly defined tender specifications or unclear performance requirements
- Failing to use standardised tender documents

Step 5 – Contract finalisation and financial closing

This step ensures that contractual arrangements are robust, risks are fairly allocated and financing is fully secured. It typically requires LRAs to:

- define transparent allocation of regulatory, technical and financial risks between parties,
- establish contractual safeguards (e.g. exit clauses and adjustment mechanisms) to maintain flexibility throughout the project lifecycle,
- agree on pricing structures, indexation mechanisms and financial adjustment conditions.

The transition from tender award to contract signature is a critical phase, where contractual clarity and balanced risk allocation determine project bankability and financial close.

Common pitfalls to avoid:

- Unclear or unbalanced risk allocation, delaying or preventing financial close and undermining investor confidence
- Unclear or unbalanced contractual clauses that may leave LRAs vulnerable to market shocks or "negative price" risks

Step 6 – Implementation and performance monitoring

In this final step, actual energy performance is tracked against the contract to trigger payments and ensure sustainability targets are met. Key actions LRAs are encouraged to take may include:

- commissioning and overseeing implementation ang technical validation of installations,
- appointing an independent M&V facilitator to track performance objectively,
- verifying savings/generation before releasing periodic service payments.

Consistent monitoring transforms a contract from a static document into a dynamic tool for guaranteed energy performance.

Common pitfalls to avoid:

- Reduced oversight after implementation, leading to performance degradation over time
- Lack of clear dispute resolution mechanisms for when guaranteed targets are missed

3.2. TPF checklist – Key questions for successful setup

To support practical application, the checklist below helps LRAs assess their readiness and structure the development of TPF schemes - from early preparation to implementation and performance monitoring.

Step 1 – Political commitment & strategic alignment

☐ Has formal political approval been secured for entering long-term contractual arrangements?
☐ Is the project aligned with local energy and climate strategies (e.g. SECAPs)?
☐ Has a cross-departmental coordination structure been established (finance, legal, technical)?
☐ Has an initial TPF model (e.g. PPA, leasing, on-bill) been identified based on project type?

Step 2 – Technical readiness & baseline definition

☐ Are investment-grade audits available to assess technical potential?
☐ Is there at least 24–36 months of verified energy data?
☐ Has a robust and realistic energy baseline been defined?
☐ Has data been normalised to account for external factors (e.g. weather, occupancy)?

Step 3 – Financial feasibility & market readiness

☐ Has a bankability assessment confirmed that expected savings/revenues cover project costs?
☐ Has preliminary market engagement (soft consultation) been conducted?
☐ Are regulatory and accounting implications (e.g. public aid, off-balance sheet treatment) assessed?
☐ Is the project scale sufficient to attract private investors or financiers?

Step 4 – Procurement & tendering

☐ Does the procurement approach apply MEAT criteria to prioritise lifecycle value and performance?
☐ Are evaluation criteria clearly defined (technical, financial, contractual)?
☐ Are M&V protocols clearly specified, including provisions for non-routine adjustments?
☐ Are tender documents standardised, transparent, and accessible to bidders?

Step 5 – Contracting & financial close

☐ Is risk allocation clearly defined (technical, financial, regulatory)?
☐ Are pricing structures and indexation mechanisms clearly agreed?
☐ Are key contractual provisions in place (e.g. exit clauses, adjustment mechanisms)?
☐ Has financial close been secured with the involvement of lenders or investors?

Step 6 – Implementation & performance monitoring

☐ Has commissioning been completed and installations technically validated?
☐ Is an independent M&V process in place to track performance?
☐ Are payments clearly linked to verified savings or energy generation?
☐ Are monitoring and reporting procedures established for long-term performance?

4. Critical conditions influencing TPF implementation

The successful implementation of TPF depends on a combination of enabling conditions - including supportive legal frameworks, institutional capacity, and market readiness - as well as the ability of LRAs to address potential barriers and risks that may affect project development. Together, these factors influence the scalability, bankability, and long-term effectiveness of TPF schemes in delivering performance-based energy transition investments.

4.1. Drivers and success factors

Key enabling conditions supporting the transition to TPF models include:

- Strong political commitment and leadership, ensuring continuity, administrative stability, and long-term support for contractual arrangements that may extend over 10–20 years.
- Clear strategic vision and policy coherence, linking TPF implementation to SECAP objectives, local energy transition priorities, and broader EU climate and decarbonisation goals.
- A strong “bankability” mindset, focusing on projects with measurable energy-saving potential, predictable cash flows, or clear revenue-generation capacity.
- Access to project facilitators, such as Energy Agencies or OSSs, to help bridge technical, financial, and market-related gaps between LRAs and private actors.
- Standardised procurement and contracting approaches, reducing transaction costs, simplifying implementation, and limiting legal uncertainty for all parties involved.
- Effective internal coordination, particularly between technical departments, procurement teams, and municipal finance offices throughout project preparation and implementation.
- Reliable energy data and baselines, providing the basis for performance measurement, savings verification, and payment calculations over time.
- A mature and competitive market environment, ensuring access to qualified ESCOs, financing providers, and multiple high-quality bidders.
- Institutional capacity and technical expertise, particularly in project preparation, risk allocation, financial structuring, and long-term contract management.

4.2. Barriers and limitations

Several structural and operational challenges may hinder the uptake of TPF, including:

- Fragmented legal and regulatory frameworks, particularly regarding the accounting treatment and potential “off-balance sheet” classification of municipal energy contracts.

- High transaction costs, which can discourage private financiers and reduce the attractiveness of smaller-scale or highly fragmented projects.
- Technical and data-related gaps, including insufficient or unreliable energy consumption data needed to establish credible baselines and performance indicators.
- Perceived complexity and implementation risks, often leading to institutional resistance or a preference for more traditional procurement approaches.
- Strict public debt and accounting rules, where certain TPF arrangements may still be treated as public debt depending on national regulatory frameworks.
- Split-incentive challenges, where the entity financing the investment does not directly benefit from the resulting energy savings or reduced utility costs.
- Limited internal capacity within smaller LRAs, making it difficult to manage complex procurement processes, negotiations, or monitoring and verification procedures.
- Market and financing gaps, including the limited availability of specialised ESCOs, investors, or financing providers in specific regions or technical sectors.

4.3. Key risk dimensions

To ensure a successful TPF implementation, key risk dimensions must be actively managed:

- Financial and credit risks, related to the LRA's ability to meet long-term payment obligations and the financier's required return on capital.
- Technical performance risks, referring to the risk that expected energy savings or generation targets are not achieved due to inadequate design, installation, or system performance.
- M&V-related risks, arising from potential disputes over how savings or generation are calculated, including adjustments for external factors (e.g. weather or usage patterns).
- Policy and regulatory risks, linked to changes in national or EU frameworks (e.g. subsidies, carbon pricing, or accounting rules) that may affect project viability.
- Operational and maintenance risks, associated with ensuring that the third-party provider operates and maintains the asset in line with agreed performance standards throughout the contract term.
- Market and price risks, related to fluctuations in energy prices that may affect project economics, including payback periods or the competitiveness of PPA pricing.
- Asset ownership risks, concerning legal clarity over asset ownership during the contract term and the conditions for transfer at the end of the agreement.

4.4. Synthesis of critical conditions affecting TPF implementation

Table 15 synthesises the key critical conditions influencing the TPF pathway and highlights practical mitigation measures for LRAs.

Table 15. Summary of critical conditions influencing TPF schemes

Dimension	Key drivers/enabling factors	Common barriers/risks	Mitigation measures
Political & Strategic	• Long-term political mandate • Alignment with SECAP/climate targets	• Shifting political priorities • Weak ownership within finance departments	• Formal political endorsement • Multi-year budget ring-fencing for service payments
Legal & Regulatory	• Clear rules for off-balance treatment • Harmonised procurement and contractual frameworks	• Regulatory uncertainty • Strict municipal debt limits	• Adoption of model contractual agreements • Early legal assessment of municipal authority
Technical & Data	• Verified 24–36 month energy baselines • Investment Grade Audits (IGA)	• Inaccurate or incomplete data • Limited historical metering	• Deployment of submetering systems • Baseline verification through project facilitators
Financial & Bankability	• Aggregation of small projects into portfolios • Strong energy-saving potential	• High transaction costs • Perceived lender risk	• Project bundling to achieve scale • Use of credit guarantee funds (e.g. ELENA)
Governance & Capacity	• Dedicated TPF task force • Cross-departmental collaboration	• Institutional silos • Limited expertise in performance-based contracts	• Capacity-building for municipal staff • Establishment of OSSs
Market Readiness	• Diverse ecosystem of ESCOs and financiers • Competitive procurement processes	• Limited market capacity • Technology-specific monopolies	• Early market consultation • Application of MEAT criteria
Operational & M&V	• Standardised M&V protocols (e.g. IPMVP) • Independent verification	• Disputes over savings calculations • Performance drift	• Independent M&V facilitation • Clear non-routine adjustment clauses in contracts

5. Summary of key takeaways

WHAT IS TPF ABOUT? TPF is a delivery mechanism through which LRAs are encouraged to implement energy and climate investments by relying on external partners for financing, technical delivery, and operational management. Instead of investing upfront in assets, LRAs procure a service or performance outcome, with costs repaid over time based on energy savings, service provision, or energy generation.

The approach enables the mobilisation of private capital, reduces upfront financial barriers, and shifts key technical and operational risks to specialised actors (third parties), while supporting a transition towards service-based and performance-driven investment models.

HOW IS TPF STRUCTURED IN PRACTICE? TPF can be organised through different contractual and financing configurations, depending on how responsibilities, financing and performance risks are distributed among the actors involved. In practice, the structure of the arrangement influences project governance, contractual complexity, risk allocation and financing conditions.

The most common configurations include:

- ESCO-led arrangements, where a single provider integrates financing and technical delivery, assuming primary responsibility for performance and often mobilising capital directly.
- Financier-led arrangements, where a dedicated financial institution provides capital, while technical implementation is delivered by a separate service provider.

In both cases, TPF relies on long-term contractual arrangements in which payments are generally linked to verified project performance or service delivery. The selected structure usually depends on factors such as project size, technical complexity, market maturity and the institutional capacity of the LRA.

WHAT ARE THE MAIN TPF MODELS AND HOW THEY ARE APPLIED ACROSS SECTORS? TPF can take different forms depending on how value is delivered and risks are structured within a project - whether through energy supply, asset use or financing arrangements. As a result, different models are better suited to different sectors and investment needs.

Table 16. Summative overview of the main TPF models and their typical cross-sectoral application

TPF model	Core idea	Typical use for LRAs
PPA	Long-term contracts to purchase renewable energy at a fixed or indexed price	• Public buildings: rooftop solar PV, on-site generation • RES generation: off-site renewable sourcing (solar, wind) • District energy: large-scale supply agreements

Leasing / As-a-Service	Payment for the use or performance of equipment without ownership	• Public buildings: HVAC systems, energy upgrades, LED retrofits, smart lighting • Mobility: EV fleets and charging infrastructure
Vendor Financing	Equipment suppliers provide or facilitate financing for their technologies	• Public buildings: heat pumps, technical systems • Mobility: EVs and charging points • Infrastructure: targeted technology upgrades
On-bill schemes	Investment repaid through energy bills	• Public buildings: efficiency upgrades • Residential programmes: building renovation, heating systems • Citizen-focused actions: energy poverty measures
On-tax financing	Repayment linked to property taxes	• Residential/mixed-use buildings: large-scale renovation programmes • Urban building stock: deep retrofits across multiple properties

These models can also be combined within broader investment strategies, allowing LRAs to tailor financing approaches to different sectors and project characteristics.

WHO SHOULD USE TPF? TPF is particularly suitable for LRAs and public entities that:

- aim to implement energy and climate investments without upfront capital expenditure,
- seek to preserve borrowing capacity and budget flexibility,
- operate assets or services with measurable and predictable performance,
- are willing to collaborate with external providers for financing and delivery.

It is especially relevant where internal capacity is limited or where access to private-sector expertise can accelerate implementation.

WHEN IS TPF MOST EFFECTIVE? TPF performs best in projects that generate reliable and measurable financial flows capable of supporting long-term repayment. Its effectiveness is enhanced when:

- projects are aggregated to achieve scale and attract investors,
- technologies are standardised and performance can be clearly monitored,
- contractual frameworks ensure balanced risk allocation and clarity of obligations,
- LRAs have sufficient capacity to manage procurement and long-term contracts,
- regulatory and market conditions support private-sector participation.

Under these conditions, TPF enables the scaling of investments across sectors, while ensuring financial sustainability and long-term performance.

References

Ahmed, S. Z. (2023). A short overview of European Power Purchase Agreements. *ReseachGate Net*. (DOI)

American Council for an Energy-Efficient Economy (ACEEE). (2026). *On-Bill Energy Efficiency*. (Link)

BELESCO. (2026). *Third Party Financing*. (Link)

Bertoldi, P., & Rezessy, S. (2005). *Energy Service Companies in Europe*. (Link)

Bolinger, M. (2009). *Financing Non-Residential Photovoltaic Projects: Options and Implications*. (Link)

Cory, K., Coggeshall, C., Coughlin, J., & Kreycik, C. (2009). *Solar Photovoltaic Financing: Deployment by Federal Government Agencies.* (Link)

Economidou M., & Bertoldi P. (2014). *Financing building energy renovations: current experiences and ways forward*. (DOI)

Energy Charter Secretariat. (2003). *Third Party Financing. Achieving its potential*. (Link)

Enerinvest. (2018). *Guide to Financing for Sustainable Energy Projects*. (Link)

Eurocontract. (2010). *Comparison and Evaluation of Financing Options for Energy Performance Contracting Projects*. (Link)

EuroPACE. (2021). *Developing, Piloting and Standardising On-Tax Financing for Residentials Energy Efficiency Retrofits in European Cities*. European Commission, CORDIS EU Research Results. (Link)

European Investment Bank (EIB). (2021). *EPEC Guide to Public-Private Partnerships*. (DOI)

European Investment Bank (EIB). (2022). *Commercial Power Purchase Agreements. A Market Study including an assessment of potential financial instruments to support renewable energy Commercial Power Purchase Agreements*. (Link)

European Investment Bank (EIB). (2023). *Developing Potential Financial Instruments and Advisory Solutions to Stimulate More Investment in Renewable Energy Generation by Means of Commercial Power Purchase Agreements*. (Link)

Eurostat & European Investment Bank (EIB). (2018). *A guide to the statistical treatment of energy performance contracts*. (DOI)

Grosu, V., & Hlaciuc, E. (2018). IFRS 16 - Challenges and Opportunities in Adopting and Applying the New Standard Regarding Leases. In C. NÄ STASE (Ed.), *The 14th Economic International Conference: Strategies and Development Policies of Territories: International, Country, Region, City, Location Challenges* (1st ed., Vol. 6, 30). Editura Lumen. (DOI)

Interreg Europe. (2019). *Funding energy efficiency through financial instruments. A policy brief from the policy learning platform on low-carbon economy*. (Link)

Interstate Renewable Energy Council (IREC). (2015). *Solar Power Purchase Agreements. A Toolkit for Local Governments*. (Link)

IRENA. (2023). *Global landscape of renewable energy finance 2023*. (Link)

Mihalciuc, C. C. (2020). Leasing Financing in the Current Global Context. *European Journal of Accounting, Finance & Business*. (Link)

Moles-Grueso, S., Bertoldi, P., & Boza-Kiss, B. (2023). *Energy Performance Contracting in the EU – 2020-2021*. (DOI)

National Renewable Energy Laboratory (NREL). (2009). *Power Purchase Agreement Checklist for State and Local Governments*. (Link)

NetZero Cities. (2025). *Climate Investment Plan Compatibility with a Comprehensive List of Different Private Sources of Capital*. (Link)

North West Net Zero Hub. (2024). *Power Purchase Agreement Guide*. (Link)

Papazoski & Mishev Law Firm. (2024). *Renewable Power Purchase Agreements in the Energy Community*. (Link)

Pernetta, R. (2018). *Innovative forms of integrated building renovation services*. (Link)

Renewabl. (2026). *PPAs explained: The complete guide to Power Purchase Agreements*. (Link)

RenOnBill. (2020). *Overview of On-Bill Building Energy Renovation Schemes*. (Link)

SECCA. (2025). *Leasing financing*. (Link)

Slomiak, S. (2024). *Innovative finance methods*. Eurocities. (Link)

Solar Permit Solutions. (2026). *What is Third-Party Ownership (TPO) solar? Complete 2026 guide*. (Link)

Taft Stettinius & Hollister LLP. (2026). *Power Project Development: Aligning the EPC Agreement and Power Purchase Agreement*. (Link)

Todeschi, V., Bertoldi, P., Hernandez Moral, G., Clementi, E., & Treville, A. et al. (2025). *Financial instruments for mitigation, adaptation and energy poverty actions - Covenant of Mayors Guidebook Complementary document 5*. (DOI)

Triollet, R. (2022). *JRC Annual Report 2021*. (DOI)

Zubel, K., & Styczyńska, I. (2018). *Deliverable 2.1 Report on on-tax financing feasibility*. (Link)

PROSPECT

LinkedIn: Capacity building for cities and regions | PROSPECT+

Website: https://h2020prospect.eu/







Co-funded by the European Union.