ENERGY CITIES - BRIEFING

POWER PURCHASE AGREEMENTS

HOW CAN CITIES MAKE THE MOST OF THEM?

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ENERGY CITIES GRATEFULLY ACKNOWLEDGES THE FINANCIAL ASSISTANCE OF THE EUROPEAN CLIMATE FOUNDATION

A power purchase agreement (PPA) is a contract used by a purchasing entity to procure electricity from a project developer. This contract specifies the volume and price of the energy purchased and the duration of the agreement. “Renewables PPAs” specifically procure electricity from renewable energy projects, such as wind and solar PV and are typically signed for durations between 5 and 20 years. By having visibility on future revenues, the developer can more easily finance the construction and operation of the generating facility while the purchasing entity can benefit from low and stable electricity prices, while progressing towards its environmental objectives.

While these types of contracts are normally concluded between two private companies, they have recently started to be used by municipalities as an instrument to foster renewable energy deployment at local level. Following the energy price crisis of 2022, the European Commission started promoting PPAs and has made it possible for Member States to de-risk renewable PPAs, for example by setting up state-backed or private guarantee schemes.

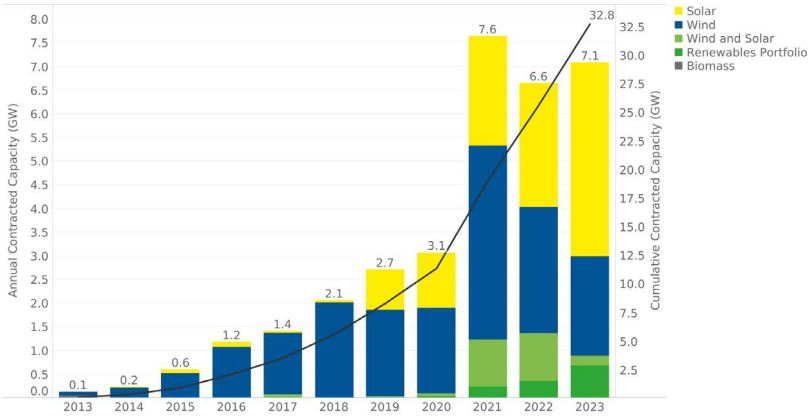
This short briefing will provide municipalities with some initial knowledge on renewables PPAs and how to use them to progress with their climate and energy strategies.

3 MAIN TYPES OF PPAs

We can distinguish between 3 different types of power purchase agreements:

- **Direct line**: with this contract a renewable (RES) energy producer provides electricity via a cable directly to the customer at an agreed price without intermediaries.
- **Physical or sleeved PPAs**: the customer receives electricity from the RES energy producer via the grid at an agreed price.
- **Virtual PPAs**: the RES energy producer and customer sign a financial contract that compensates the producer if electricity market prices drop below an agreed price level, and compensates the customer if market prices rise above the agreed price level. This is essentially a “contract for difference”. There’s no physical delivery via the grid, the producer sells electricity to the market.

Other variations do exist but to keep it clear, our focus is on the main types.



Evolution of corporate PPAs. Data for 2023 relate to Q1-Q3 - Credit: PPA deal tracker, RE-Source Platform

PPAs FOR MUNICIPALITIES

Lately, an increasing number of municipalities have been showing interest in using PPAs to meet their climate goals. Such an instrument can be useful to increase the amount of renewable power installed in their territory or surrounding areas. Because of their considerable energy needs, cities have the power to increase the amount of renewable energy fed into the grid by giving project developers the necessary revenue stability to invest with confidence.

Ideally, a renewables PPA can be complementary to locally-owned installations (owned directly or via a municipal energy company), but in certain cases it could be the only option for local governments who can't afford their own renewable energy production facilities or lack the staff capacities & knowledge to establish partnerships with their citizens. A developer can decide to provide the capital for the installation if they have the financial security of a long-term contract for the generation.

SOME ADVANTAGES...

Purchasing electricity via PPAs can be a useful tool for a municipality for the following reasons:

Attractive power price over long term

Via PPAs, a buyer is protected from price volatility and has (potentially) access to cheaper electricity prices to cover the energy needs of public buildings or streets. For municipalities this visibility on future prices for a longer period of time could simplify financial planning.

Contribute to sustainability goals

By signing PPAs a municipality can support the production of fossil-free energy and progress toward its CO2 reduction targets, possibly at lower cost. It can also be promoted to bring visibility to the climate actions taken by the local government.

MUNICIPALITIES AS ENERGY SUPPLIERS

MUNICIPALITIES ARE OFTEN ON THE RECEIVING SIDE OF PPAS. BUT IT IS IMPORTANT TO ACKNOWLEDGE THAT THEY CAN ALSO CONCLUDE SUCH CONTRACTS AS SUPPLIERS. SOME OF THEM, LIKE THE FRENCH MUNICIPALITY OF MALAUNAY, ARE ALREADY TESTING THIS SCHEME. THE MUNICIPALITY IS PART OF THE LOCAL ENERGY COMMUNITY AND THE SURPLUS FROM THEIR SOLAR INSTALLATIONS IS SOLD TO THE COMMUNITY VIA A PPA. THE COMMUNITY THEN SELLS THE ENERGY TO THE OTHER MEMBERS.

Promote the local economy and other social goals

If contracted to develop new projects, a renewable PPA could support local RES developers, increasing the number of RES projects at local level. In view of a contract with a public entity, the developer might get better credit conditions from financing institutions, which would allow them to offer lower electricity prices.

In addition, by removing uncertainty on the energy price, PPAs shield customers from price volatility and can be a valid choice to fight energy poverty, if the energy purchased can be shared with vulnerable households.

If the RES developer is an energy community, municipalities' PPAs can also facilitate citizen participation in the energy system. A community would in return be able to sustain their activity while guaranteeing their members cheaper renewable energy for a longer period of time. Such actors are mostly small-sized and of non-commercial nature, so a well-thought out PPA could allow them to be less reliant on public support mechanisms.

...AND SOME CHALLENGES

On the other hand, PPAs also present challenges and there are many aspects to be considered before concluding such contracts.

Credit risks

PPAs tend to run for a period of 5-15 years.It is important that both buyer and supplier can prove to be financially stable over a long time. Provisions about what happens if either of them go bankrupt should be included in the PPA. New EU legislation foresees the possibility to set up guarantees for energy buyers. Such instruments may include state-backed guarantee schemes at market prices, private guarantees, or facilities pooling demand for PPAs which could spread or reduce risk.

Market risks

These types of risks are related to the energy market (the variable nature of wind and solar) but also the market for the raw materials needed for RES installations. PPAs have a long duration so both sides can be exposed to changes of market conditions. A change of market conditions (such as the rising price of commodities) can impact the feasibility for a RES developer to deliver on the terms of the signed PPA. In recent years the energy markets have been very volatile, first because of the pandemic (with a decrease of demand and consequently lower energy prices) and later because of the war in Ukraine (with an energy price spike). The economic advantage of signing a PPA can be more or less apparent, depending on the market prices, though the benefit of price stability remains.

Challenges related to the national legal framework

Legal frameworks and regulations are, according to our experience, among the most important obstacles for municipalities to sign PPAs. Changes in the legislation or current legal definitions might prevent the municipality from using the PPA to achieve the preset climate and energy objectives. Public procurement law differs across EU member states, but in some of them, local authorities are not entitled to sign a service contract for such a long period of time. This was the case of France, for example, where municipalities had to sign a contract every two years. Recently, a change in the law extended such a period to 15-20 years. As a result, some cities like Marseille are already looking into the opportunity of signing PPAs with local energy communities. At the same time, procurement law in France still prevents the municipality from adding criteria that would facilitate the participation of local developers, such as energy communities.

Complexity & administrative burden

Procuring energy via PPAs is a complex process. To assess and take into account all the above mentioned risks, municipalities need deep knowledge of the energy market, regulatory framework and legal aspects that are specific to this type of contract. It is also a heavy process in terms of administration and rules to follow. Cities might lack the staff and expertise required to enter such contracts.

Other challenges highlighted by municipalities when considering power purchase agreements include price (when it is not low enough compared to the market price) and the lack of political support. This support is fundamental but it can be difficult to gain, considering the time and resources needed to embark in such a process and the complexity of the mechanism.

MORE LOCAL STAFF FOR THE CLIMATE

THE EUROPEAN UNION (EU) IS INCREASINGLY ACKNOWLEDGING THE ROLE OF LOCAL AND REGIONAL GOVERNMENTS IN THE TRANSITION TO CLIMATE NEUTRALITY. BUT A RECENT STUDY CONDUCTED BY ENERGY CITIES FOUND THAT TO ACHIEVE THE EU TARGETS FOR THE DECARBONISATION OF THE BUILT ENVIRONMENT ALONE, WE WOULD NEED AROUND 2.5 ADDITIONAL FULL-TIME POSITIONS PER MUNICIPALITY PER YEAR UNTIL 2030. THE CAMPAIGN "MORE LOCAL STAFF FOR THE CLIMATE" LAUNCHED BY ENERGY CITIES IN 2022 IS CALLING FOR THE EU AND NATIONAL GOVERNMENTS TO GIVE MUNICIPALITIES AND PUBLIC LOCAL BODIES THE NECESSARY MEANS TO RECRUIT AND TRAIN THE STAFF NEEDED FOR THE TRANSITION.

GHENT'S VIRTUAL PPA WITH BEAUVENT ENERGY COOPERATIVE

THE BELGIAN CITY OF GHENT AIMED AT COVERING AT LEAST 30% OF THE ELECTRICITY CONSUMPTION OF PUBLIC BUILDINGS WITH LOCALLY SOURCED RENEWABLES, BUT THERE WAS NOT ENOUGH SUITABLE PUBLIC ROOF SURFACE TO INSTALL THE NECESSARY CAPACITY. THE FACILITY MANAGEMENT DEPARTMENT STARTED TO EXPLORE DIFFERENT WAYS TO REACH THAT TARGET. WITH THE SUPPORT OF VLAAMS ENERGIEBEDRIJF (VEB), AN INDEPENDENT PUBLIC AGENCY THAT SUPPORTS LOCAL AUTHORITIES IN ENERGY MATTERS, THEY IDENTIFIED A VIRTUAL PPA AS THE BEST WAY TO ACHIEVE GHENT'S ENVIRONMENTAL OBJECTIVES WHILE ALLOWING THEM TO PLAN LONG-TERM.

THE MUNICIPALITY SET MINIMUM REQUIREMENTS FOR THE BID: THEY WANTED A VIRTUAL PPA FOR RENEWABLE ELECTRICITY, TO DELIVER A MINIMUM VOLUME OF 500 MWH/YEAR, TO START AT THE LATEST 10 MONTHS AFTER THE CLOSING OF THE CONTRACT AND FOR A PERIOD BETWEEN 1 AND 15 YEARS. AT LEAST HALF OF THE PRODUCTION FACILITY WHERE THE ELECTRICITY IS GENERATED HAD TO BE OWNED BY A CITIZEN ENERGY COMMUNITY. THE "HOW" OF THIS OWNERSHIP WAS LEFT OPEN. PEOPLE LIVING IN GHENT HAD TO BE GIVEN THE OPPORTUNITY TO PARTICIPATE IN THE ENERGY COMMUNITY AND TO INVEST IN THE PROJECT. TO ENSURE THE WINNING OFFER WAS GOING TO INCREASE THE SHARE OF LOCALLY PRODUCED SOLAR POWER FOR PUBLIC BUILDINGS AT AN AFFORDABLE PRICE BUT ALSO GUARANTEE CITIZENS PARTICIPATION, THE CITY ATTRIBUTED POINTS ACCORDING TO BOTH QUANTITATIVE (55 POINTS) AND QUALITATIVE (45 POINTS) CRITERIA.

THE FLEMISH ENERGY COOPERATIVE BEAUVENT WON THE BID: THEY PARTNERED WITH THE TIMBER COMPANY LEMAHIEU, WHO ALLOWED THEM TO USE THE ROOF OF THEIR WAREHOUSES IN GHENT FOR THE INSTALLATION. LEMAHIEU'S BUILDING HAD NO SIGNIFICANT ELECTRICITY CONSUMPTION, SO THERE WAS NO BUSINESS CASE FOR A LARGE SOLAR INVESTMENT BY THE COMPANY. THE VEB AND A LAW FIRM THEN SUPPORTED THE MUNICIPALITY IN DRAFTING A CONTRACT PROPOSAL TO DISCUSS WITH BEAUVENT. THE CONTRACT WAS SIGNED IN DECEMBER 2021 AND THE ENERGY COOPERATIVE DEVELOPED A SOLAR PROJECT OF 7.9 MW, COVERING 20% OF THE CITY'S BUILDING CONSUMPTION. THANKS TO THE LONG-TERM FINANCIAL EARNINGS ENSURED BY THE PPA, THE COOPERATIVE COULD INVEST 2.5 MILLION EURO OF WHICH 700 THOUSAND CAME FROM PEOPLE IN GHENT, WHO BECAME MEMBERS OF BEAUVENT.

THE INSTALLATION WAS COMPLETED IN JANUARY 2023 AND IT IS CURRENTLY THE 3RD LARGEST RENEWABLE ENERGY PROJECT EVER DEVELOPED IN GHENT. THE CITY NOW BENEFITS FROM LONG-TERM HEDGING FROM ELECTRICITY PRICE SPIKES, CAN ACCESS LOCALLY PRODUCED GREEN ELECTRICITY (GUARANTEES OF ORIGIN ARE PROVIDED TO THE CITY) AND IS PROGRESSING TOWARDS THEIR CLIMATE AND ENERGY OBJECTIVES!

GHENT'S SUCCESS FACTORS

1. A TEAM DEDICATED TO PUBLIC BUILDING DECARBONISATION
2. STRONG SUPPORT AT POLITICAL LEVEL
3. ACCESS TO LEGAL AND FINANCIAL EXPERTISE AT AN AFFORDABLE PRICE

STEPS TO PPAs

A few practical steps to get the ball rolling for renewable energy PPAs in your municipality:

Decide on which goals PPAs should contribute to

- Sustainability: contribute to municipal climate targets, by reducing greenhouse gas emissions, water and air pollution associated with electricity consumption. Can include improving energy performance certificate (EPC) score of municipal buildings, in which case RES production needs to be local, and definition of local needs to checked[1].
- Financial: help keep the town's budget under control, through energy cost savings and predictable price evolution over a longer period.
- Social: broader local benefits for citizens, workers and businesses. Foster participation in RES projects, alleviate energy poverty, create employment or innovation opportunities.

Assess the municipalities' energy picture

- Electricity consumption and profile: how much in total, and when, as detailed as you can: which months, time of day. Seek assistance from local energy experts, the current energy supplier and grid company if needed.
- Scope potential projects in development in the area that could be interested in making an offer. Investigate potential for new solar and wind projects in the municipality on public and private roofs and land.
- Scope public participation potential in the area: cooperative developers, energy communities, active groups of citizens, interested social housing or school communities. Scope neighbouring municipalities going through a similar exercise that could be interested in joining forces.

Rules and contracts

- Investigate appropriate general PPA structure (direct line, physical, virtual). Compare third-party-owned renewables (often solar) and lease agreements for wind or solar on municipal properties. Engage specialised legal advice. Template contracts can be helpful.
- Investigate applicable public procurement rules to prepare tender for projects, involving energy communities if desired. Pool demand with other municipalities if possible for benefits of scale.
- Be careful when setting the tender criteria, don't make them too complicated but consider the objectives you want to achieve and the companies (or communities) already active in your area.
- No need to go big if it's the first time. For example, by keeping the volume of electricity you will purchase via the PPA rather low, you can simplify the management of the contract and reduce risks.

WHAT DO CITIES NEED?

CITIES NEED CAPACITIES AND HUMAN RESOURCES

Given the complexity of power purchase agreements and the numerous risks to be considered when preparing such contracts, it will be impossible for local governments to embark in this process unless they have the necessary knowledge and human resources available. Some cities have teams that can be dedicated to this process, others don't. Even when an internal team is available, doing a PPA for the first time will require external expertise, including specialised legal and technical advice. Regional agencies or bodies can be the ones providing such support to cities.

1 This may change with the national implementation of the recently revised Energy Performance of Buildings Directive (EPBD).

This support is a must in the preparatory phase but might be still needed during the PPA's running period, to deal with unforeseen challenges.

CITIES NEED ENABLING PROCUREMENT RULES

National legislation prevents, in some cases, municipalities from entering into long term contracts. The current approach of the European Commission identifies PPAs and contracts for differences among the key instruments to be used to promote renewable energy deployment and protect customers from price volatility. Member States should make sure to adapt their legislative framework to allow local governments to sign such agreements as well.

CITIES NEED TEMPLATES

European regulation requires Member States to facilitate renewable energy PPAs by removing barriers. This can include offering templates for PPAs for use by interested parties that don't have the legal expertise or resources to start from scratch. We do need to recognise that in practice PPAs will always require specifics and bespoke terms and conditions. But a template to start from will facilitate the process greatly. Such a template already exists for corporate European buyers, but municipalities are subject to different laws and regulations and have different needs that should be considered.

USEFUL RESOURCES TO GO DEEPER

- Regulatory Assistance Project: Balancing act – Two-sided contracts for difference for a speedy, cost-efficient and equitable energy transition: A Power System Blueprint deep dive
- Energy Cities webinar: Renewables PPAs - how can municipalities make the most of it?
- RE-Source Platform: PPA corporate buyer template
- REScoop.eu: Community Energy procurement guide

www.energy-cities.eu
www.raponline.org

Energy Cities' mission is to empower cities and citizens to shape and transition to future-proof cities. We showcase concrete alternatives deployed by cities, we advocate changing policy and economic governance at all levels and we foster wide cultural change leading to a future-proof society. Energy Cities community is composed by local leaders of thousands of cities in 30 European countries.