CORNWALL INSIGHT

CREATING CLARITY

Energy Procurement and Investment Models for Local Authorities

June 2020

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1 Executive summary

1.1 Introduction

The Local Energy Hub initiative was launched by BEIS in 2018, following its successful Local Energy Programme which offered all LEPs funding to develop regional energy strategies. The five Local Energy Hubs were financed with a £4.8mn grant to set up, in their region, a coordinator backed by teams with technical, legal and financial expertise in the energy sector. They are tasked with providing practical support to LEPs and LAs to support the development of priority energy projects, up to the point of financeability.

The Greater South East Energy Hub (GSEEH) has approached Cornwall Insight (CI) to compile a summary overview of the options available to Local Authorities (LAs) in buying or producing their own power needs. This is not a comprehensive summary and nor does it make recommendations for an LA, but provides a condensed summary of six high level options available to LAs, summarising:

- The approach and process taken
- The relative strengths, weaknesses, opportunities and threats of each option (a SWOT analysis)
- The key risks associated with each option at the time of writing
- Other points relevant to the decision-making process and some examples of each option

The paper also contains a glossary at the rear to explain technical phrases and acronyms.

1.2 Summary

The paper finds that different options will be suitable for different LAs depending upon:

- The driving force behind the decision to move to a renewable energy supply – for green credentials, to be seen as innovative, to make best use of unused assets, etc – and the additional importance of cost
- The LA's experience in delivering, tendering for, and partnering for renewable energy projects or its appetite and knowledge of potential partners in delivering a project
- The LA's appetite for risk and view of different types of risk
- The presence of available capital reserves

The options, in brief are:

- Open market and collective purchase – a traditional approach meeting power demand by purchasing on the open merchant market via a supplier, intermediary, or a trading partner – see chapter 2 for more information
- Corporate PPA (CPPA) – an agreement connecting the purchaser to the offtake of a specific generator, although an energy supplier is still required to facilitate this transfer – see chapter 3
- LA ownership – an LA or other body develops and owns the assets – see chapter 4
- JV asset development – the LA engages in a joint venture with another party to support the construction of one or more assets – see chapter 5
- Purchasing assets – completing the purchase of constructed assets – see chapter 6
- Land/ asset leasing options – leasing land or roof space to an asset developer – see chapter 7

The options presented in the paper are not necessarily exclusive and some options have interoperability – leasing of land/ assets for a development being pursued under a joint venture (JV) for example.

A high-level summary of the relative green credentials, potential local benefit and the potential level of risk of each approach is outlined in Figure 1.

Figure 1: Summary of approaches

Strategy	Green credentials	Local benefit	Risk Exposure[1]	Notes
Open market	1	1	5	
CPPA	4	4*	3	*Can be national
LA ownership	5	5	1	
JV asset development	4	4	2	
Purchasing assets	3	2	2	
Land/ asset leasing options	2	3	4	

Source: Cornwall Insight

Note that these are intended as a guide only, and the circumstances of each project will differ slightly. We have not attributed a score to the value of each method, as this is highly dependent on the particulars of each project. However, those models that expose the LA to a greater level of risk can be more valuable.

1.2.1 Risks

Figure 2 outlines some of the different risks that LAs may expose themselves to in adopting different approaches to meeting their power needs. Slightly transparent ticks denote that some of the risk will be managed in a contractual relationship with a counterparty – for example the potential for fixed price contracts via a supply, or fixing a price for wholesale power via a Power Purchase Agreement (PPA).

Figure 2: Overview of risks inherent with each option

Strategy	Different types of risk					
	Planning	Construction	Price	Counterparty	Operational	Regulatory
Open market			✓			✓
Corporate PPA (CPPA)			✓	✓	✓	✓
LA ownership	✓	✓	✓		✓	✓
JV asset development	✓	✓	✓		✓	✓
Purchasing assets			✓		✓	✓
Land/ asset leasing options			✓	✓	✓	✓

Source: Cornwall Insight

Only development of a physical asset, either solely or through a JV partnership, exposes the LA to planning and construction risk.

[1] All options are ranked 1-5 with 5 being the most attractive - Green Credentials and Local Benefit are greater with a score nearing 5 whereas Risk Exposure is lower with a higher score

All options expose the LA to price risk – the traditional method of collective purchase through an intermediary is designed to lower this price risk as much as possible by asking an organisation that is more expert in energy to do this on their behalf. Full or partial ownership of an asset allows the LA to mitigate some of this risk – if wholesale prices were to increase then the LA would expect increased revenues from its generation asset as well as higher energy bills.

The only model not exposed to operational risk of a particular asset in any way is the traditional energy purchasing approach, although contracts with the generator will typically insulate against much of this (non-delivery) risk. If the LA owns the asset, they are more exposed to this potential risk.

Regulatory risk is ever-present in the market, although there is potentially increased exposure to this if the LA owns a generation asset in addition to its consumption estate. A topical example of this is the ongoing network charging reviews being undertaken by Ofgem – these are expected to lower embedded benefits and are reducing the value available for generation assets located behind the consumption meter.

1.2.2 SWOT analysis

Figure 3 overleaf provides a summary of the relative strengths, weaknesses, opportunities and threats of each option. More detail can be found in the appropriate section:

- 2 Open market and collective purchase
- 3 Corporate PPAs
- 4 LA Ownership of Assets
- 5 JV Asset Development
- 6 Purchasing Developed Assets
- 7 Land Leasing Options

Figure 3: Summary SWOT analysis for all options assessed

Strategy	Strengths	Weaknesses	Opportunities	Threats
Open market	The most understood approach – few surprises and well understood compliance with OJEU.	Focus on wholesale power prices – a falling component of the bill. Potentially inflexible and low LA control, lack of innovation, and poor link with renewable credentials	Potential change to procurement rules and regulations in future with Brexit, increasing support for flexibility within frameworks	Volatile wholesale power price and greater within day variation may affect hedging. Falling component of the overall bill.
Corporate PPA (CPPA)	Strong Corporate Social Responsibility (CSR) benefits – green credentials linked to physical assets. Wholesale price stability for both consumer and generator depending on contract, thereby limiting some price risk.	More complex arrangement than traditional supply and potentially harder to tender for. May not be cost comparative to other methods.	Potential link with local co-operative or community asset. Could be used to support LA business case for self-supply. Long term agreement may be beneficial if prices rise.	Long term, fixed price agreement runs risk of overpaying for power. Procurement timescales would have to be changed or adapted to fit long-term nature of contract
LA ownership	Strong renewable and green credentials. Potentially bring jobs and investment to the community. Potentially lower cost and provides a natural hedge for wholesale power movements.	High risk option – fully exposed to market movements Potentially complex, lengthy and risky development process. A potential lack of council knowledge of the project development process and risk management involved.	Maximising access to cheap capital. Use of underutilised assets like disused land, roof space. Re-opening of Pot 1 technologies (onshore wind, solar) in CfD regime. Use of the local Energy Hub's knowledge and external advisors. Access reform may mean lower up-front connection costs.	Targeted Charging Review and network charging reform alters the value of embedded benefits and behind the meter supply. Network constraints, planning restrictions. Potential double-counting of renewable credentials.
JV asset development	Supportive partnership. Can lead to a simpler development process compared to self-development – making use of external expertise Owning generation assets provides for some mitigation of price risk or value sharing. Reduce LA time commitment.	Potential lengthy implementation of governance structure. May not wholly support LA capability to deliver future projects. Information/ knowledge asymmetry between parties. Lower profit than self-development – sharing mechanism. Some loss of control.	Using low-cost public money to deliver ongoing revenues for front-line services. Re-opening of Pot 1 technologies (onshore wind, solar) in CfD regime.	Poorly aligned approach/ desires from the collaboration. JV governance arrangement is poorly implemented. Network charging reform damages embedded benefits and/ or behind the meter value.
Purchasing assets	Speed – potentially much faster than developing new assets. Removes planning, development and construction risk. Significant revenues if plant are subsidised – ongoing revenues over lifetime of support. Provides a natural hedge for wholesale power movements.	Potentially lower returns. Potentially lengthy and expensive due diligence and negotiation process.	Potential refurbishing opportunities if near end of operational life. Option to collocate with storage assets at a later time.	Network charging reform. Subsidy-free assets have merchant risk – i.e. exposed to future power prices. Potential for price cannibalisation – low realised prices. Ongoing market reform and change
Land/ asset leasing options	Potentially a simple method of supplying the estate with renewable energy. Long-term, low risk revenues for the LA. Could support jobs and investment to the community. Potential to deliver low-cost green power for no upfront investment	Loss of majority of associated low-carbon benefits where not behind the meter. Potential double-counting of green credentials. Little additional benefit of doing a CPPA with developer on lease vs unleased asset.	Better use of LA building and land portfolios. Maintenance for unused land assets. CPPA or direct supply of low-cost energy to LA	Network charging reform lowering the value for behind the meter assets. Decommissioning of generation assets should be considered from outset

2 Open market and collective purchase

2.1 Description

The most traditional approach to meeting an estate's power supply is by purchasing the power on the open merchant market via a supplier, third party intermediary (TPI, often a public buying organisation (PBO)), or a trading partner. Collective energy purchasing, as employed by most of the public estate through organisations such as LASER and the Crown Commercial Service (CCS), is a long-standing method to secure wholesale energy as part of a wider energy service contract.

This is undertaken through these organisations' Framework Agreements, directly through energy brokers and other third-party intermediaries (TPIs), with the benefits of such an approach being:

- Pre-agreed terms and conditions (T&Cs) with accredited energy suppliers
- Saving of time and resources associated with the procurement of energy for a public sector entity
- Full compliance with public procurement rules (i.e. OJEU)
- Purchasing wholesale energy as part of a larger collective, leveraging the collective buying power of the group to secure energy at a better price and on better contract terms and conditions than would be achieved by tendering as an individual entity
- The provision (potentially) of a wider package of services in addition to the wholesale cost of power, which may include bill validation, energy savings services, and other associated products.

The primary benefits of this approach are therefore reliant upon both being able to secure favourable T&Cs, better manage the wholesale element of the delivered energy bill and that this in turn enables effective risk management of exposure to the energy market. Public sector bodies may also have chosen to utilise an energy framework through a private sector energy broker or have contracted on a standalone basis.

Many of these frameworks are now supplying renewable power to purchasers, either as a default option or at a small increase in cost. This supply is generally backed by Renewable Energy Guarantee of Origin (REGO) certificates, purchase and surrender of which proves to Ofgem and to consumers that the supplier is matching the volume of energy supplied has been matched to renewable energy put on the networks.

2.1.1 Procuring green power through a framework

This exercise is relatively simple, with a standard energy procurement exercise run but including the requirement for procuring green power.

Figure 4: SWOT analysis for open market purchase of power

Strengths	Weaknesses	Opportunities	Threats
The most understood approach – few surprises	A potentially inflexible approach	Brexit – procurement rules and regulations	Volatile wholesale power price over long term
Well understood OJEU compliance	Wholesale cost focus, which is a falling proportion of the bill	Procurement bodies may offer some support to move to other models	Greater variation in within-day power price
Simplest and cheapest option to upgrade to low-carbon energy	Reliant on partner's purchasing power	Additional revenue for LA-owned generators from sale of certificates	Accusations of "greenwashing"
Range of parties can assist with this approach	Poor autonomy/ LA control		

Source: Cornwall Insight

2.2 Detailed overview of the SWOT

Although the "traditional" approach to collective energy purchasing is synonymous with cost reduction, it is subject to a number of limitations.

2.2.1 Wholesale focus

It is focused primarily on the wholesale cost of energy, which Cornwall Insight analysis indicates will become a declining component of the delivered energy bill in the coming years particularly in the case of electricity**.** As a result, the benefits of this "traditional" approach will potentially decline over time. This means that those elements of the bill that cannot be managed through traditional collective purchasing are set to assume a growing importance.

Furthermore, those end users adopting this method must accept services that may not suit their business needs and remain subject to the same risk of poor supplier performance– potentially without any recourse to address this through measures such as enforceable service level agreements (SLA).

Adopting a suitably engaged and interconnected strategy that enables dialogue with relevant stakeholders – suppliers, network operators, technology providers and customers – is of key importance to ensure that the opportunities that present themselves in respect of such wider areas are managed for the benefit of public sector stakeholders. Here, such opportunities could include those relating to: economic development; low carbon energy; transport; air quality; ill-health prevention; housing; fuel poverty; domestic collective switching; and education and energy literacy.

A focus on wholesale elements alone through a traditional collective purchasing approach may overlook these opportunities. With a growing number of opportunities in the community energy space, the potential exists to work with partners to pursue wider social and economic benefits while at the same time controlling energy costs, getting services to meet business requirements and pursuing wider, socially-focused strategies.

2.2.2 "Energy-as-a-service" offerings

In the face of growing competition and pressure on profit margins, technological innovation and a growing need to differentiate their products, energy suppliers are increasingly offering alternative products and services. At the non-domestic level, these include: low carbon energy; solar PV generation; battery storage; energy efficiency; alternative energy supply models including demand-side response and flexibility aggregation, and; community engagement as part of alternative energy supply models.

As a result, the traditional role of the energy supplier is increasingly evolving into one based on the provision of energy-as-a-service, providing an opportunity to demand a more innovative approach and the potential to establish longer-term energy partners. Here, partners would include energy suppliers (the most economically advantageous outcome may be to have more than one supplier per energy commodity), electricity generators and infrastructure providers.

On the assumption that traditional collective purchasing arrangements do not incorporate these elements, those end users that wish to adopt them may incur an additional cost in doing so, which may reduce some of the financial benefits associated with receiving a lower wholesale price of energy under the "traditional" approach to collective purchasing.

2.2.3 "Greenwashing" and additionality

Most energy contracts sold as providing green or renewable electricity to consumers are backed by REGOs, which are provided to generators by the regulator on generation of green power and sold to suppliers for the purpose of demonstrating the sale of green power. This is legally valid but there are two key disadvantages in the REGO scheme – there is no link between the REGO and the wider electricity industry settlement process, meaning that a REGO does not link electricity production and consumption to the same time; and the price of REGOs remains very low.

Relatively small amounts of money are paid for REGOs – Cornwall Insight's March 2020 REGO survey indicated prices in the range of £0.50/MWh, compared to wholesale prices around £40/MWh (note that in March-April 2020, the Covid-19 health crisis has pushed GB wholesale prices down to the £25-30/MWh range). This low price and no explicit link with the "green power" produced by renewable plant mean the

regulator has begun to question the extent to which REGO-backed renewable tariffs are supporting the deployment of additional renewable generation.

Figure 5: REGO Value for current and future Fuel Mix Disclosure (FMD) years

	December 19 survey	March 2020 survey
FMD 2019-20	£0.53/MWh	£0.28/MWh
FMD 2020-21	£0.66/MWh	£0.47/MWh
FMD 2021-22	£0.72/MWh	£0.49/MWh

Source: Cornwall Insight

2.3 Examples

2.3.1 LASER Energy

The LASER Energy PBO is able to source renewable power under its Flexible Gas and Electricity frameworks, backed by renewable certificates: REGOs for electricity and Biomethane Certification Scheme (BMC) certificates for gas. It also provides sleeving/ Corporate PPA services to users (see section 3).

2.3.2 LEP

The London Energy Project (LEP), operated by a group of 36 London councils, operates as a PBO for energy. Its 2020-24 contracts offer certified green energy at no additional cost; it also provides a range of other services to users, from water retail to complex commodity trading and self-generation options.

2.3.3 Green energy suppliers

Of the 33 leading non-domestic energy suppliers (as identified by Cornwall Insight), nearly half (16) only offer tariffs including 100% renewable electricity. These are outlined below. Of the remainder, those who publish their fuel mix (13) offer an average of 28% renewable power to their consumers.

Supplier	100% renewable electricity tariffs only	Power matched to UK renewable generation
Good Energy	✓	**100%**
Ecotricity	✓	**100%**
Octopus	✓	**100%**
Bulb	✓	**100%**
Haven Power	✓	**100%**
Opus Energy	✓	**100%**
Orsted	✓	**100%**
SmartestEnergy	✓	**80%**
Clear Business	✓	**100%**
Pozitive Energy	✓	**100%**
Bryt Energy	✓	**100%**
Vattenfall	✓	**100%**

Supplier	100% renewable electricity tariffs only	Power matched to UK renewable generation
Squeaky Clean Energy	✓	**100%**
F&S Energy	✓	**100%**
Green Energy	✓	**100%**

3 Corporate PPAs

3.1 Description

The Corporate Power Purchase Agreement (CPPA) is an agreement connecting the LA to a specific generator, to offtake power directly into the LA's portfolio. An energy supplier is still required to facilitate this transfer in central industry settlement, with the CPPA essentially replacing the supplier's wholesale energy procurement and hedging strategy – though the supplier would still manage balancing functions.

Historically, deals have been between major blue-chip corporates and new-build renewable generation for long tenures (10-15 years). More recently, other corporates – including LAs – have been signing CPPAs, and shorter contract tenures (as short as 3 years) have become more common[2].

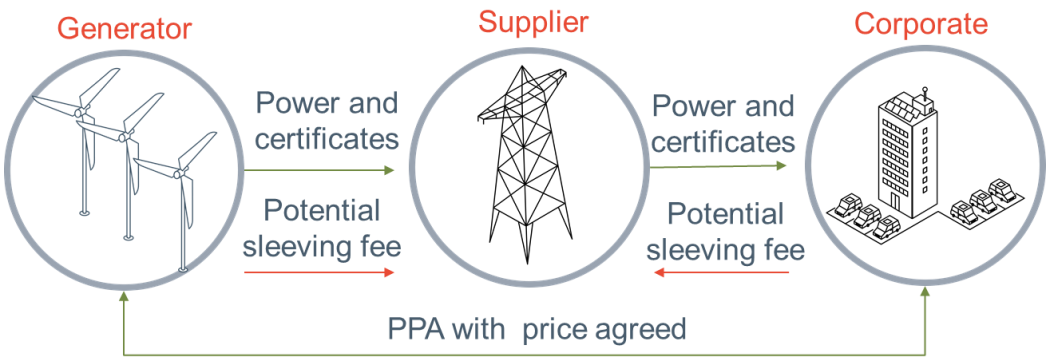
End-users can choose a generator to match their CSR needs (e.g. green, local) and as renewable energy generation becomes cheaper, prices have come closer in line with wider market prices. However, given lack of diversification in generation and supplier fees for the facilitation of the contract and to cover issues such as portfolio balancing, LAs should not expect lower prices than the wider wholesale market in the round.

While many LAs have looked for sleeving to significantly cut their costs for power – including by doing deals in the past with fossil or Energy from Waste assets – this is not generally the benefit of a CPPA. Instead, LAs should look to demonstrate their CSR credentials, stabilise power prices for the long term, and create wider area economic benefits from CPPA deals.

There are two main types of CPPA: sleeved (or direct), and synthetic (or indirect) CPPAs. The sleeved CPPA is the most common currently in Great Britain and is a contract between the corporate and the generator, with the supplier facilitating. The Synthetic CPPA is a pair of contracts, between the generator and the supplier, and the supplier and the corporate, fixing the energy price. The latter form is becoming more common as it offers more flexibility to generators and corporates, potentially allowing more than one party on each end of the deal – supporting the aggregation of generation and demand to add flexibility to contracts.

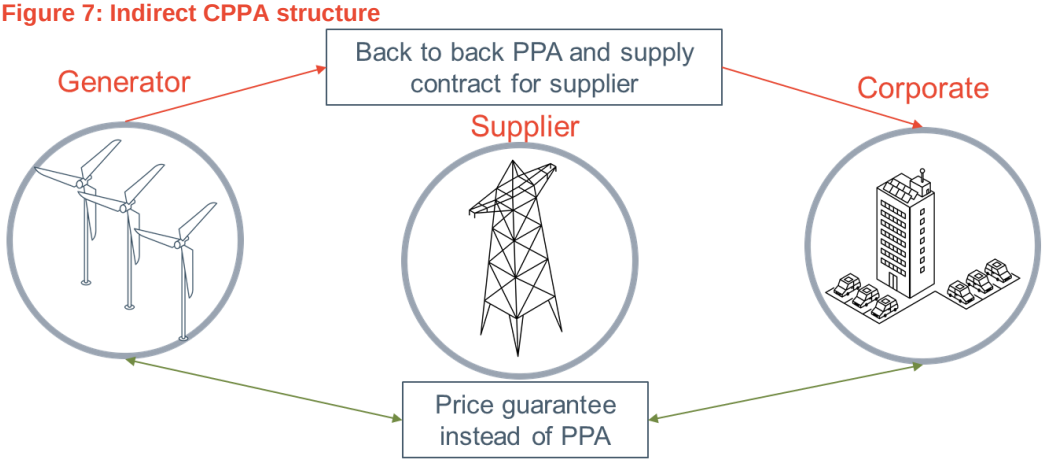
Figure 6 and Figure 7 present these structures.

Figure 6: Direct CPPA structure



[2] Typically, a longer contract tenure will see a larger discount to the cost of wholesale power, due to the certainty provided to the investors in generation assets over income for that period and therefore lower risk.

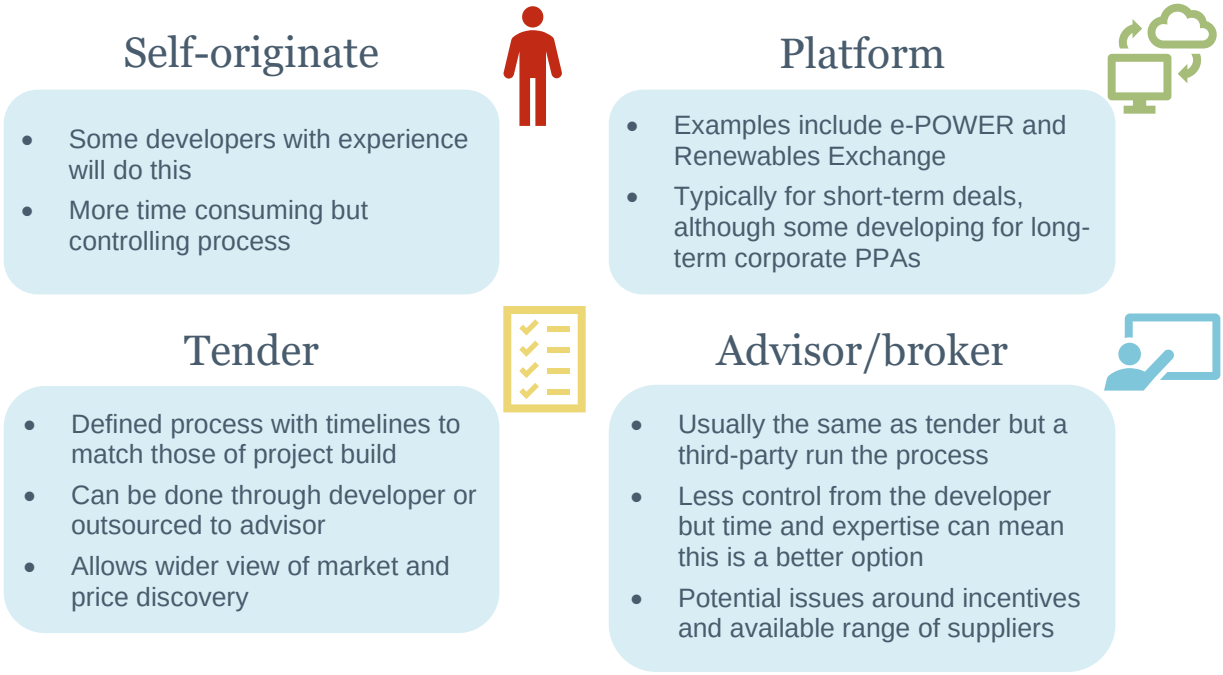
Figure 7: Indirect CPPA structure



3.1.1 Delivering a CPPA

LAs will typically seek CPPA deals in two ways: i) through building and operating their own generating assets, or ii) by a public tender process to find one or more other party in the deal (a generator and/or a supplier). Figure 8 sets out the four main routes to market for identifying partners to CPPA deals.

Figure 8: Finding a CPPA – routes to market



There are key steps to deliver a CPPA agreement, including tendering and negotiation phases.

- Development of CPPA tendering criteria with project sponsors, including a clear understanding of underlying goals for the exercise
- High-level assessment of commercial and contractual terms that the LA could achieve from the CPPA
- Determination of potential generator and supplier lists
- Drafting of Invitation to Tender (ITT)/ Request for Proposal (RFP) documentation
- Issuing of RFP to potential generators (and suppliers if necessary), management of queries in respect of the CPPA and the LAs requirements
- Commercial and contractual assessment of initial ITT/ RFP responses
- Short-list of generators (and suppliers) for interview by the LA and further discussion/ negotiation to seek further clarity on commercial and contractual terms

- Updating the commercial and contractual analysis as a result of the interviews to determine a preferred generator (and supplier)
- Negotiating amended PPA terms with the preferred generator (and supplier) in conjunction with legal support

Figure 9: SWOT analysis for corporate PPAs

Strengths	Weaknesses	Opportunities	Threats
Provides "additionality" – CSR benefits	Complex, with many moving parts and participants	Long term, fixed price agreement offers chance of underpaying for power	Long term, fixed price agreement runs risk of overpaying for power
Fixes power price over the long term, delivering stability	Risks in balancing generation and consumption, or paying fees for this	Can support a business case for the LA to invest in its own offsite generation assets	Lack of flexibility in contracting, typically locked in for 5 to 12 years under one agreement
Wider economic benefits	Tends not to offer cost reductions	Growing awareness and market for CPPAs	Price cannibalisation potentially lowering price offset through CPPA

Source: Cornwall Insight

3.2 Detailed overview of the SWOT

3.2.1 Balancing responsibilities

Generally, under a CPPA the supplier will retain responsibility for balancing the end user's consumption against the generator's output. This includes both buying extra energy to top-up when the generator produces less than the end user consumes and selling excess generation when it produces more than is consumed. These purchases and sales will generally be done on the Day-Ahead or Intraday Markets; the CPPA contract will set out the exact arrangements.

The contract will also set out who is responsible for the costs or will benefit from the profits of this sale. Typically, this will be the end user.

This drives an additional risk to the party responsible. Sales of excess energy are likely to derive lower value than average prices, as wholesale energy prices tend to fall when renewable generators are experiencing a period of high generation. Purchasing extra energy will tend to be more expensive due to the inverse of this effect. This may not be the case if the business has an energy-use pattern very different from the average GB consumption patterns – e.g. consuming a lot of energy overnight or at the weekend – or can be flexible in when it uses energy.

3.2.2 Additionality

Delivering the LA's power requirements from a specific named generator offers the highest level of environmental CSR benefits to the organisation. A CPPA can also help deliver other LA objectives – supporting the local economy by delivering low carbon generation construction and operation jobs or providing community benefits, for example.

3.2.3 Complexity

With two other participants to identify and negotiate with, and a raft of contract terms and conditions as well as pricing levels to agree, delivering a CPPA is a complex and lengthy task. Some of the key contract terms and risks are set out below in Figure 10.

Figure 10: CPPA key terms and risks

Risk	Developer/ Investor view	Corporate/ LA view
Pricing	Ensuring fixed price meets lender requirements and debt service	Needs to make economic sense against forward wholesale curve and price forecasts
Contract duration	Matching against typical long-term PPAs	Ensuring tenure does not go beyond planning horizons of wider business
Other benefits	Ensuring these are worked into pricing agreement	Risks around change in law clauses and pricing unknown benefits
Volume	Ensuring risk is not all on project in event of non-delivery	Minimum volume may need to be guaranteed
Production	Performance guarantees may need insurance	Corporate will take view from technical advisor on production and any expected shortages
Fees and shaping	May try to reduce costs of shaping or pass risk to supplier	May look to shape proportion of consumption or smaller CPPA
Development risk	Ensuring adequate buffers in place against project delays	Back-up or standard supply agreements scoped in case of delay – generator might pay
Credit risk	Creditworthiness of corporate is key and will affect willingness to sign the deal and potentially, for those with high ratings, cost reductions	Ensuring credit or PCG provision does not impact pricing
Change in law/ Force Majeure	Ensuring wide remit of FM parameters and risk allocation is shared	Conditions around purchase from other generators in FM event

Source: Cornwall Insight

Our experience of the process of delivering CPPAs with clients has also indicated a need to involve and educate senior decision makers and financial professionals at the earliest opportunity. The LA team working to deliver the CPPA should remember that these individuals may not be aware of how the energy markets and energy procurement functions and how a CPPA arrangement differs from this. Education should include:

- Status quo arrangements for purchasing energy and the energy market
- The structure of the new arrangement, including where value arises and where it does not
- A frank assessment of the benefits and risks of the new arrangement

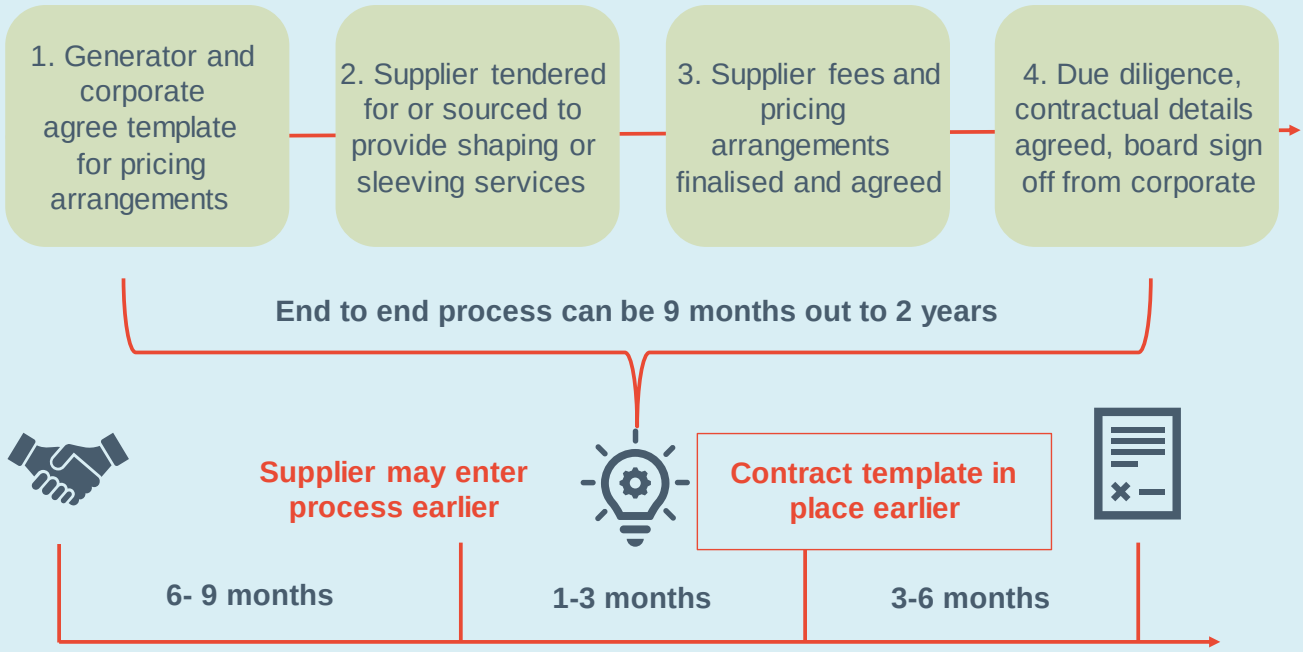
This will allow them to make an educated decision on the CPPA and to think about the value of the deal in terms of risk minimisation – a concept financial professionals will be familiar with – instead of as a nebulous potential cost saving over time.

Delivering a CPPA requires expert energy market support – as well as legal advisors. The scale of LA energy consumption portfolios is sufficient to make it worthwhile nonetheless – if the exercise is successful.

Process of signing a CPPA

There are a number of materials available online to assist with this process; in particular RE-Source, a European body set up to promote CPPAs, provides a toolkit here.

The process consists of:



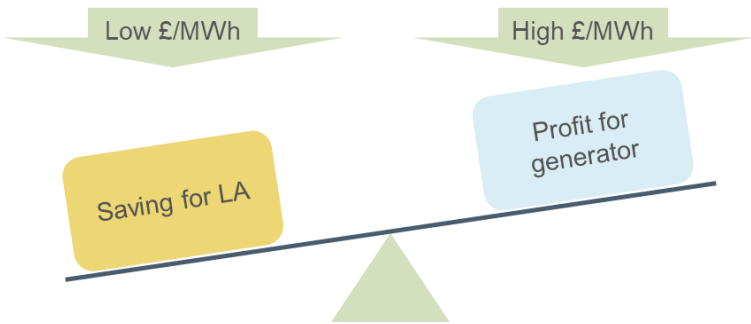
Risks	Mitigations
Cannibalisation	Account for in the price arrangements Battery storage or flexible consumption to limit impacts
Regulatory change and network charging reforms	Difficult to cover in contracts Generator may
Corporate creditworthiness	Credit calls/ re-openers Multi corporate deals or an anchor corporate
Additionality	Direct matching of generation to demand Separate sale of REGOs
Subsidy interaction	Alignment to subsidy timelines Generators may face one-off choice between subsidy and CPPA

3.2.4 Profit allocation

Some LAs have been able to improve their ability to deliver front-line services by using CPPA deals to sleeve power from their own generation assets into their portfolios.

Controlling both ends of the CPPA arrangement means that LAs can set the power price paid to the generator.

Setting a low price will reduce generator profits but produce savings in operational budgets. These savings in operational costs could potentially be more easily reallocated in budgets than could profits from an investment, though a minimum return to pay off the investment would be required.



3.3 Examples

Several recent examples of CPPA have been delivered by LAs and other public bodies, as well as by corporates.

3.3.1 American blue-chips

The original wave of CPPAs were – and continue to be – signed by American blue-chip companies, particularly tech giants including Google, Amazon, Facebook and Microsoft. These companies have the financial resources, credit ratings and – via their customer base – the need to decarbonise their energy portfolios to meet CSR objectives and contribute to combatting climate change. Google, for example, has globally signed 52 CPPAs for 5.5GW of renewable generation capacity; Microsoft has over 1.9GW. For these mega-corporations, CSR benefits are more valuable than the cost of doing CPPA deals.

3.3.2 UK Universities

20 UK Universities signed a 10-year, £50mn deal with Statkraft in October 2019. The deal was facilitated by sleeving through The Energy Consortium's (TEC's) framework, including current energy supplier EDF Energy. TEC noted that the agreement would provide the participants both with certainty on the budget for energy going forwards, but also flexibility as the arrangement does not completely cover each University's needs.

The aggregated nature of the portfolio allows organisations with smaller portfolios and less secure credit to sign deals which may not otherwise have been possible. The contract arrangement may also allow for additional members to join over time.

3.3.3 City of London

Recently ran a tender process for 35-55GWh/year of renewable power from named, new-build onshore wind or solar generators – aiming for close to 45GWh/year. The 15-year deal was expected to be worth around £30.4mn and indexed to CPI over the term. Green certificates were required as part of the arrangement. The results of this tender, which closed 24 January, have not yet been announced, but it is believed that the exercise was successful in delivering a partner for further negotiation.

4 LA Ownership of Assets

4.1 Description

Ownership of energy assets is increasingly attractive to LAs in order to maximise green and sustainability credentials, in order to support self-supply, create local jobs, and to provide the LA with ongoing revenue streams. While we have incorporated ownership of energy assets into a single chapter, there is a substantial difference between constructing and operating a 10MW solar farm compared to a 50kW array on the rooftop of public estate.

The Energy Hubs were set up by BEIS and the Local Enterprise Partnerships to support Local Authorities to develop Local Energy projects. The Energy Hubs can provide free early stage project development support from concept development through feasibility to business case. The Energy Hubs have developed a range of resources to support local authorities in developing projects. For a more detailed overview of developing local energy projects, please refer to the Step-by-Step Guide to Local Energy and the Local Energy Guide which provides an overview of the Local Energy sector. To discuss a project with the Energy Hub, please email info@energyhub.org.uk or complete an enquiry form.

Traditionally an LA will subcontract to an engineering, procurement and construction (EPC) provider who will deliver or subcontract much of the planning, development, construction and commissioning work when building their own asset.

4.1.1 Development process/ decision gates

The high-level stages in developing an energy asset are:

- **Financial considerations:**
  - Development Finance – early stage, high risk project development finance may be limited in public sector budgets, the Energy Hubs can support eligible projects through to business case development. Where internal project development funds are available a LA will typically outsource these elements. Partnerships for a joint venture approach may also be developed with the private or community sector to reduce financial risk
  - Capital Financing – typically not an issue with LA-owned assets
    - Proportion of debt and equity, financial partner, loan rates etc.
  - Understanding the business plan
    - Revenues and costs, profit and loss, profiling, avoided costs in the case of an on-site asset
    - This will include “typical” commercial contracts such as power purchase agreements (PPAs) and operations and maintenance (O&M) contracts, to be updated with site-specific costs once known
  - Updating the forecast position with out-turn revenues, and refining financial mode for market developments and regulatory change

- **Feasibility & business case**
  - Concept development and options appraisal
  - Site selection
  - Feasibility studies
  - Business case
  - Procurement options

- **Detailed design & planning:**
  - Local engagement, engagement with the landowner (if separate entity to the council)
    - Securing an option to lease or purchase the land
  - Securing a connection offer, typically from the local distribution network owner (DNO)
  - Planning application
    - This is potentially not needed for rooftop solar or other very small-scale assets subject to criteria
    - Including preapplication - consultation with Local Planning Authority and local community
    - Post-planning consents
  - Securing contracts for delivery of the site and ongoing maintenance and revenues
    - Construction quotation and costing
    - O&M quotation and costing
    - PPA tendering and agreement of terms.
  - The prior stages enable a Final Investment Decision to be made (referred to as financial close), which in turn enables construction to commence

- **Physical construction and connection:**
  - Lease/ purchase land
  - Construction
    - Length of time in this phase depends on asset type and size
  - Commissioning and connections

- Operations and maintenance – 25 year+ lifetime

- **End of asset lifetime decisions**
  - Refurbishing or other options

These stages and their duration can vary slightly depending on the type of asset being developed. A council may be building on its own land, avoiding any negotiation there. It may also sole-fund the asset, avoiding the need to engage with potential debt providers.

Rooftop solar or other small-scale renewable assets on-site may avoid the need for planning and grid connections (although appropriate documentation should be submitted to inform the DNO of the asset). Similarly, if the generation is consumed on site, there is no need for a PPA. These differences are explored further overleaf.

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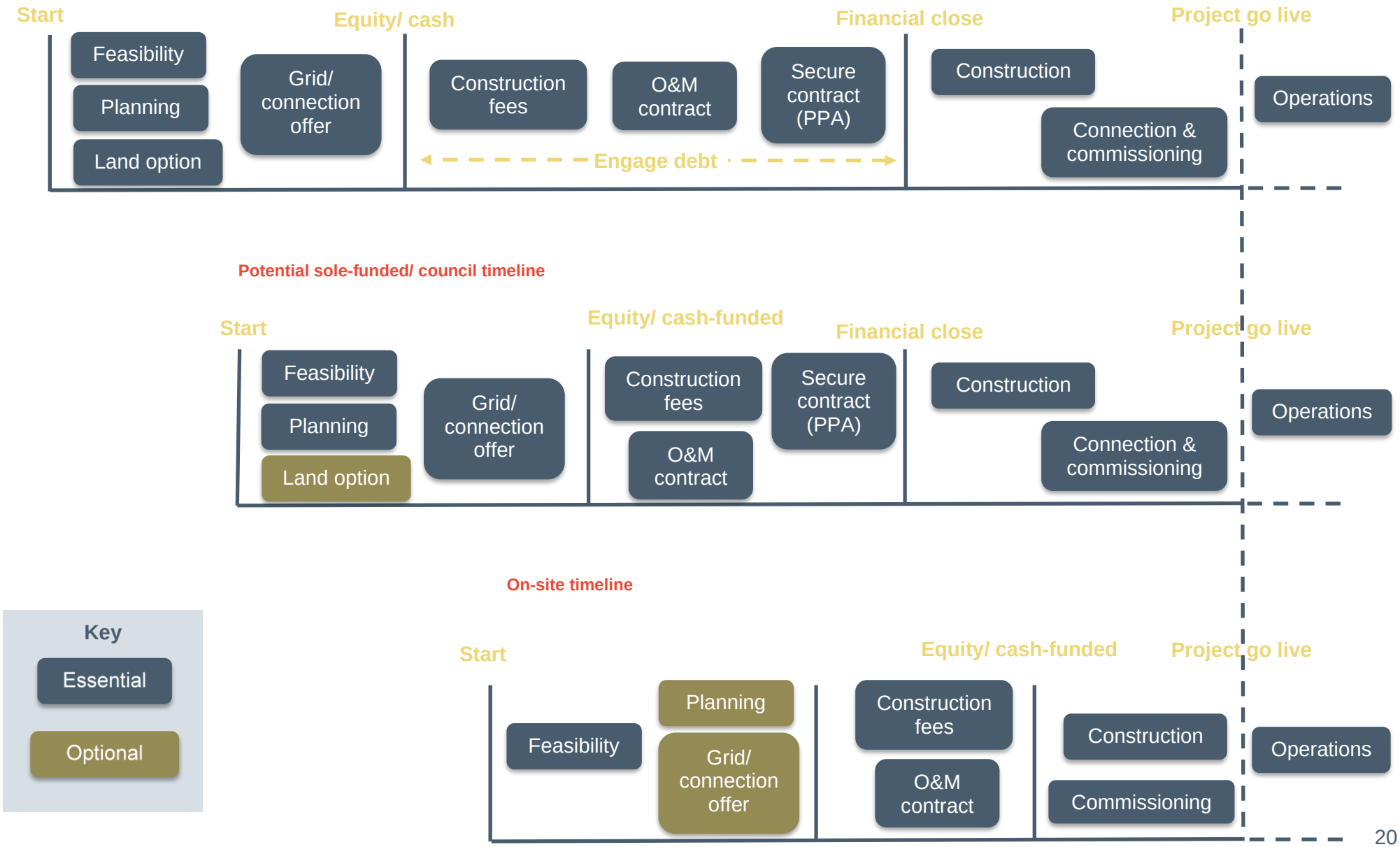
Figure 11: Typical project development timeline



Many of these stages require a high degree of technical knowledge and the LA will typically outsource many elements, including development of the business plan, planning support, dealing with grid connections, construction and commissioning.

There are also various degrees of ownership, such as sole council ownership, joint ventures (JVs), or leasing the land for a developer to construct the energy asset. These further models are discussed in following chapters.

4.2 SWOT

Figure 12: SWOT summary for LA ownership of assets

Strengths	Weaknesses	Opportunities	Threats
Strong renewable and green credentials	High risk option – fully exposed to market movements unless fixed price PPAs can be secured	Maximising access to cheap capital	Targeted Charging Review and network charging reform
Potentially bring jobs and investment to the community.	Potentially complex, lengthy and risky development process	Use of underutilised assets like disused land, roof space	Network constraints, planning restrictions
Owning generation assets provides for some mitigation of price risk or value sharing	A potential lack of council knowledge of the project development process – outsourcing will entail costs	Re-opening of Pot 1 technologies (onshore wind, solar) in CfD regime	Potential double-counting – any CSR credits claimed must be accompanied by retiring certificates
Behind the meter assets can potentially provide power at lower cost than can be purchased on the energy market	One of the slowest options being considered – a number of months before the asset will be operational	Use of the local Energy Hub's knowledge and that of external advisors	Wholesale price movements – currently very low

Source: Cornwall Insight

4.2.1 SWOT Detail

- Strengths – LA ownership of renewable assets provides the strongest and clearest link to a renewable or low carbon commitment, and therefore are particularly attractive to any LAs with a strong low-carbon focus. The asset can support jobs in the local community, although much of the economic activity will take place during the development and construction phases of the project.
- Weaknesses – This option exposes the LA to all costs and benefits associated with owning an energy asset, and therefore it is a risky investment without revenue certainty or support provided through subsidy. As noted in the "opportunities" section, Pot 1 of the Contracts for Difference (CfD) subsidy has recently reopened to established technologies, providing some potential support in the future. Similarly the LA is exposed to the planning, consents and construction process, which it is not likely to be an expert in. It will be able to manage elements of these to an extent through subcontracting to experts.
- Opportunities – Developing an energy asset (regardless of whether this is solely owned) allows the LA to make use of underutilised assets such as roof space, disused land, and other areas, improving local productivity. The reopening of CfD pot one to established technologies also potentially presents an opportunity for financial support, although strike prices of offshore wind are clearing very low, with prices falling below £40/MWh.
- Threats – Industry reform is ongoing and consistently in flux as the energy system adapts to the challenges of a low-carbon decentralised system. The ongoing review of embedded benefits and network charging is going to negatively impact the business case for behind the meter assets from 2021, while embedded benefits are in the process of being reformed. This represents a substantial risk that

could result in all embedded benefits being removed in some areas. The likely impacts of the reform are highly locational, with the potential outcome that some embedded generation assets could be charged network costs as opposed to receiving benefits. The impact behind the meter is probably less extreme, with charges being moved from volumetric charges to fixed charges, and a potential impact of offset costs in the region of 1-2p/kWh across most regions. While there may be some benefits from lower charges as part of the reforms, the reductions in revenues for generation assets are likely to significantly outweigh the potential upside. Network constraints and planning restrictions, if substantial within the LA's area, could result in delays or significant costs for the project. We also recommend all parties ensure that any green or low-carbon statements be accompanied by the retiring of green certificates.

4.3 Example

4.3.1 Triangle Solar Farm

The Triangle Solar Farm is a 12MW solar farm owned by Cambridgeshire County Council, which is supported under the Contracts for Difference (CfD) subsidy. The farm was funded as part of a £20mn EU-funded investment to deliver guaranteed energy savings.

The Council commissioned Local Partnerships in May 2014 to develop an EPC programme to provide guaranteed energy savings. Following analysis carried out for CCC by the National Re:fit team, a mini-competition was run and service provider Bouygues appointed in early August 2014. Savills also provided support for the council as a retained agent to deliver the project.

The solar farm's success has had a role to play in inspiring the county council's corporate energy strategy. The strategy is looking to change service design and building and land management to generate income. It will in turn reduce both energy usage and carbon emissions.

5 JV Asset Development

5.1 Description

Joint venture (JV) asset development typically involves two parties partnering to deliver one or more projects. This partnership will require the establishment of a substantial governance structure in order to ensure that both parties' views are represented, and ensure that roles and responsibilities are well-defined. This will also ensure there is an appropriate allocation of revenues given the respective risks that each party is bearing in the development of the project.

JVs are typically implemented by most market players due to the significant up-front capital requirements of very large infrastructure projects. However, LAs have access to cheap capital through the public loans board and so their priorities may differ from the more traditional market participant. They may look to JV for skills/ market experience or as a risk sharing mechanism, providing the capital support and land for an experienced market participant to develop the project around.[3]

5.1.1 Development process/ decision gates

The development process is identical to that in section 4, particularly the elements related to the identification of a site, planning and permissions, tendering and quotations, and the physical construction and commissioning of the assets. However, there are some important differences:

- There is additional time and resource required in the feasibility and/or pre-feasibility stages to:
  - Identify a suitable partner that has the skills or characteristics desired of such a partner, and exploring the potential for a JV arrangement
  - Develop an appropriate governance framework that allows for suitable representation for both parties
  - Creation of an appropriate risk sharing and revenue sharing mechanism between both parties, which will typically require the drafting of one or more contracts and the involvement of legal teams from both parties
- There may be subsequent efficiencies in the development process including:
  - The potential for the JV partner to be experienced in the development of energy assets, aiding planning timescales and financial expectations, as well as having a network of tried and tested contractors that they may be able to call upon
  - JV knowledge of the typical potential pitfalls and barriers to project development, and methods of alleviating them, including grid connection offers and active network management (ANM) schemes
  - Co-development of the project should help alleviate constraints within LA workforces and time spent dealing with the energy project, allowing them to the deal with other matters
  - The potential for simpler procurement arrangements under the JV than if the council looked to develop the asset itself

5.2 SWOT

Much of the SWOT assessment for an asset developed via a JV will be similar to that of a wholly owned asset. As noted earlier, the timeframe and many of the associated risks still apply. The most important differences lie in:

- Identifying, exploring and forming a collaborative partnership with complementary skills. This can take some time and is a key hurdle in developing an asset in this regard. However, there are now a range of

[3] For more in information on how to establish a joint venture, please read *Establishing public-private Joint Ventures and partnerships for investment in and delivery of energy schemes*.

private companies that have developed energy assets in JV with an LA, and therefore recommendations and market information should be relatively easy to access with LAs that have developed similar projects

- Developing a suitable governance structure that both parties can countersign. Once the partnership has been identified and both parties have developed a suitable heads of terms, there will follow a period of legal and contractual development in order to ensure that both parties can sign key governance documents. Again, the increasing prevalence of JV partnerships may make these easier to come by
- Risk and value sharing over the lifetime of the project – unlike developing an asset alone, this option allows the LA to share this risk and any financial reward with a third party. When and how these costs and rewards are shared

Figure 13: SWOT summary for JV asset development

Strengths	Weaknesses	Opportunities	Threats
Once the governance structure is agreed this can lead to a simpler process compared to self-development – making use of external expertise	Potential lengthy implementation of governance structure and costly legal fees in negotiation and contract process	Range of parties increasingly looking to partner on subsidy-free assets	Poorly aligned approach/ desires from the collaboration
Appropriate sharing of risk and rewards	Some loss of control of and potential dispersion of ancillary benefits (e.g. location of jobs created) and reduced knowledge gain for LA	Using low-cost public money to deliver ongoing revenues for front-line services	JV governance arrangement is poorly implemented
Owning generation assets provides for some mitigation of price risk or value sharing	Information/ knowledge asymmetry between parties	Re-opening of Pot 1 technologies (onshore wind, solar) in CfD regime	Network charging reform - Forward Looking Charges and Targeted Charging Review Significant Code Review
Reduce LA time spent dealing with the project, allowing them to target other matters	Lower profit than self-development – sharing mechanism		

Source: Cornwall Insight

5.3 Examples

5.3.1 Cathkin Braes wind

Glasgow City Council and SSE established a JV to construct a £5mn 3MW wind turbine at Cathkin Braes in 2013. The turbine, which is expected to deliver 7.5GWh of renewable energy every year, took 18 weeks to construct.

5.3.2 Warrington Solar

Warrington Borough Council delivered an investment of £60mn in 60MW across two advanced high-performance solar arrays in 2019, in partnership with developer Gridserve. The council subsequently announced that it would be sleeving the output of one of these arrays into its own portfolio. According to documents published in February 2020, it expects to deliver annual savings of £865k, £805k and £945k in the first three years of operation, in addition to a community benefit fund of £85k/year for the 30-year expected life of the assets. Note this did not explicitly result in the establishment of a JV but highlights the potential for private-public partnerships.

6 Purchasing Developed Assets

6.1 Description

Purchasing a developed asset from a developer or financial institution entirely avoids the risks associated with planning, construction and delivery of a renewable energy asset. In order to maximise wider benefits, it would be beneficial if the asset were local, however this is not necessarily essential. However it requires significant due diligence review and assessment of the assets and associated business planning, which the LA may not be well placed to perform. In this instance, we strongly recommend engaging with a third party energy consultancy who can advise you on the appropriateness of the business plan and any key risks or opportunities over the short, medium and long terms.

This approach will also require significant commercial negotiation, and incur costs associated with legal and expert support in order to transact successfully.

In the approach adopted between GridServe and Warrington Borough Council, and supported by Leapfrog Finance, the LA can contract a private company to build the assets and agree a price to purchase the assets once fully developed.

6.1.1 Process

The high-level process for acquiring developed assets from developers or financial institution is:

- Initial approach
- Business plan assessment
    - Commercial, technical and wider due diligence and review
- Review of expert advice
- Negotiation
- Close

6.1.2 Initial approach

The initial stages of a successful transaction – this stage confirms that the owner(s) (the vendor(s)) of the assets is willing to sell the asset(s) in question, and will likely provide an initial indication of what the vendor(s) might expect in order to sell the asset(s).

This can be shortened if the vendor has made public statements or released other information on the potential availability of its asset(s).

If the potential vendor is open to potential sale of asset(s), there will be a further stage of detailed review of the asset in question. This will require a signed non-disclosure agreement (NDA), and will likely require the employment of one or more expert advisors to provide advice on the asset, its value, and the detail around the business plan.

6.1.3 Business plan assessment

An assessment of the business plan for the asset(s) would for example include:

- 20-year forecasts of revenue streams including power prices, the Capacity Market, network benefits and service provision
- Due diligence
    - Technical performance of assets
    - Commercial arrangements
        - Route to market, offtaker (PPA) agreements, length of contract, agreements for grid services etc

- Potential tendering for PPAs with offtakers and negotiation, including request for proposal (RfP) development, recommending a shortlist of suppliers for interview, negotiation and ongoing monitoring.
- Development of risk register including signposted, expected and potential market and regulatory change

6.1.4 Review of expert advice

This stage could be incorporated with the previous stage. It is important that the buyer takes on board the advice of expert advice, asks questions to fully understand the advice provided and any recommendations, and also review the feedback internally.

Independent expert advice can assist with the review of previous disclosed prices for recent transactions in order to determine the current market value for the asset in question. They can also assist with understanding why there may be differences in the value of assets that on paper seem similar.

6.1.5 Negotiation

Negotiation with the vendor over the sale price.

6.1.6 Close

Agreement of the sale price and timings. Transfer of funds.

6.2 SWOT

Figure 14: SWOT summary for purchasing developed assets

Strengths	Weaknesses	Opportunities	Threats
Speed – potentially much faster than developing new assets	Potentially lower returns	May be some companies looking to sell assets with network charging reform	Forward Looking Charges Significant Code Review, lowering the value of embedded benefits
Removes planning, development and construction risk	Potentially lengthy and expensive due diligence and negotiation process	Potential refurbishing opportunities if near end of operational life	Subsidy-free assets have merchant risk – i.e. exposed to future power prices.
Significant revenues if plant are subsidised – ongoing revenues over lifetime of support	Less opportunity to integrate with wider community and deliver economic benefits	Potential for future co-location with battery storage	Potential for price cannibalisation – low realised prices
Owning generation assets provides for some mitigation of price risk or value sharing	Much reduced council exposure to and accumulated knowledge of energy assets		

Source: Cornwall Insight

6.3 Examples

6.3.1 Toggam Farm solar farm

Forest Heath District Council in Suffolk purchased the Toggam Farm solar farm in Lakenheath. The 12.5MW site was purchased for £14.5mn in August 2016. The council expected the solar farm to bring in £300k in the first year from renewable subsidies, and expected this to rise to just over £700k per year after a decade. Commented on the acquisition, councillor Stephen Edwards, Forest Heath's cabinet member for resources and performance, said: "The way councils are financed is changing – our main government grant will be scrapped by around 2020 and council tax doesn't cover as much as people think. This means we have to look at new ways of investing to make money to pay for services."

7 Land Leasing Options

7.1 Description

This delivery route does not necessarily result in power or green credentials being supplied to the LA but can be leveraged to do so at no upfront cost. An LA asset will be leased – usually for a period of 20-30 years – to a developer, which will develop renewable generation technologies on it. This could include:

- Rooftop leases for solar generation
- Land leases, for solar, wind or other technology generation
- Lease of farms or other agricultural assets for the production of energy crops or biomass
- Energy from Waste deals, which tend to be complex and include topics such as gate fees for disposal of municipal waste as well as energy, and could in future include elements on waste heat
- EV charging hubs located on LA-owned land, particularly where an existing park-and-ride is repurposed

Typically, where rooftops are leased this is for a "peppercorn" (i.e. nominal) rent, with most benefits being provided to the host building via a contract to sell power to the host building, generally at an advantageous price compared to retail tariffs and including green certificates. The LA will not be exposed to any investment cost; the developer will also deliver any planning considerations and maintain the assets over their lifetime, taking any risk on the volumes of power produced.

The LA will also have a level of certainty on the cost of at least some of its power demand over the long term. However, financial benefits will be lower than had the LA developed the generation itself. The LA should be careful to secure a contract that does not risk exposure to higher prices for power than it might otherwise have paid, depending on the evolution of network charges and other non-wholesale elements of the power bill over the term of the contract.

The key advantage of roof-leasing, as opposed to self-development, is simplicity. The complexities of development and maintenance will be dealt with by experts and no cost will accrue to the LA. The disadvantage is that many of the financial benefits will be claimed by the developer.

Rents for standalone assets are likely to be on commercial terms, though again where this is adjacent to LA assets there may be a business case to supply power and certificates via a short private wire and this may be reflected in leasing terms.

7.2 SWOT

Figure 15: SWOT summary for land leasing options

Strengths	Weaknesses	Opportunities	Threats
Could be a simple method of supplying the estate with renewable energy if not just a land lease agreement	No (or minimal) CSR benefits where not behind the meter	Better use of LA building and land portfolios	Targeted Charging Review and network charging reform reducing values
Long-term, low risk revenues for the LA	Potential double-counting of green credentials	Free maintenance for unused land assets	Decommissioning of generation assets should be considered from outset
Bringing jobs and investment to the community – local focus	Little additional benefit of doing a CPPA with developer on lease vs unleased asset	CPPA or direct supply of low-cost energy to LA	Length and firmness of lease – land priorities may change
Potential to deliver low-cost green power for no upfront investment	Potentially low value to the council depending on asset and contract		

Source: Cornwall Insight

7.2.1 Low-cost energy supply

Where an LA hosts rooftop solar generation, the organisation can often obtain green power at a cost lower than buying power from the public networks, as behind the meter supply currently offers significant cost-savings on network charges and green levies. The generator can earn higher revenues than selling to the public networks, as the cost-saving for the host will typically be split between the two parties.

This is often also one of the main business models used by community energy organisations, and LAs have historically been a key partner for these organisations, which have installed generation on assets including schools and sports facilities.

However, it should be noted that this business model may come under threat from reforms to network charges as discussed in other sections. Further, if early proposals to bring some renewable subsidy costs out of the energy bill and into general taxation come to fruition then this could further reduce the value of behind the meter generation of this type.

Low-cost energy can also be provided where the LA land is adjacent to the leased land and energy is supplied via a private connection.

7.2.2 Minimal CSR benefits and potential double-counting

Where power is not supplied to the LA, little CSR benefit can be claimed in respect of green power. Wider benefits in terms of supporting local employment, improving air quality and reducing noise levels could potentially be delivered, however.

While carbon-saving benefits can be delivered by producing energy on LA assets, care should be taken not to double-count these savings. For example, if renewable energy production is being used to claim carbon emission reductions by the LA, then attendant REGO certificates or other means of demonstrating these reductions should be surrendered by the LA to demonstrate this, rather than sold in the market to another party who would also wish to claim these reductions. This can be accounted for in leasing terms and the relatively low value of these certificates make this a low-cost proposition – see Section **Error! Reference s ource not found.** for more on REGOs and other green certificates.

7.3 Examples

7.3.1 Plymouth Energy Community

Plymouth Community Energy is one example of a large number of community energy groups set up with the support of LAs. In this case, Plymouth City Council backed the group, providing support and loans in early days of the project. Its first solar share offer was launched in 2014, providing – alongside a loan from the council – sufficient funds to install 800kW of solar arrays on 21 local schools. The energy generated is sold to the host buildings, reducing the council's carbon emissions, providing income to pay off the investments, support community benefits and underpin the group's work to provide further installations.

7.3.2 West Suffolk Solar for Business

This scheme installed solar panels on the roofs of commercial buildings in the West Suffolk Council area. The council acted as a developer, leasing rooftops from business to install panels for 25-year terms, with power sold to the host organisation at reduced rates. The scheme has since been supplemented by the Greener Suffolk Business Service which also provides energy efficiency, renewable heat and renewable generation services.

This example also does not result in a reduction in carbon emissions from the LA's own portfolio, though it does support a reduction in emissions from the wider economy in the LA's area of responsibility.

8 Glossary

Term	Acronym	Definition
Behind the meter	-	Location of generation or batteries on the demand-side of the customer's meter, usually an investment to minimise third party charges for power
Capacity Market	CM	The CM is designed to ensure that there is sufficient generation capacity available to the system to maintain supply
Contract for Difference	CfD	The current support scheme for large scale low carbon generation. Suppliers are required to make payments on a £/MWh of electricity supplied basis.
Department of Business, Energy, and Industrial Strategy	BEIS	The government department responsible for GB's energy policy
Distribution Network Operator	DNO	Own and maintain the distribution networks: regional mid- and low-voltage networks which serve most customers and growing amounts of generation. There are 14 distribution regions in GB
Domestic consumer	-	A household customer
Embedded generation	-	Generators connected to the distribution, as opposed to transmission, networks. Typically, small in size and often renewable
Electric Vehicle	EV	Car, van or truck fuelled by electricity rather than fossil fuels. Zero tailpipe emissions, offering fume and noise emissions reductions, and if charged with low-carbon electricity, carbon emissions reductions also
Feed-in Tariff	FiT	The FiT scheme supports small scale (sub 5MW) generation by providing a guaranteed price for electricity generated.
Generator	-	Producers of electricity, typically either thermal (coal, oil, gas, biomass etc), nuclear, or renewable (solar, wind, hydro), though other technologies exist
Load factor	-	The amount of power a generator produces, compared to the theoretical maximum
Non-domestic consumer	-	A customer who uses energy supplied for business purposes
Offtaker	-	A purchaser of power from a generator, mostly but not exclusively an energy supplier
Power Purchase Agreement	PPA	An agreement between a supplier and generator to buy the electricity output of the generator
Renewables	-	A blanket term for "green" or "low-carbon" generation technologies. Typically include solar, wind, hydro, wave, tidal stream, biomass, and biogas. May also include hydrogen

Term	Acronym	Definition
Renewables Obligation	RO	The Renewables Obligation was the main scheme to support large scale renewable generation. Suppliers are obligated to present a certain number of Renewables Obligation Certificates (Rocs) each year for each MWh of electricity supplied.
Significant Code Review	SCR	A large and wide reaching review of the operation of an area of the electricity industry. Run by Ofgem to look into perceived faults, and allowing it to introduce sweeping changes in relatively short timescales
Supplier	-	Energy retailer
Tariff	-	An energy supply contract
Wholesale	-	The commodity price of electricity. Various prices exist, through indexes and markets. Wholesale costs make up about 35-40% of the typical electricity bill

Control sheet

Document name	Energy Procurement and Investment Models for Local Authorities
Issue date	16 March – draft, 3 April 2020 – final
Document author(s)	Dan Starman, Tom Andrews
Project owner	Dan Starman

Revision history

Date	Version no.	Summary of changes
10/03/20	0.1	First drafting of report, including sections, layout, structure
13/03/20	0.2	CPPA commentary added
17/03/20	0.5	Consolidation of different sections
	0.6	Addition of glossary and first review
	0.7	Executive summary complete
18.03.20	1.0	Released first draft – JB and KM review
17/04/2020	1.1	Revisions – TA
21/04/2020	1.2	Revisions – DS
04/06/2020	1.4	Finalisation – TA

Approvals

Approved by	Level	Signature	Date	Version

Distribution

Name	Job title	Date	Version
Tom Andrews	Senior Analyst	04/06/2020	1.4