LONGEVITY POWER

Positive Energy

Detailed Solar PV Feasibility Assessment

Zweibrücken Fashion Outlet

April 2022

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Executive Summary

Status	Description
Roof Condition	An external audit conducted on the roofs in 2016 indicated some cases of corrosion and noted the presence of patch repairs, which would indicate previous leakages. However, no fundamental problems were highlighted, and the Centre operations team is generally of the view that the roof is in a good condition. Longevity Power advises that while all corrosion should be treated prior to installation, a roof replacement should not be necessary. In the oldest parts of the Centre, the roof is over 20 years-old and Longevity Power therefore recommends targeting the newer parts of the Centre (BA3 & BA4) where possible. A scenario in which the roof is replaced at year 10 has been considered and would lower the IRR for Phase 1 of the installation from **18.9% to 17.3%.**
Roof Load	Based on the structural design drawings provided, along with the discussions with the operational team onsite, there should be sufficient allowable spare static load across the trapezoidal roof sheets (**0.15-0.2 kN/m^2**) to allow for the installation of flush-mounted solar PV panels. The flat roof sections are deemed to be less suitable. All final designs should be signed off by a qualified structural engineer prior to installation.
Regulatory	Taylor Wessing has produced a bespoke report for ZFO outlining that due to the particular ownership structure of the ZFO Propco, **it will not be subject to trade tax in the event that it was to derive additional revenue from a rooftop solar PV system**. This allows Via to proceed with the sale of electricity to both the grid and to occupiers without fear of punitive tax implications. Another key consideration is the EEG surcharge which previously made it difficult for landlords to sell power to occupiers at a discount to their current rate, while still making an acceptable return on investment. However, this is due to be abolished in July 2022, and Longevity Power have therefore excluded it from its financial model. One key regulatory issue that remains outstanding is the review of Annex 7 of the lease agreement, which will determine whether Via has recourse to recharge tenants for electricity generated from the PV system under the self-consumption model.
Financial	The financial returns associated with the solar PV installation at ZFO have improved substantially due to the inflation in electricity prices over the past 18 months, as well as proposed removal of the EEG surcharge. Consequently, the IRR for the system covering the landlord areas (Phase 1) is projected to be almost **19%**, with IRRs for the tenant supplied systems (Phase 2 & 3) of between **16-17%.**
CO_2 Emissions	The solar PV system for the landlord supplied areas can be expected to save around **700 TCO_2e over its 25-year life horizon**. While the indicative tenant-supplied system scenarios have forecasted emissions savings of **1,143 TCO_2e for Phase 2** (existing tenants) and **1,620 TCO_2e for Phase 3** (future tenants located in the extension).
Timeline	Via Outlets can proceed with Phase 1 relatively quickly, with a proposed turnaround of approximately **8 months**. Phase 2 is contingent upon getting buy-in from existing tenants and is projected to take **around 3 years until project completion**, and Phase 3 would commence upon completion of the asset extension in **2025**.

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Roof Loading Assessment

This assessment considers the spare load capacity on the roofs of Zweibrücken Fashion Outlet (ZFO). This roof loading assessment provides background information regarding the wind and snow loadings for ZFO. The results allow for a comparison between the available load capacity and the expected load from the solar PV installation.

Wind Loading

In concurrence with standard DIN EN 1991-1-3, The Deutsches Institut für Bautechnik (German Institute of Construction Technology) established four wind zones in Germany. The wind zones distinguish between the wind conditions in the country, where Zone 1 represents the weakest winds and Zone 4 the strongest. As demonstrated in Figure 1, Zweibrücken is located in Zone I which allows a basic velocity pressure of ≥ 0.32 kN/m^2 with a basic wind velocity of 22.5 m/s.

Figure 1: Germany wind zones according to DIN EN 1991-1-3

As elaborated on in the Roof Load Thresholds section below, based on the information provided to Longevity Power, there are limited allowable static loads across both the metal seam and the flat roof sections at ZFO. While creating a pitched array on a flat roof profile typically requires a mounting structure, often combined with ballasts to weigh the system down, solar panels can be installed flush with metal seam roof sheets, significantly lowering the total dead loads required. Longevity Power therefore advise PV panels to be installed across the metal seam roof sheets, where possible. Standard mechanically fixated roof clamps (See Figure 2) used in combination with aluminium rails would, alongside the PV panels themselves, impose a roof load of around 0.13 Kn/m^2 and would be able to withstand the maximum modelled wind loadings at ZFO. The roof warranty at ZFO has expired, and the penetration of the roof sheet should not therefore raise any concerns with regards to the voiding of any warranty.

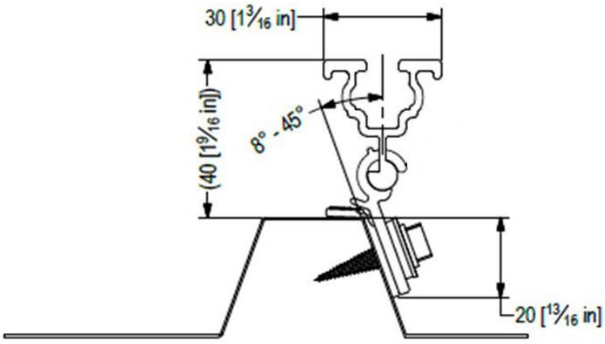

Figure 2: Clamp fixing for trapezoidal roof sheet

Snow Loading

Snow loads vary depending on several factors, primarily geographic location, topographical altitude above sea level and roof shape. As specified in DIN EN 1991-1-3- and DIN 1055-5, Germany is divided into five snow load zones (Zone 1, Zone 1a, Zone 2, Zone2a, and Zone3). The snow load zones reflect the snowfall precipitation in each region of the country. The intensity of snow load increases from Zone 1 to Zone 3. As seen in Figure 3, Zweibrücken is found in Zone 2 which allows a snow load of 0.85 kN/m^2. However, It is important to note that this value differs depending on asset-specific characteristics such as altitude above sea level and roof shape. Snow load design requirements have evolved significantly over the past 20 years and, while all of the buildings at Zweibrucken considered a flat figure of either 0.76 kN/m^2 (for BA1 & BA2) or 0.83 kN/m^2 (for BA3 & BA4), a new building would have to consider different maximum snow loads in different areas of the building, with a maximum figure closer to 1.1 kN/m^2.

A representation of the average snowfall in Zweibrücken can be seen in Figure 4. There is a seasonal variation in which snowfall is mainly present over a two-month period in December and January. In general, December receives the most snowfall, with an average of 45 mm. The weight the snow exerts on the solar PV modules and roof structure highly depends on the moisture content of the snow itself. However, the solar PV modules can support a snow load of up to 6 kN. Assuming a snowfall of 140 mm, which represents the highest snowfall event in this location, a total of 0.55 kN would be exerted on each solar PV module. Therefore, it is evident that the solar PV modules can easily support the average snowfall as well as the loads associated with the maximum snowfall events in Zweibrücken.

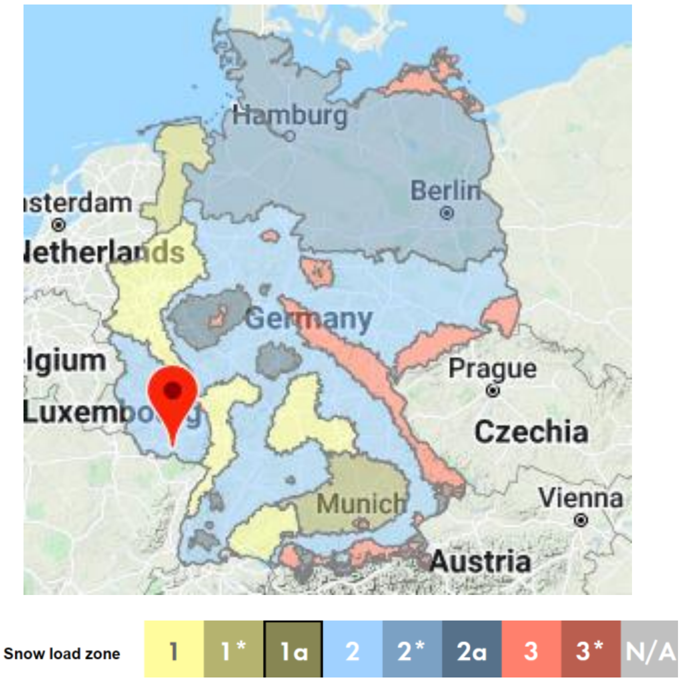

Figure 3: Germany snow load zones according to DIN EN 1991-1-3 and DIN 1055-5

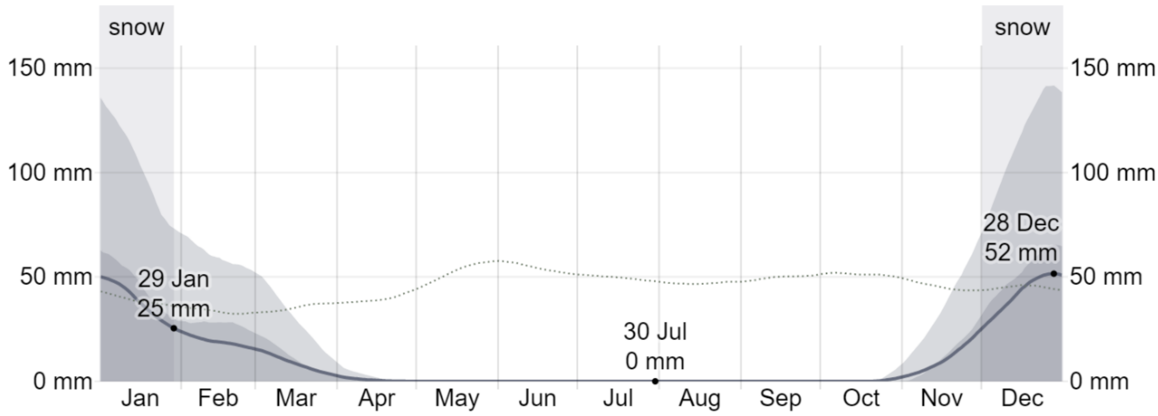

Figure 4: Average monthly snowfall in Zweibrücken

Roof Load Thresholds

The roof was built in four phases (1. BA, 2. BA, 3. BA, and 4. BA) between 2001 and 2010 (see Figure 5). Section BA1 and BA2 were built with a maximum snow load threshold of 0.76 kN/m^2, while sections BA3 and BA4 were built with a a maximum snow load threshold of 0.83 kN/m^2. Given that both roofs, were they constructed today, would have to consider a larger snow load allowance, there is a debate as to whether larger snow loads than those that were designed for at the point of construction should be considered when adding additional load such as solar PV panels to the roof. Furthermore, the actual structure may in fact be capable of taking more load than the design loads. However this would require investigation and sign off from a qualified structural engineer.

Figure 5: Site map with each construction phase marked

Summary

The values for the current roof load, designed snow load allowances and remaining roof load for PV can be seen in Table 1 below.

Roof Section	Allowed Roof Load^ (kN/m^2)	Required Snow Load (kN/m^2)*	Remaining Roof Load Available for PV (kN/m^2)^
1. BA	1.51	0.76	0.20
2. BA	1.64	0.76	0.20
3. BA	1.58	0.83	0.20
4. BA	1.76	0.83	0.40

** As designed for at the point of construction*
^These figures are taken from the structural design documents presented to Longevity Power. However the figures quoted verbally were that each roof segment can hold at least an additional 0.15 kN/m^2 to the current dead loads and snow loads

Table 1: Summary of structural loads

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It should be noted that the figures quoted in Table 1 were taken directly from the structural design documentation provided to Longevity Power. In calls with the Operations team at ZFO, an allowable load of 0.15 kN/m^2 was quoted for all roofs. With that in mind, Longevity Power suggest utilising flush mounted solar PV panels across the trapezoidal roof sheets as these would impose 0.13 kN/m^2 in additional load and would therefore sit below both the allowable loads quoted by the site team, and those found within the shared documentation. Furthermore, while it is not a formal requirement to consider the most up-to-date snow loading calculations when establishing the spare additional allowable load, pitched metal seam roofs have a lower maximum snow load build-up than flat roofs with obstructions. It is therefore less likely that, were the most up-to-date snow load calculations to be considered on the trapezoidal roof sheets, the maximum snow load figures required would be significantly different from those calculated at design-stage. Nevertheless, this should be evaluated and signed off by a qualified structural engineer prior to installation.

Future Asset Modifications

Existing Roof

The existing roof has an area of around 40,000 m^2 and is made up of a combination of trapezoidal metal sheeting and flat PVC membrane.

An external audit of the roof condition conducted in 2016 by Gleeds indicated the presence of patch repairs due to past leakages, as well as instances of corrosion on the metal seam roof. However, the report did not recommend the replacement of the roof and the facilities management team corroborated that the roofs are currently generally in a good condition. It is not therefore imperative that any of the roofs are replaced prior to installation. However, all underlying corrosion in the proposed PV panel locations should be treated prior to installation to ensure the avoidance of future leakages. Furthermore, it should be noted that none of the roofs have been replaced at ZFO and, having been constructed in 2008 and 2010, the roofs at BA3 and BA4 are therefore 7 and 9 years newer than BA1, respectively. A sensible strategy would therefore be to preferentially target the newer roofs where possible.

The layout of the Centre is such that the optimal location of the solar PV system will ultimately be driven by proximity to the point of consumption. Via Outlets will not therefore always have the luxury to choose to install PV at the most suitable roof sheets (demonstrated in Figure 6), and rather, they will be led by location of the principal load Centres.

Figure 6: Site Map with roof suitability for solar PV installations

Asset Extensions

There are development plans to complete a major building extension in 2025, a visualisation of the proposed extension can be seen in Figure 7. Building designs have not yet been finalised, however, the zoning amendment looks to include an additional 8,500 m^2 of sales areas, resulting in a total gross leasable area (GLA) expansion of 10,000 m^2 and an estimated 48 new units. The gross building area (GBA) of the expansion is 10,430 m^2 resulting in a total GBA of 41,424 m^2.

The development plans also look to expand the parking lot area with 935 new parking spaces, resulting in a total of 3,665 parking spaces.

Based on the initial development designs, it is estimated that the extension of this asset would provide enough additional roof space to install up to 379 kWp of rooftop solar PV. The extension of the parking would provide enough additional space to install up to 2,150 kWp of carport PV if this were to be considered.

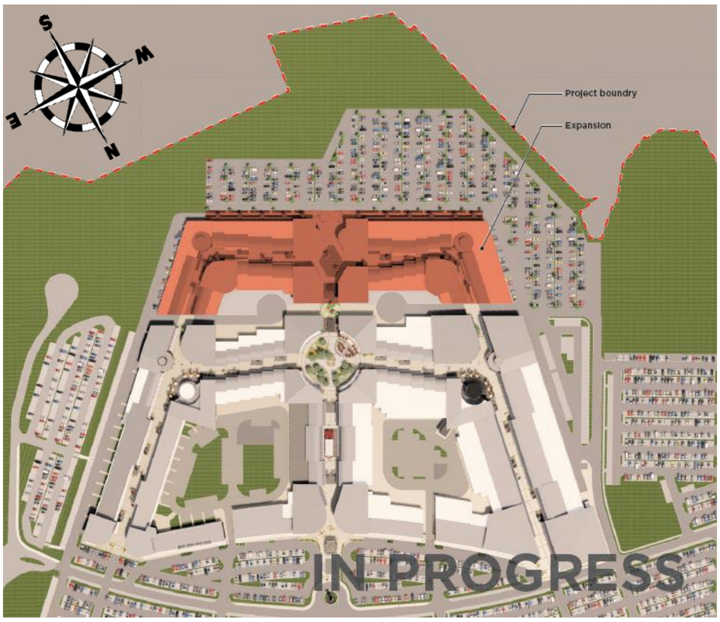

Figure 7: Site map of proposed extension

Future Asset Electricity Consumption

This section analyses the increase in electricity consumption expected as a result of the expansion of the centre, alongside the electrification of the asset's heating supply and the inclusion of electric vehicle (EV) charging stations.

Asset Expansion Electricity Consumption

The electricity consumption of the asset is expected to increase as a result of the extension. The combined landlord and tenant electricity consumption for the extension is estimated at 2,840 MWh, from which 167 MWh are attributed to the landlord and 2,673 MWh are attributed to tenant consumption. In this case, the extension would account for 25% of the total asset electricity consumption.

Electrification of Heating Supply Electricity Consumption

The electrification of the current heating supply has the potential to reduce ZFO's greenhouse gas emissions and provide substantial economic savings. This report does not seek to suggest a suitable replacement to the district heating scheme that currently serves the Centre, however for the purpose of this analysis, we have analysed the additional electrical load that would be associated with the installation of air-source heat pumps (ASHPs).

The combined landlord and tenant district heating consumption was of 11.1 GWh in 2019. Substituting the current district heating supply with an alternative form of electrified heating such as ASHPs would imply an additional electricity demand of 3.6 GWh for ZFO.

The new electricity demand from the ASHPs can be partly satisfied by a solar PV installation if it was sized accordingly, with an appropriate additional system size of 700 kWp.

It is important to note, however, that the current heating supply contract with Warme Zweibrücken has a duration of 15 years upon signature, and it is automatically extended for another five years unless termination is communicated 12 months in advance. As the contract was signed in April 2007, a 5-year renewal is expected to have taken place in April 2022, implying the extension of the contract until April 2027. Furthermore, if any new electrified heating system was to be centralised, a carport PV system would likely be more appropriate. The site at ZFO is expansive and connecting rooftop PV systems across the site with a centralised heating system would require very long cable runs which would prove costly and would contravene best practice electrical design guidelines.

Electric Vehicle Charging Stations Electricity Consumption

There are currently 4 EV charging stations installed at ZFO. However, these are owned and operated by a third-party provider, and it is therefore likely that should there be a significant expansion this would require an additional separate supply, distinct from the Centre. It would therefore be unlikely that the increased load from the EV charging would be directly born by the landlord in this instance.

German Energy Legislation

This section presents an overview of the different incentives and restrictions for solar PV installations in Germany. Details related to license and permit requirements, grid and planning applications, as well as business plans are described. Via has separately commissioned a legal review by Taylor Wessing and references to this are noted where relevant.

Current Tariff and Incentive Structure

Germany currently has incentives in place for solar PV systems of up to 10 MW. This is broadly divided into three categories as seen in Figure 8:

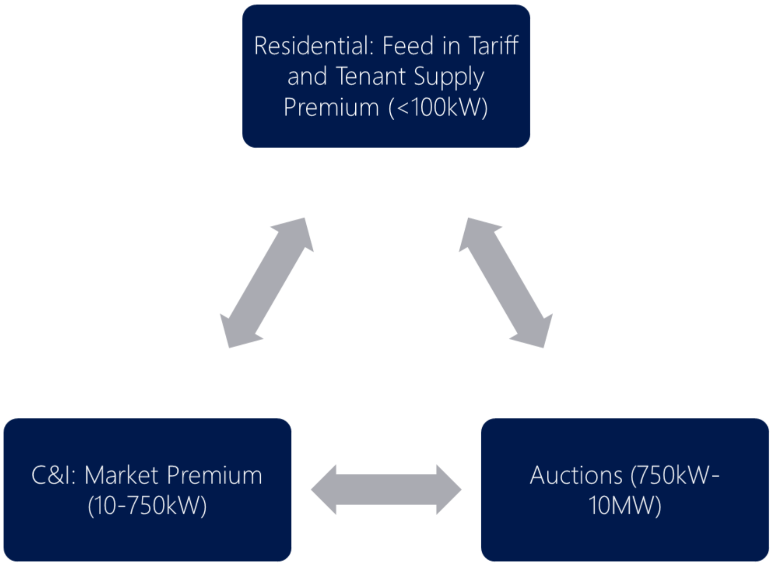

Figure 8: Types of PV incentives in Germany

Of the two non-residential schemes, one key difference is that systems participating in the auction scheme (750 kWp – 10 MWp) are unable to self-consume the power. For systems between 300-750 kWp, only 50% of the electricity generated is eligible for the export tariff. Key differences in the two schemes are outlined below in Table 2:

	Fixed Market Premium	Auctions Based Market Premium
Size	10-750 kW	750kW-10MW
Self-Consumption	Possible	Not Possible
Price Setting Mechanism	Fixed by the government	Market auction
Tariff Mechanism	Feed-in Premium (on-top of market rates) with a clawback mechanism	
Scope	For systems between 300-750kW, only 50% of generated power is eligible for the market premium	All exports obtain tariff

Table 2: Fixed premium Vs auctions

The exports would have to be marketed directly to the wholesale market via a Direct acts Marketer; effectively an agent that place the volumes onto the wholesale electricity market and helps to meet the obligations of the plant operator. The market premium includes 0.4€cts/kWh to account for this management fee, split between the generator and the Direct Marketer.

The market premium for 10-750 kW systems is structured in a tiered manner, with different premiums set for different capacity tranches (See Table 3). It should be noted that these are changed on a monthly basis, and the figures in Table 4 are therefore different to those put forward in the Taylor Wessing report. While Longevity Power has used these figures in its financial modelling, they are likely to change by the time Via Outlets has received final sign off on the installation at ZFO and they should therefore be considered as indicative. The German market premiums are nominal, which means that they are not pegged to inflation. This means that, while the market premium is valid for 20 years, based on Longevity Powers wholesale price assumptions, Via Outlets will cease to benefit from the market premium from around year 16 onwards as wholesale prices begin to outstrip the market premium.

Capacity	Market Premium (€cts/kWh) (04/2022)
Up to 10 kWp	6.93
10-40 kWp	6.74
40-750 kWp	5.36

Source: German Federal Network Agency

Table 3: German tariff levels

EEG Incentives for Self-Consumption: On top of the above export subsidy, there is also support for the self-consumption of power if the operator and consumer are the same entity. This power is subject to only 40% of the EEG levy (a renewable energy tax on all power consumed). This is a substantial amount, as the EEG levy in 2022 is 3.72 €cts/kWh, and a 60% reduction is an additional 2.23 €cts/kWh support for the system. **However, the EEG levy is to be discontinued as early as July of 2022 and has therefore been removed from Longevity Power's financial model.**

Guarantees of Origins Unavailable for Subsidised Power: Electricity generation that has qualified for the Market Premium must be sold 'bundled', alongside the guarantees of origin (GOs). This means that it may not be attractive to size the system with a focus on grid exports, as Via would not be able to retain the GOs and use them to offset emissions elsewhere in the portfolio.

Spot Market Exports: As an alternative to the market feed-in premium scheme, rooftop C&I projects may also choose to export power directly to the electricity spot market and obtain the wholesale market electricity price. Based on the ENTSO-E platform, the estimated day-ahead spot price for Germany in 2021 across daylight hour was 10.58 €cts/kWh. As transmission charges are levied on the end-user in Germany, that does not have to be taken into account on the generation side. However, 2021 saw some abnormally high wholesale market prices that could not be guaranteed for future years. The wholesale market is generally a highly variable and uncertain source of future revenue. Longevity Power therefore recommends that Via Outlets seeks to receive the market premium, due to the greater long-term security this provides.

Licensing/Regulatory Requirements

In Germany, rooftop PV system operators that sell directly to an end-user (even for those within the asset itself) are considered an electricity supplier (EltVU), which comes with certain obligations. Historically, the most important of these obligations related to the EEG surcharge, however given its scheduled discontinuation, the key considerations relate to the avoidance of electricity tax. Via Outlets must register as an electricity supplier, annually report the quantities of electricity supplied (June-May reporting period), and ensure that the installed capacity remains below 2 MWp.

Planning and Grid Applications

Planning application: Rooftop PV systems, unlike ground mounted systems, do not require permitting for their installations. It is a relatively straightforward process and can be completed online, without a permitting fee or an inspection. This is managed at a state-level within Germany.

Grid application for all systems >30 kW: C&I scale PV systems require a grid application. In these scenarios the solar PV system operator is responsible for the costs to connect the PV system to the connection point, after which the network operator will handle all costs related to the connection. If a transformer upgrade is required, the solar PV system owner may be liable for the upgrade fees. The grid application typically takes 8-10 weeks.

Business Plan and Regulations

In Germany, real estate funds often come up against an issue with trade tax. Businesses in Germany are liable to a corporate tax (relatively low at 15%) and a municipal trade tax (ranging from 14-17%). However, real estate rental income is exempt from trade tax and additional revenue gained from activities that sit outside the rental of real estate can have trade tax implications for the entire fund, undermining any potential financial returns associated with investments in projects such as rooftop solar PV.

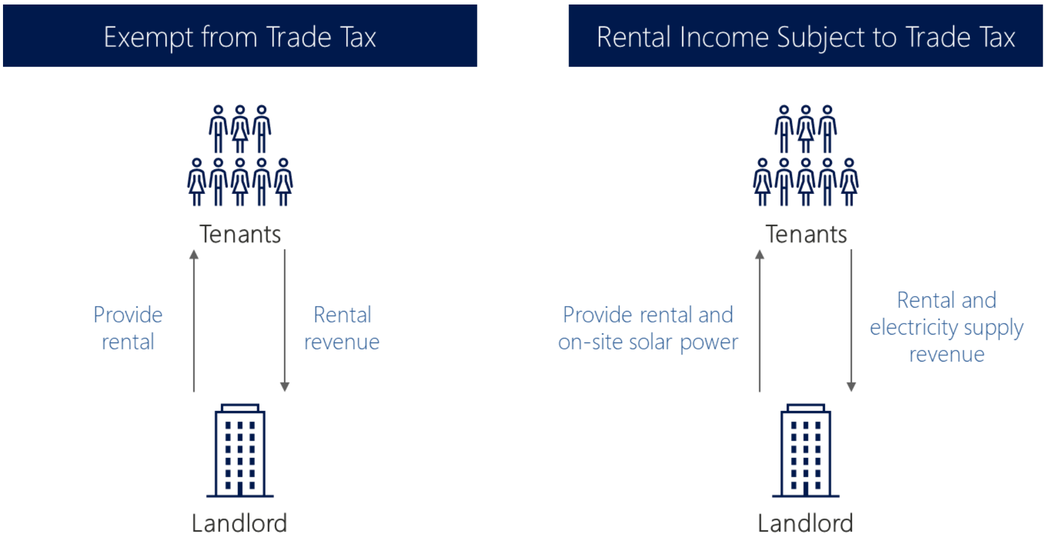

Figure 9: Business models & German trade tax

However, as outlined in the Taylor Wessing analysis, the Propco that owns ZFO does not maintain any permanent establishment in Germany and is recognized exclusively as a tax resident in the Netherlands as the country of incorporation. The PropCo is therefore not confronted with the above-mentioned trade tax issues and can derive additional revenue from the sale of electricity, both to the grid and to occupiers without fear of losing its trade tax exemption. It should be noted that the Taylor Wessing report recommends that ZFO does not derive more than 10% of its total revenue from renewable energy projects, in the event that German tax authorities identify a permanent establishment in Germany in the course of a tax audit. Longevity Power has not been provided with access to annual revenue figures for ZFO, however it is highly unlikely that the suggested installation sizes put forward would exceed 10% of total revenues, now or at any point in the course of the 25-year life horizon of the PV system.

Resale of electricity for landlord self-consumption

While the landlord is responsible for procuring all power associated with common parts and shared services at ZFO, these financial outgoings are ultimately recuperated from the tenants via the service charge. It is therefore vital to ensure that Via Outlets has recourse within existing lease agreements to recharge the occupiers for power generated from the onsite PV system at the market rate for electricity. If it were not able to do so, Via Outlets would effectively have no means of recuperating its CAPEX investment, let alone securing a return on investment. The Taylor Wessing report recommends a review into the items that are covered by Annex 7, which specifies the items which may be charged back to tenants. Until this review takes place, it is not possible to definitively state whether the installation of a PV system covering the landlord-procured electricity consumption is feasible or not. The Taylor Wessing report also highlights that tenants pay for operational charges via a monthly lump sum which can only be revised at a rate of 10% per calendar year. As the electricity generated from the PV system is to be charged at the market rate for electricity, this is not expected to be a concern.

Tenant Engagement

As we demonstrate in the Solar PV System Optimisation section, the optimal system size for the self-consumption model (or Phase 1) is 150 kWp. However, this only addresses a small proportion of the overall energy consumption for ZFO. The tenants are responsible for the majority of the energy consumption at ZFO, however they each have their own separate electricity supplies for which Via has no operational control. As noted in the Taylor Wessing report, it is not possible to oblige tenants to procure electricity from an onsite source such as solar PV. Instead, they must be enticed and enter into a formal power purchase agreement (PPA) willingly. Given that there are over 130 brands at ZFO, entering into a PPA with each of them would be an extremely time-consuming, resource-intensive exercise. A more efficient way of proceeding would be to target some of the larger consumers, as outlined in Table 4, as this would reduce the number of individual PPA contracts which would need to be negotiated. Furthermore, the larger tenants tend to occupy units elsewhere in the portfolio, which could potentially reduce the time involved in agreeing contractual terms across other Centres.

The largest tenants have been identified along with an estimate of their expected annual electricity consumption. The 20 largest tenants account for 2.9 GWh, or 36% of the total expected tenant electricity consumption.

	Tenant	Annual Electricity Consumption (MWh)
1	**Nike**	**335**
2	**Polo Ralph Lauren**	**228**
3	**Adidas**	**172**
4	**Tommy Hilfiger**	**172**
5	**Donna Mia**	**152**
6	Abercrombie & Fitch	151
7	Tom Tailor	150
8	La Place	148
9	Mustang Jeans	138
10	Calvin Klein	137
11	Levi's	133
12	JOOP!	129
13	Armani	127
14	Strellson	111
15	Marc O'Polo	110
16	Lacoste	108
17	Desigual	107
18	Michael Kors	95
19	Gant	94
20	Only	83
	Total	**2,883**

Table 4: Largest tenants by electricity consumption

Figure 10: Site map with largest tenants by electricity consumption

Rather than install each solar PV system separately, it would be more efficient to wait until a level of critical mass is achieved to install the PV systems together. While this may delay the onset of the installation, it will significantly reduce costs and operational disturbance.

Longevity Power recommends reaching out to the ten largest tenants with a high-level overview of the potential benefits associated with a PV system. By using estimated consumption values alongside an indicative load profile for high street retail in Western Europe, Via can demonstrate the projected financial and CO_2e savings to each tenant. This should provoke a follow up conversation, whereby the scheme can be discussed in more detail and once actual tariff price, electricity consumption values, and hourly load profile information is submitted, Via can put together a formal proposal. Longevity Power estimates that it could take up to 6 months from the point at which the project is introduced to the signature of the PPA contract.

The next section provides a techno-economic feasibility analysis of a solar PV installation sized considering the electricity demand of the five highest energy consumers highlighted in Table 4.

Solar PV System Optimisation

This section presents an overview of the recommended solar PV system installation. It is recommended for a phased approach to be implemented.

Phase 1 considers the landlord consumption from both the existing buildings at ZFO, and the extension from 2025 onwards, **Phase 2** considers the electricity consumption from current tenants interested in procuring onsite renewable power, and **Phase 3** looks at the potential for selling power to future occupiers as part of the extension.

Phase 1 Overview

The installation for Phase 1 is optimally sized to meet the landlord electricity demand. According to the electricity consumption data received, a total of 496 MWh is currently consumed by the landlord. As a result, our assessment considers an annual landlord electricity consumption of 496 MWh from 2023 to 2024, and a combined total of 662 MWh from 2025 (expected inauguration date for asset extension) onwards.

Phase 2 Overview

The installation for Phase 2 presented in this document is indicative and is designed to meet the electricity demand equivalent to that of the five largest tenants (Nike, Polo Ralph Lauren, Adidas, Tommy Hilfiger and Donna Mia). The estimated annual electricity consumption corresponding to these four tenants amounts to 1,059 MWh. The ultimate combination of tenants that choose to take up the offer of onsite renewable generation is uncertain, and this analysis is therefore intended to represent an indicative example of how such an arrangement might look. Likewise, the location of the panels will ultimately depend on which of the tenants decide to take up the option of solar PV. It is not advisable to feed a unit in one area with panels that are located in a different area of the Centre. It is notable that 4 of the top 5 consuming tenants are located in BA1 and BA2, the oldest parts of the Centre.

The sale of electricity to tenants would be achieved via a PPA (Power Purchase Agreement) between the solar PV system owner and each participating tenant. The PPA price is set through direct negotiations with the tenants. For the purpose of this analysis, we have assumed a 20% discount is applied to the 0.1883 €ct/kWh estimated electricity tariff. Hence, the PPA price charged to tenants would be 0.1506 €ct/kWh. However, Longevity Power are aware of schemes whereby tenants are offered a 5% reduction on their electricity tariff, and we have included a sensitivity analysis so that Via Outlets can observe the IRR associated with different PPA values.

Phase 3 Overview

The development of the extension at ZFO raises the prospect that from 2025 onwards, new tenants in this part of the Centre could be presented with the potential to procure onsite solar PV power from the inception of their lease contract. Whether this is possible and crucially, whether it would ease the administrative burden for Via Outlets by negating the requirement for multiple separate PPAs needs to be evaluated more comprehensively from a legal perspective. In lieu of this analysis, Longevity Power have analysed the potential of utilising the additional roof space for PV. In the Future Asset Modifications section, we estimate that the new extension would have the capacity to support approximately 379 kWp of additional solar PV. For the purpose of this analysis. We have assumed that around 60% of the new tenants take up the option of procuring PV power, which would lead to an optimal system size of 330 kWp. As with Phase 2, the designs for the extension have not yet been finalised and this analysis is therefore purely indicative.

Scenario Overview

An overview of the installation details for the landlord owned and the third-party scenarios for Phases 1, 2 and 3 can be seen in Table 5 below.

	Landlord Owned	3rd Party	Landlord Owned	3rd Party	Landlord Owned	3rd Party
	Phase 1		Phase 2		Phase 3	
System size	150 kWp	150 kWp	240 kWp	240 kWp	330 kWp	330 kWp
Investment (Y0)	€ 143,168	€ 0	€ 215,606	€ 0	€ 288,800	€ 0
Capex/kWp^	€ 952	€ 0	€ 898	€ 0	€ 875	€ 0
Electricity reduction	20%	20%	20%	20%	19%	19%
25-year IRR^^	18.9%	N/A	16.6%	N/A	17.5%	N/A
25-year IRR with carbon tax^^^	21.01%	N/A	19.0%	N/A	20.0%	N/A
NPV^^	€ 264,064	€ 140,992	€ 313,311	€ 166,274	€ 459,608	€ 244,431
Power export to grid (%)	17.4%	17.4%	16.7%	16.7%	13.6%	13.6%

^Pre capital subsidy
^^Pre-tax. NPV based on assumed WACC of 5.6%.
^^^Pre-tax with the exception of projected carbon tax based on IEA estimates.

Table 5: Overview of installation scenarios

The IRRs of each Phase have improved significantly, owing to both the increase in electricity tariff prices witnessed over the past 18 months, as well as the removal of the EEG surcharge, which significantly impacted the returns associated with both self-consumption and sales to tenants. These IRRs are projected to increase further still, should we see a meaningful price of carbon imposed upon building emissions over the next 5 years. While in the case of Phase 2 and Phase 3, carbon taxes would ultimately be born by the tenants, Longevity Power has assumed that these tenant savings would be accounted for in some way in the PPA price provided. For Phases 2 and 3, Longevity Power has assumed that the PPA provided would represent a 20% reduction in market price. However, **Error! Reference source not found.** explores the IRRs associated with a range of different reductions.

	25%	20%	15%	10%	5%
Phase 2	15.54%	16.60%	17.64%	18.67%	19.69%
Phase 3	16.38%	17.50%	18.59%	19.67%	20.74%

Table 6: Sensitivity analysis assessing the IRR associated with different market price reductions in PPA price for Phase 2 and Phase 3

While Longevity Power have not seen any information to indicate that a roof replacement would be necessary prior to installation, a roof replacement in year 10 would reduce the Phase 1 IRR from 18.9% to 17.3%, Likewise, Phase 2 IRR would decrease from 16.6% to 14.7%.

Site Layout

The proposed location for the Phase 1 installation is shown in Figure 11. The two roofs where the solar PV installation would be installed were chosen due to their size and proximity to the transformers, so as to reduce the length of the cable run. The location for the installation in Phase 2 would have to be determined once the participating tenants are confirmed to ensure close proximity to each tenant meter. However, the key tenant locations in Figure 10 give a good indication of the likely PV locations. The layout of the installation for Phase 3 will ultimately depend on the final design, as well as the tenants that choose to sign up to the scheme, however the general location can be seen in Figure 7.

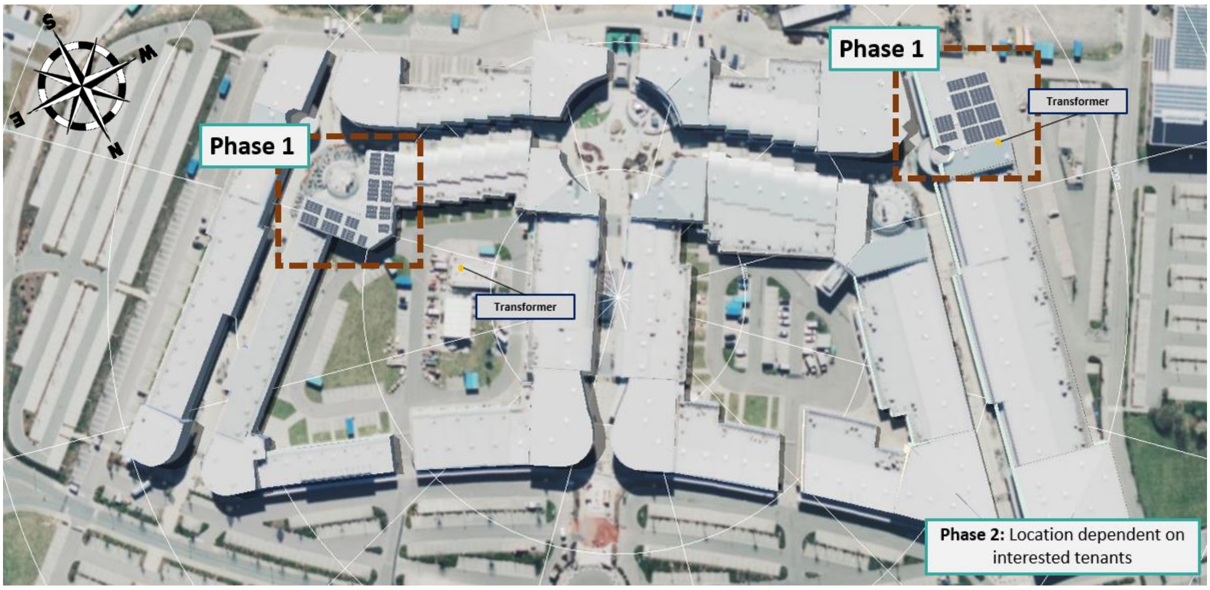

Figure 11: 150 kWp (phase 1) South-facing solar PV installations on existing roof

Carbon Abatement Forecasts

This section analyses the carbon abatement forecasts from Phase 1, Phase 2 and Phase 3, presenting the cumulative emissions savings forecasted throughout the 25-year lifetime of the installations.

To carry out 25-year carbon abatement forecasting, it has been assumed that the current grid CO_2e intensity will reduce in accordance with Germany's net zero carbon commitments, thereby reducing the annual emissions abatement associated with the installations, as seen in Figure 12.

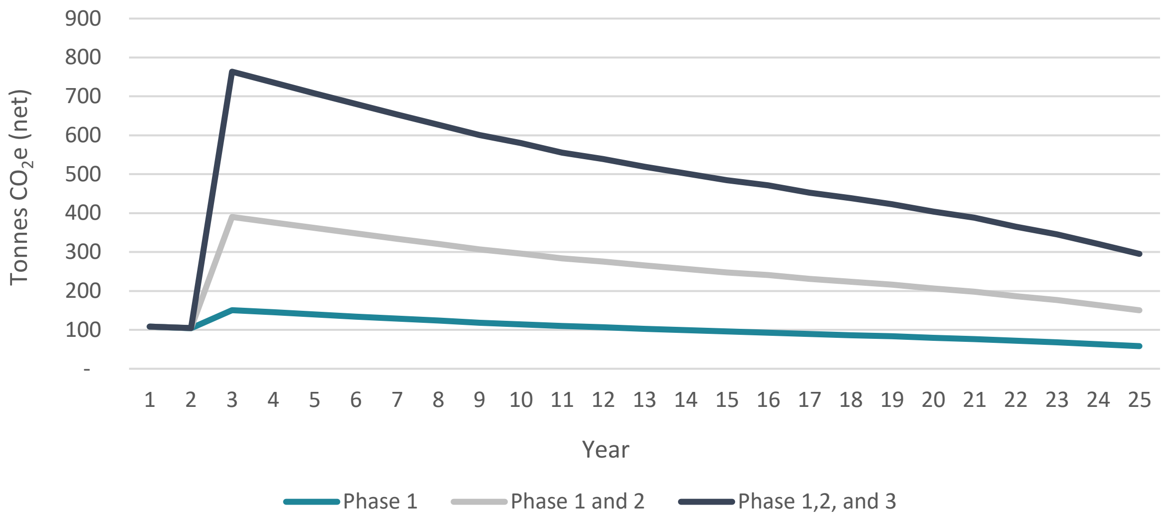

Figure 12: Annual CO_2e emissions abated for different scenarios

According to German legislation, operators benefitting from the market premium cannot keep GOs for exported electricity. Instead, the electricity must be sold 'bundled' with the GOs. This means that, from a reporting perspective, Via Outlets would only be able to retain the GOs and use them to offset emissions elsewhere in the portfolio once the market premium ends from year 20 onwards. Likewise, it is expected that in the roof rental scenario, the third-party operator would retain the GOs for all exported power, unless Via Outlets explicitly negotiate otherwise.

The carbon abatement forecasts for Phase 1 can be seen in Figure 13. The solar PV system can be expected to save 700 TCO_2e over its 25-year life horizon, including scope 2 and exported emissions from year 20 onwards.

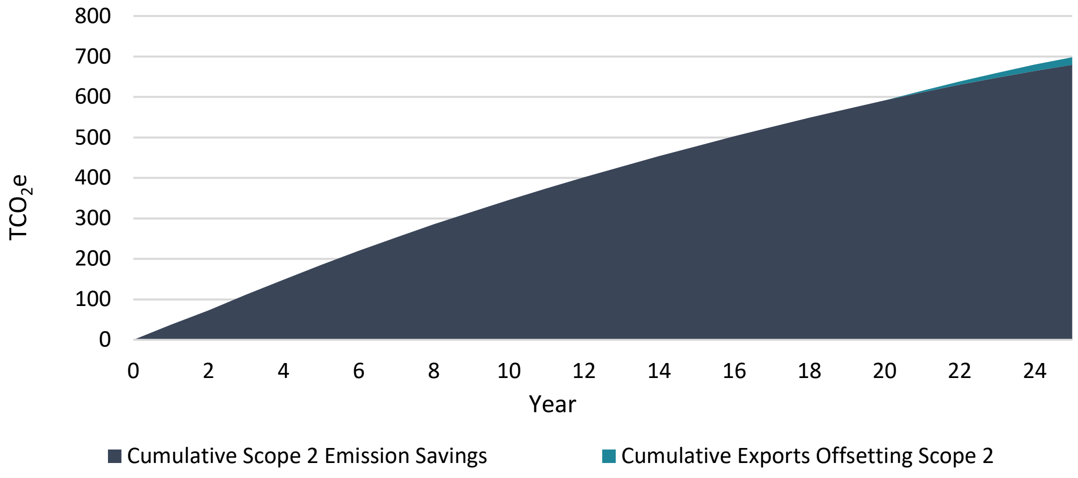

Figure 13: Phase 1 cumulative TCO_2e emissions abated

The carbon abatement forecasts for Phase 2 can be seen in Figure 14. The solar PV system can be expected to save 1,143 TCO_2e over 25 years including scope 3 and exported emissions from year 20 onwards.

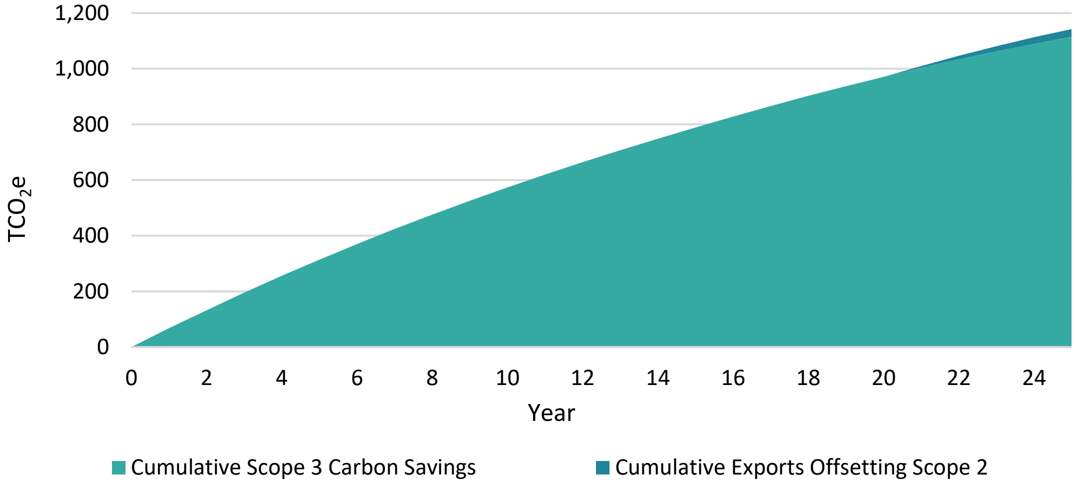

Figure 14: Phase 2 cumulative TCO_2e emissions abated

The carbon abatement forecasts for Phase 3 can be seen in Figure 15. The solar PV system can be expected to save 1,620 TCO_2e over 25 years including scope 3 and exported emissions from year 20 onwards.

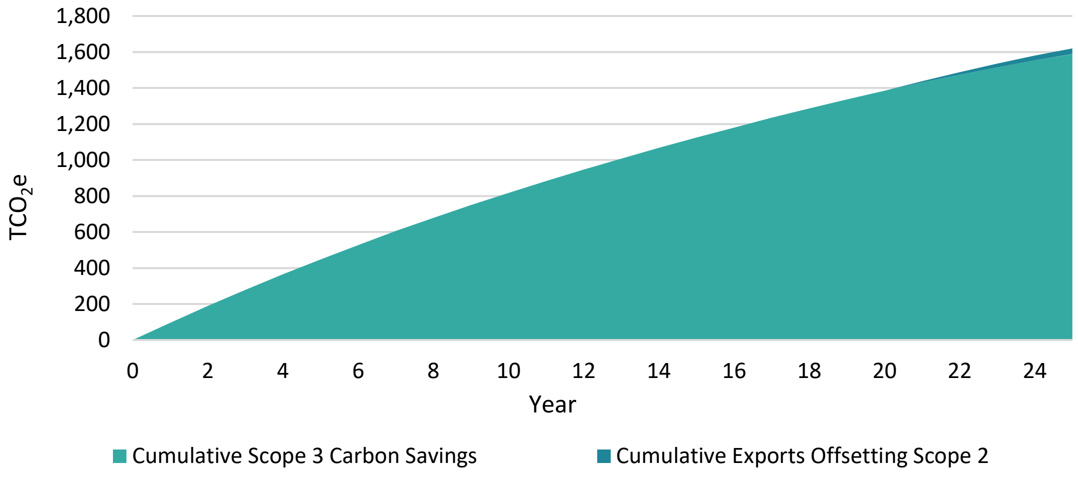

Figure 15: Phase 3 cumulative TCO_2e emissions abated

Installation Schedule

A breakdown of the expected costs for Phases 1, 2 & 3 can be seen in Table 7. These costs collectively give the total CAPEX cost for a landlord owned PV system. For a roof rental scenario, all these costs would be taken on by a third party.

Category	Phase 1 (€)	Phase 2 (€)	Phase 3 (€)
Modules	38,159	60,000	81,840
BOS Costs	6,711	10,560	14,190
Structure	19,361	27,360	36,310
Transformer Upgrade	0	1,200	4,290
Health and Safety	664	960	1,320
Installation and Labour	51,231	79,440	105,270
Margin	17,430	26,880	36,630
Estimated CAPEX	**133,555**	**206,400**	**279,850**

Table 7: Breakdown of systems and installation costs for each Phase

The timeline for the proposed installation differs based on whether the system is owned by Via or a third party. A schedule for installing Phase 1 (landlord owned) can be seen below in Table 8.

#	TASK	Phase 1 Project Timeline – Landlord Owned (Months)							
		1	2	3	4	5	6	7	8
1	Legal Review of Annex 7								
2	Sign off on all structural loads								
3	Competitive Tender								
4	Grid Application								
5	Planning Application								
6	Installation & Commissioning								

Table 8: Schedule for the installation of Phase 1

There are several key items that need to be evaluated before Via Outlets can proceed with Phase 1; namely the sign off on the **structural loads**, and the **legal review of Annex 7** to ensure that the landlord can recharge the tenants at the market rate for electricity generated and consumed by the common areas. Assuming both these evaluations yield a positive response, Via Outlets should conduct a **competitive tender** for the installation. All **grid and planning applications** should be included within the scope of this tender and would cover the grid connection, construction, and usage agreements as well as the meter operator agreements and sign up to the market premium scheme. Longevity Power can run such a competitive tender, evaluating the relevant suppliers based on track record with similar asset types and similar blue-chip clients, quality of submitted design, price, and quality of equipment specified. Longevity Power would also make clear design specifications, as outlined in this report.

A similar schedule for installing a third party owned (rooftop rental scenario) system can be seen below in Table 9.

#	TASK	Phase 1 Project Timeline – Third-Party Owned (Months)							
		1	2	3	4	5	6	7	8
1	Legal Review of Annex 7								
2	Sign off on all structural loads								
3	RFP Management								
4	Bid Evaluation								
5	Grid & Planning Oversight								
6	Project Monitoring								

Table 9: Schedule for Phase 1 (third-party owned)

In the **RFP Management** phase, Longevity Power identifies and assesses a selection of appropriate third-party PPA providers, providing them with the RFP and design brief, with strict guidelines over the quality of the PV system and clear, best-in-class design guidelines. During the **Bid Evaluation** process, Longevity Power assesses all proposals received and applies a rating based on their country-specific track record, proposed system design and approach, contractual roof leasing terms and landlord obligations, production guarantees, and price offers, along with their proposals for decommissioning/end-of-PPA system management. Based on this, VIA Outlets should have a clear idea of which supplier to take forward to installation stage.

During the grid and planning application process, Longevity Power maintains **Grid & Planning Oversight** to ensure that all submitted applications align with the design brief. Likewise, during the installation phase, Longevity Power provides **Project Monitoring** to ensure that third-party contractors are adhering to local and national electrical and equipment regulations, staying on time with project design and delivery as well as installing in-line with design specifications. Furthermore, Longevity Power ensures that data monitoring systems are built to enable regular monitoring and reporting of generation and ESG benefits. Upon request, Longevity Power can provide ongoing client support services to ensure the installed PV systems are actively maintained and are performing in line with expectations.

The Project Timelines of Phases 2 & 3 are highly indicative at this stage. However, the key next steps, as outlined in the Conclusion, are to target the largest existing electricity consumers to evaluate their appetite for onsite solar PV generation, and to review the legal basis for the inclusion of PPA contractual terms as part of all new lease agreements.

Conclusion

Based on the detailed assessment undertaken by Longevity Power, Zweibrucken Fashion Outlet is well-positioned for the installation of solar PV. Longevity Power has determined that the allowable static loads highlighted in the technical documentation that has been shared are likely to be sufficient for the additional loads imposed by rooftop PV across the metal seam roofs. However, this is only when considering the original as-designed snow loading allowances. Via should seek to secure the opinion of a qualified structural engineer regarding the appropriateness of considering the most up-to-date snow loading calculations before signing off on the proposed designs.

The roof is over 20 years old in places but has registered no major issues to date and is unlikely to require replacement prior to installation, albeit all cases of corrosion should be treated in line with the recommendations found in the Gleeds report. Both the financial return and the projected carbon abatement associated with the installations at ZFO are good. However, additional clarity is required on the mechanisms by which Via can recharge tenants via their lease agreement for solar PV consumed across the management offices and communal areas. Taylor Wessing has usefully highlighted that Via Outlets would not be subject to trade tax implications in the event that they choose to sell power to tenants or the grid. Via Outlets therefore needs to engage with key tenants over the next 2-3 months to introduce the project and gauge potential interest. Finally, the viability of Phase 3 will ultimately hinge upon the ability of Via Outlets to negotiate key PPA contractual terms as part of the lease agreement. If these terms can be included as an addendum to the lease contract, it could allow for more efficient negotiations and more standardised terms. Via Outlets should therefore seek clarity on this point prior to the finalisation of the design to the extension, to allow for the necessary additional loads to be considered if necessary.

The immediate next steps are outlined in Table 10

#	Action	Description
1	Sign off on design	Via Outlets to receive sign off on proposed installation design and proposed additional static loads from a qualified structural engineer.
2	Legal review of Annex 7	Via Outlets to commission a legal review of Annex 7 to ensure that it has recourse to recharge tenants at the market rate for electricity consumed within the offices and common areas.
3	Treat corrosion	Via Outlets should treat all cases of corrosion across the trapezoidal roof sheets earmarked for Phase 1 installation.
4	Determine appropriate business model	Via Outlets to determine whether to pursue a landlord or a third-party ownership structure, based on CAPEX, financial returns, and operational implications for the business.
5	Engage with key tenants to introduce the onsite solar PV scheme	Via Outlets to produce a high-level indicative analysis with the potential TCO_2e and financial savings to each of the top 10 largest consumers outlined in this report.
6	Instruct competitive tender / RFP	Via Outlets to instruct a competitive tender, either for third party onsite PPA providers or installers, in order to

		ensure the highest standard of installation at the most competitive price.
7	Seek legal clarity on the inclusion of PPA contractual terms within lease agreements	Taylor Wessing has clarified that future tenants cannot be obliged to procure onsite power. However, there may be scope to include elements of the PPA contract into future tenancy contracts, to allow the standardisation of terms and to ease the administrative burden on Via Outlets.

Table 10: Next steps for Via Outlets