



# Papilio3

East Staffordshire Borough Council

The Maltings - Uttoxeter

Indicative Proposal

22<sup>th</sup> August 2023

Prepared by: Shaun Wightman-Smith

3ti Clients include:



# Executive Summary

## Papilio3

- Papilio3 is an award winning mini solar car park & EV charging hub, developed by 3ti Energy Hubs Limited in Leatherhead, Surrey.
- Each Papilio3 unit provides 12 fast EV charge points, capable of charging simultaneously at 3.5, 7, 11 or 22kW.
- Innovative 3ti technology boosts an existing site grid connection by combining solar PV & battery storage with EV charging.
- Designed & manufactured in the UK, Papilio3 is sustainably built around a recycled shipping container.
- Units can be deployed in 24 hours, without the need for detailed planning permission, significant civils works or grid connection upgrade.
- Winner, “Best New Charging Infrastructure Product” - 2022 Electric Vehicle Innovation & Excellence Awards (EVIE).
- Winner, “Innovation for EV infrastructure” - 2023 E-mobility Awards.
- Winner, “Product Innovation” - 2023 UK Renewable Energy Association Awards.

## Invitation

- 3ti would like to invite you to participate in a limited roll-out, (16 units) commercial trial of Papilio3.
- Participants already include Bentley Motors, Silverstone Circuits, Bristol Airport, Wiltshire Council & Surrey County Council.

## Commercial Proposal

- **Duration:** **Six months FoC followed by 36 months rental agreement.**
- **Reduced monthly rental:** **Standard rental £2,500 (plus VAT) - reduced to £1,800 (plus VAT) per unit for 36 months.**
- **Back Office & Service:** **8% of gross receipts by monthly account for App access (other access options available).**
- **Delivery & installation:** **Subject to surveys and confirmation of scope for civils & electrical connection works, we will cover the cost of enabling works, delivery to site, installation & commissioning of Papilio3 to a maximum of £5,000 (plus VAT) plus an additional £5,000 (plus VAT) towards substation upgrade.**

# Location

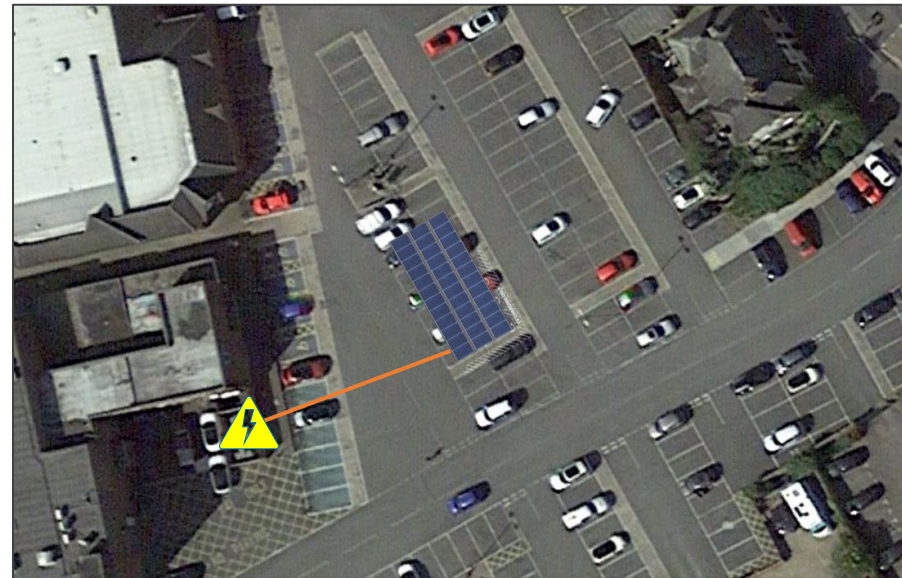
The proposed location is within the Maltings Shopping Centre car park

Minimum alterations are needed as the unit will sit upon the existing parking bay layout.

If desired, there is enough room to incorporate up to 4 XL disabled bays (2 at each end) in this design, without encroaching on existing pedestrian walkways

Substation 871096 will provide the supply and is situated close by. Approximately 20m of trenching is required for the cable connection to Papilio3

Papilio3 is situated in an unshaded area for maximum solar generation, estimated at 18MWh per year

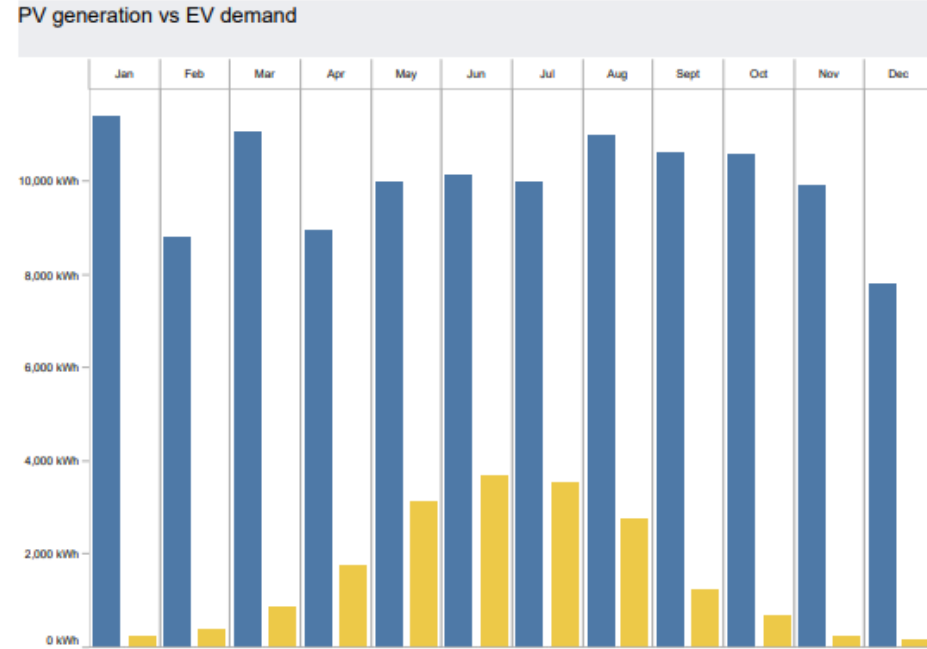


# Monthly Reporting Examples

Data is constantly gathered which allows us to report on all aspects of the installations, these are only some examples of what can be reported

- Energy monitoring, including solar generation performance Vs EV charging demand
- Total number of users including individual RFID card use and average charge consumption
- Peak time usage and duration
- Commercial forecast showing overall revenue generation

This reporting allows customers to not only account for the total electricity usage but also tailor the tariffs to maximise utilisation



Rank	RFID	Number of sessions per user
1	54c14ad5	158
2	64554bd5	143
3	a44a37d5	134
4	644f34d5	96
5	141c36d5	93
6	34c248d5	79
7	d4d842d5	76
8	842c44d5	76
9	54974ed5	74
10	c47240d5	71
11	648027d5	67
12	64da35d5	66
13	044736d5	66
14	f4f248d5	64
15	a4974ed5	64
16	041341d5	63
17	a4fb47d5	62
18	14c933d5	62
19	f4ff4ed5	54
20	248c40d5	54

Year	Month	EV demand (kWh) Sevadis	Number of Charging Sessions	Avg Session Time
2022	July	10,009	278	04:37
	August	10,987	317	04:49
	September	10,601	346	04:47
	October	10,570	366	05:08
	November	9,896	456	04:09
	December	7,799	330	05:23
2023	January	11,410	479	04:49
	February	8,800	422	04:22
	March	11,078	505	04:13
	April	8,931	368	03:54
	May	9,958	437	03:45
	June	10,121	133	02:27

# Monthly Reporting Examples

## Commercial Forecast

		EV Charging Revenue (£)	Cost of power supplied (£)	Value of Solar Generated (£)	Net (£)
2022	July	4,204	(3,203)	412	1,413
	August	4,615	(3,516)	277	1,376
	September	4,452	(3,392)	149	1,209
	October	4,439	(3,382)	92	1,149
	November	4,156	(3,167)	46	1,036
	December	3,276	(2,496)	22	802
2023	January	4,792	(3,651)	39	1,180
	February	3,696	(2,816)	58	938
	March	4,653	(3,545)	143	1,251
	April	3,751	(2,858)	221	1,114
	May	4,182	(3,187)	413	1,409
	June	4,251	(3,239)	185	1,197
<b>Grand Total</b>		<b>50,467</b>	<b>(38,451)</b>	<b>5,986</b>	<b>18,002</b>

**Assumptions:**  
 Revenue at 42p per kWh  
 Cost of power supplied at 32p per kWh  
 Solar saving at 32p per kWh  
 Net = Revenue - Cost of power supplied + Solar saving

### Session start times in April

Weekday	6	7	8	9	10	11	12	13	14	15	16	17	18	22
Monday	2	15	14	10	3	3	7	7	6	2	1	2		
Tuesday	4	23	19	6	2	1	10	8	6	1	1	1		1
Wednesday	3	15	22	9	5	1	7	9	2	2	1		1	
Thursday	6	14	25	6		4	6	5	1	1	4		1	
Friday	2	10	15	6	1	1	7	6	2	1	1	3		
Saturday							1		1			2		
Sunday					1		1		2					

# Technical Specification



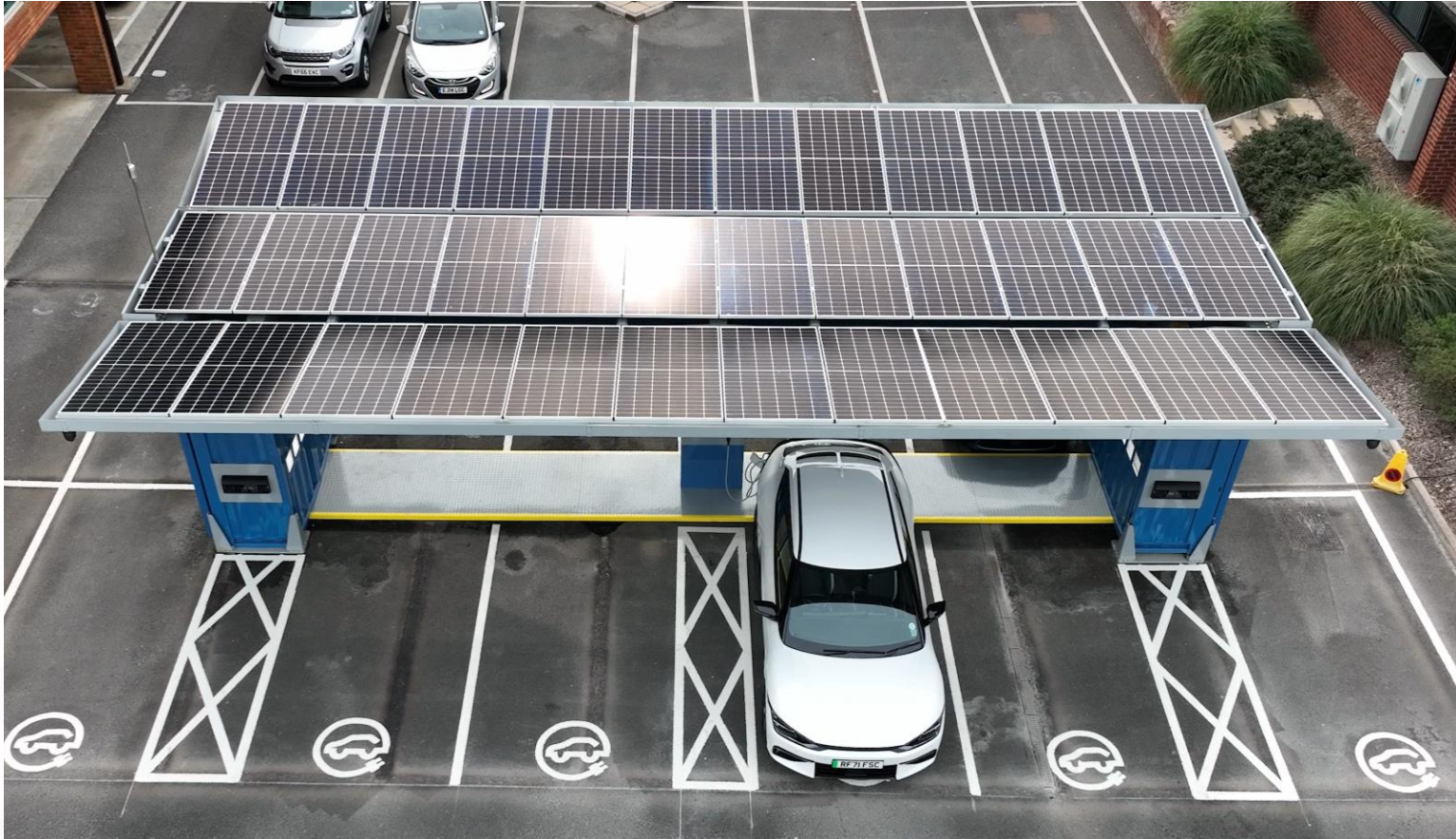
**Papilio3**

Installed DC power (kWp)	19.32
System yield (kWh/kWp/yr)	900
Annual energy production (kWh)	17,214
tCO <sub>2</sub> e saving (1yr)	3.3
Equivalent road miles (1yr)	63,000
Equivalent trees planted (1yr)	53
Deployment Time	24 hours

Generation figures based in central UK



# “Papilio3” – Pop-Up, Mini Solar Car Park & EV Charge Point Hub



## Papilio3



42 solar panels



12 EV charge points



Up to 250 kWh battery



Existing grid power



Recycled container

# “Papilio3” – Designed for Workplace & Destination Car Parks



1 day to install



Avoid peak time energy use



Blend local solar & low carbon grid energy



Avoid expensive infrastructure upgrades



Boost & optimise existing grid connection





The Solar Car Park Company

FOR FURTHER INFORMATION  
PLEASE CONTACT

---



[shaun.wightman-smith@3ti.co.uk](mailto:shaun.wightman-smith@3ti.co.uk)



+44 (0) 7876 343 388



+44 (0) 1372 365 833



[3ti.co.uk](http://3ti.co.uk)