Affordable and portable Docked E-Bike Sharing with charging station

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Introduction

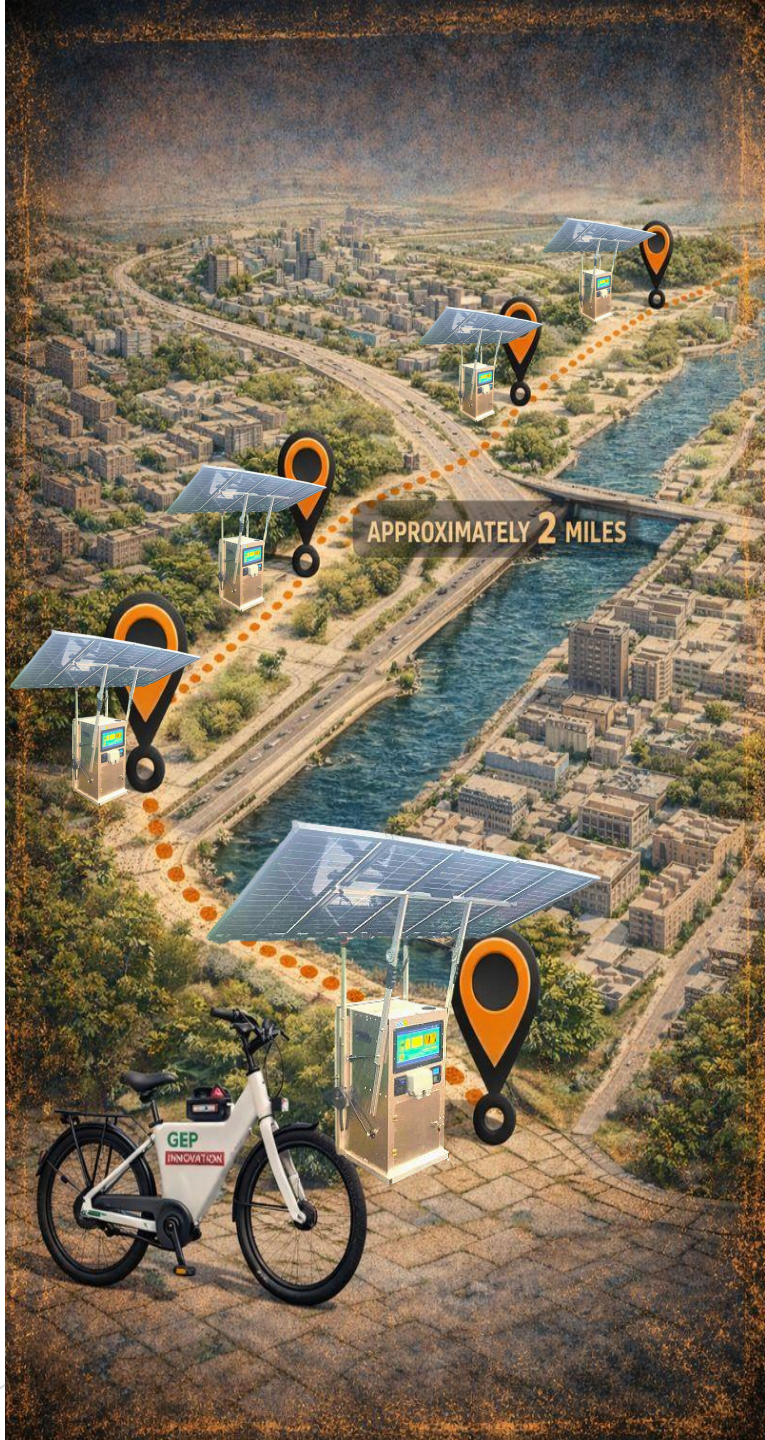
- Urban micromobility today is dominated by free-floating e-bike models that are expensive to operate, difficult to regulate, and costly for councils.
- Existing operators like Lime rely on large batteries, long ranges, constant vehicle collection and redistribution, driving high operational costs.
- We introduce a simple, docked e-bike system designed specifically for short, urban trips. By limiting range, reducing battery size, and enforcing station-based charging, costs and operational complexity are dramatically reduced.

The Problem

- **Shared e-bikes are expensive**
  Short urban trips routinely cost £4–£10, making daily use unattractive for most users.(Price is the same as bus trip)
- **Per-minute pricing discourages usage**
  Time-based billing creates anxiety, pushing riders to rush rather than ride comfortably or frequently.
- **Street clutter creates public and council backlash**
  Free-floating bikes block pavements, generate complaints, and increasingly face regulatory resistance.
- **High operating costs make the model fragile**
  Large batteries, manual collection, and rebalancing vans drive high OPEX and poor unit economics.

Our Solution

- **Docked e-bike system**
  Bikes are returned to fixed stations, ensuring order, availability, and full operational control.
- **£3 flat per day**
  Simple, predictable pricing removes time pressure and makes daily use affordable.
- **Automatic charging via GEP Nest 600**
  Each bike docks directly into the **GEP Nest 600 charging station**, enabling automatic, secure, and unattended charging.
- **Stations every ~2 miles**
  GEP Nest 600 units are distributed at regular intervals, ensuring users are always within range and bikes naturally return for charging.
- **No street clutter, no vans**
  Docked charging removes pavement obstruction and eliminates the need for collection and rebalancing vehicles.



Product Overview

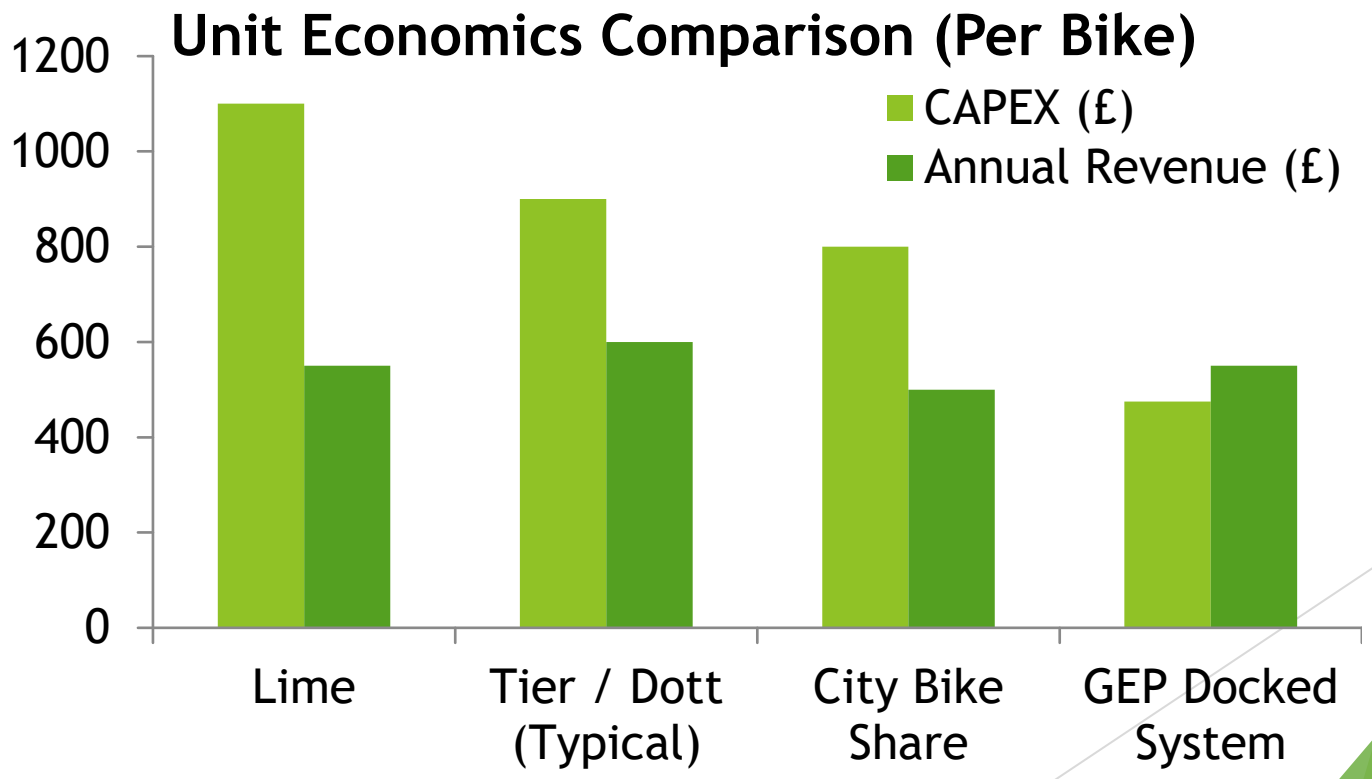
- **Bike**
  - 250W motor (UK-legal, 15.5 mph limit)
  - ~5-mile range, optimised for short urban trips
  - Low resale and theft value by design
  - **Removable 21V / 5Ah compact battery**
- **Battery System**
  - **21V, 5Ah (~105 Wh) modular battery**
  - Drill-battery form factor for low cost and easy replacement
  - Fast charging and simple swap capability
  - Reduced fire risk compared to large integrated packs
- **Stations (GEP Nest 600)**
  - Physical dock with automatic charging
  - Secure bike locking and unattended charging
  - Deployed at ~4-mile intervals across the network

Pricing Logic

- **£3 per 24 hours**
  A flat daily rate removes per-minute anxiety and encourages frequent short trips.
- **Unlimited days, no penalties**
  Users may keep the bike for multiple days and simply pay £3 per day.
- **Pay only when returned to a station**
  Rental ends automatically when the bike is docked and charging begins — no manual checkout.
- **£40 deposit at the starting rental point and will return**
  A delayed return becomes an asset-protection event, not a punishment like EV charging stations.
- **Why this works**
  Low battery cost + docked charging = low operating cost, enabling sustainable low pricing.

Unit Economics

- • CAPEX per bike: £400–£550
- • Annual revenue: £450–£650
- • Payback: 6–9 months
- • Lifetime: 3–4 years



E-Bike Sharing Price & Cost Comparison

Metric	Lime	Typical E-Bike Share	GEP Docked System
Unlock fee	£1	£0–£2	£0
Usage price	£0.25–£0.31 / min	£0.20–£0.35 / min	£2 / day
15–20 min trip	£4–£6	£4–£7	£2
2–3 trips/day	£6–£10	£6–£12	£2
5 days usage	£25–£40+	£30–£50	£10
Battery size	500–700 Wh	400–700 Wh	~120 Wh
Bike CAPEX	£900–£1,200	£700–£1,000	£350–£550

ROI Comparison

- **Lime / Free-Floating E-Bike Models**
  - High CAPEX (large batteries, complex bikes)
  - High OPEX (collection vans, charging labour, rebalancing)
  - Revenue depends on per-minute usage
  - **Typical payback: 12–24 months**
- **Our System (GEP Docked Model)**
  - Low CAPEX (small 21V/5Ah battery, simple bike design)
  - Low OPEX (no vans, no manual charging)
  - Flat daily pricing drives predictable utilisation
  - **Typical payback: 6–9 months**

Target Markets

- • Universities
- • New developments
- • Business parks
- • Tourist towns
- • Secondary cities

Go-To-Market

- Phase 1: Pilot (50–100 bikes)
- Phase 2: Replication
- Phase 3: Scale