



Kaluza Flex

OpenADR London

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Hello

Steve Day
Technical Lead @ Kaluza Flex

steve.day@kaluza.com
<https://www.linkedin.com/in/steve-day-uk>



What am I going to talk about?

- Who we are
- What we do
- How we build it
- The general challenges we face
- Two case studies and their specific challenges:
 - Charge Anytime
 - V2X & Inflexion



Who we are




Born out of OVO
Energy in 2019



500 staff across 5
offices
internationally



6.7m meters
licensed



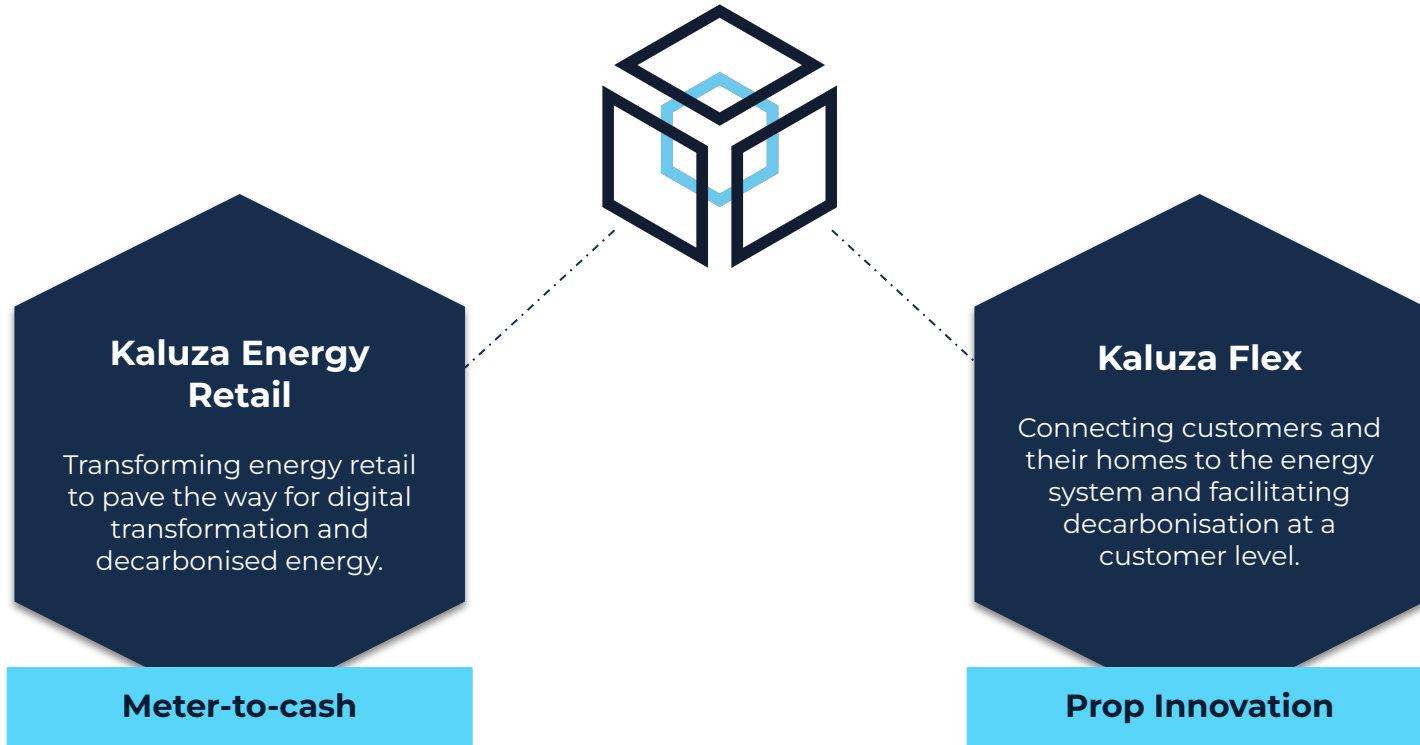
>12,000 smart devices
connected



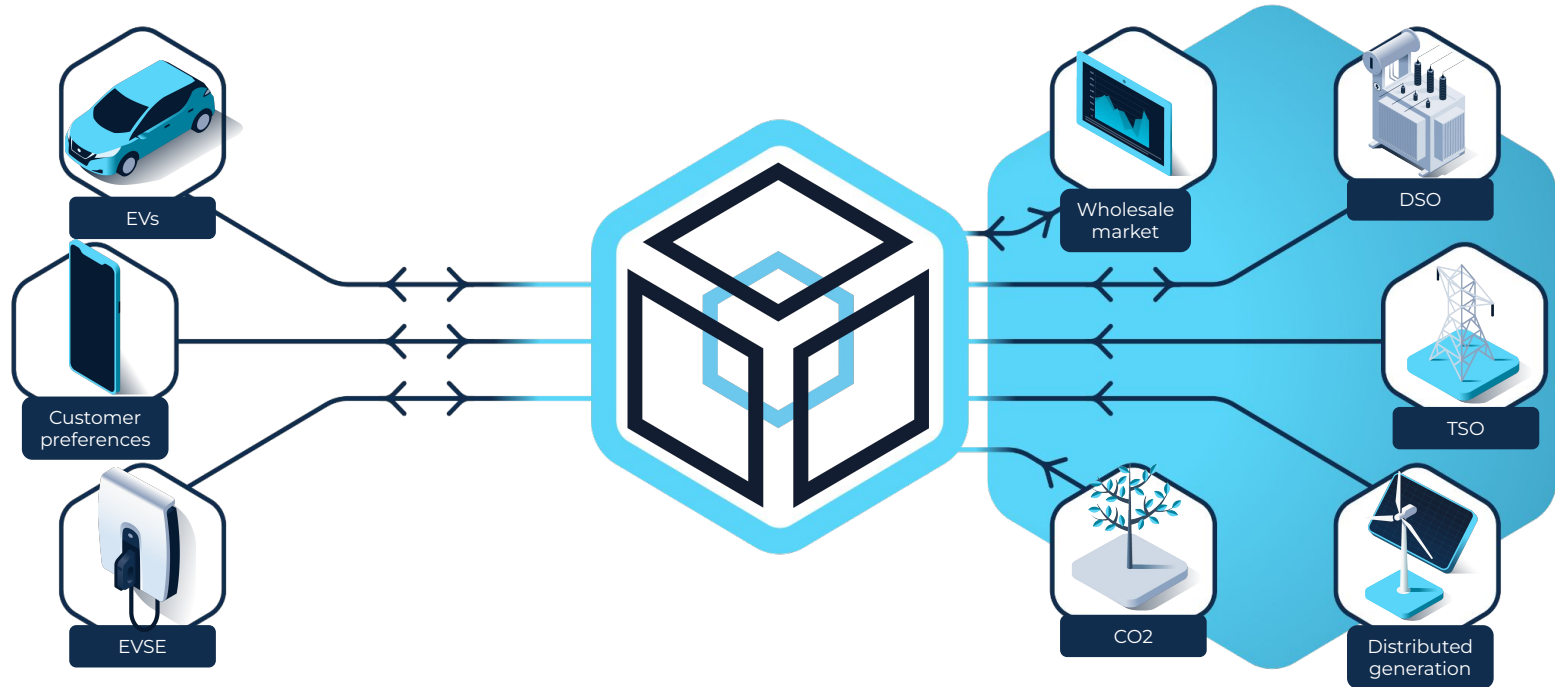
Products live in 5
countries



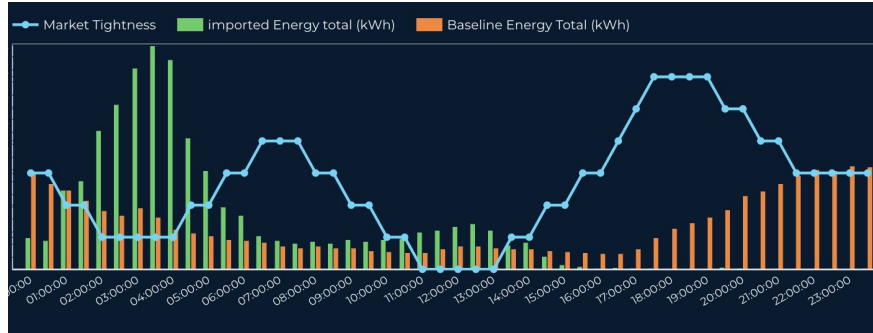
Cloud-native platform powering the future of energy



We unlock the benefits of flexibility



What do we mean by smart charging?



Price can be defined in multiple ways:

- Wholesale energy cost (to supplier)
- Tariff energy cost (to the customer)
- Carbon intensity

Value created by shifting **charging in high priced periods** to charging in **low priced periods**.

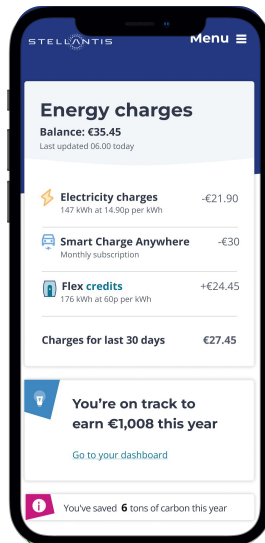


How do we offer this?

1. API integration

```
1 {
2   "data": {
3     "device": {
4       "virtualDeviceId": "0af21e06-0e9e-4b34-9
5       "energyConsumption": {
6         "from": "2021-07-01T00:00:00Z",
7         "to": "2021-07-31T12:39:00Z",
8         "periods": [
9           {
10            "periodStart": "2021-07-04T02:30:00Z",
11            "periodEnd": "2021-07-04T03:00:00Z",
12            "deviceImportedWh": 0
13          },
14          {
15            "periodStart": "2021-07-06T15:30:00Z",
16            "periodEnd": "2021-07-06T16:00:00Z",
17            "deviceImportedWh": 0
18          },
19          {
20            "periodStart": "2021-07-06T16:00:00Z",
21            "periodEnd": "2021-07-06T16:30:00Z",
22            "deviceImportedWh": 0
23          }
24        ]
25      }
26    }
27  }
```

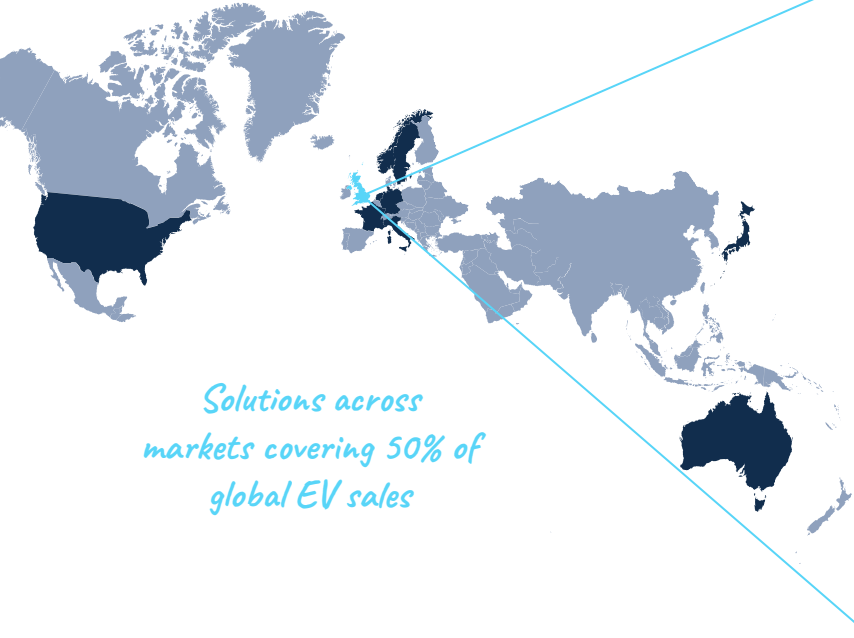
2. White label app



3. Partner app



Aggregation and optimisation behind the scenes



Solutions across markets covering 50% of global EV sales



Monitor operations and performance



Challenges

Trust

Balancing who gets the value

Reliability



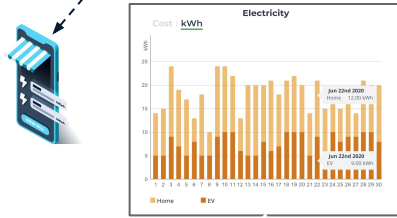
Charge Anytime



Type of use tariff

A new, lower tariff specifically for charging your EV

How it works



Home rate



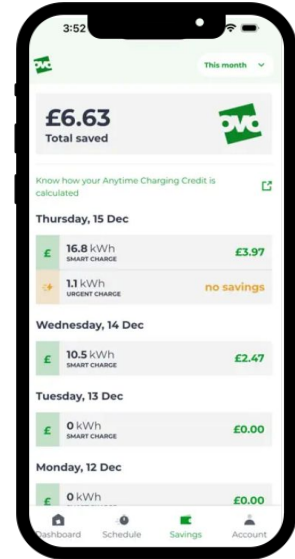
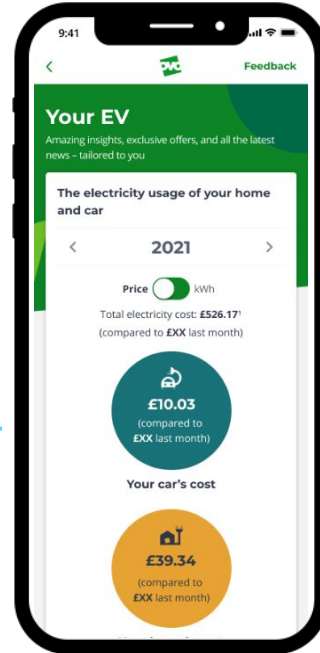
Low, flat EV rate
(competitive off-peak)*

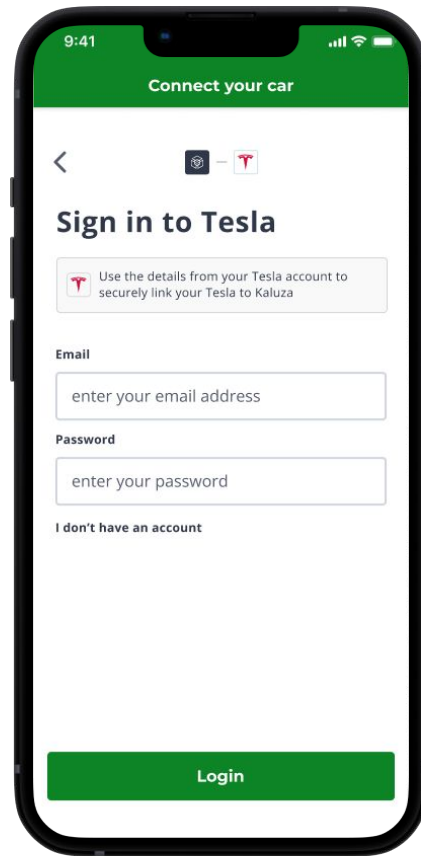
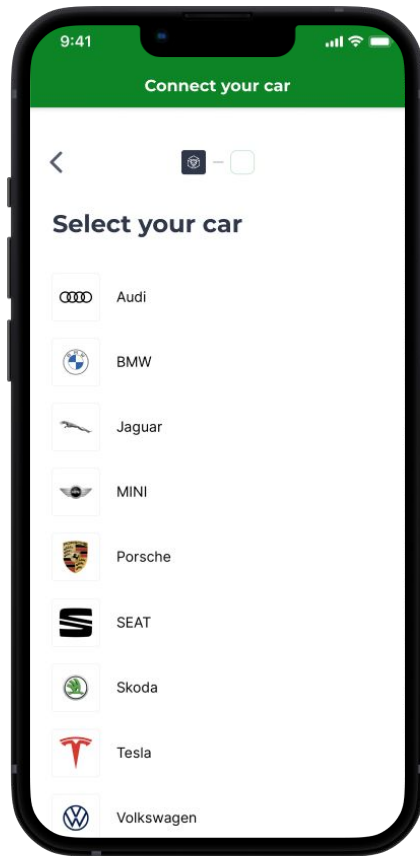
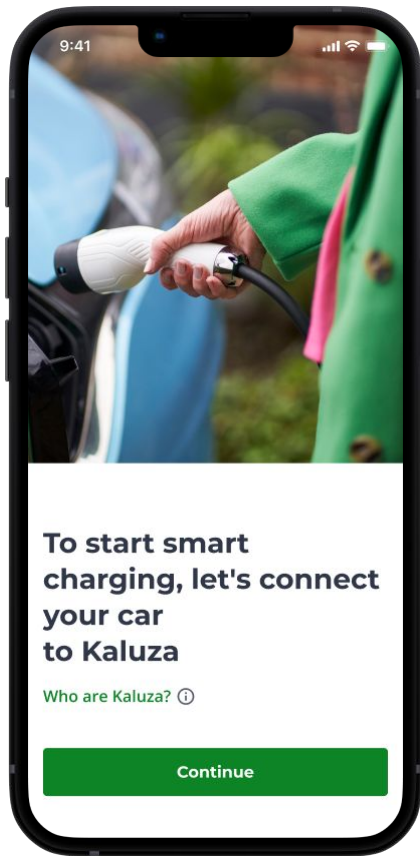
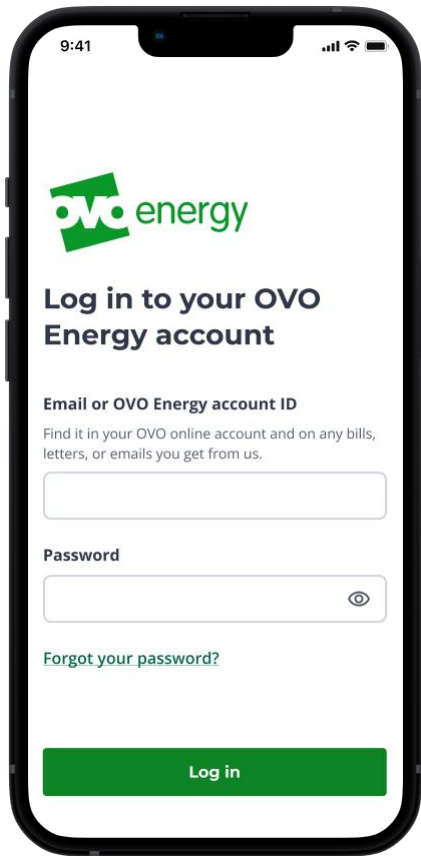


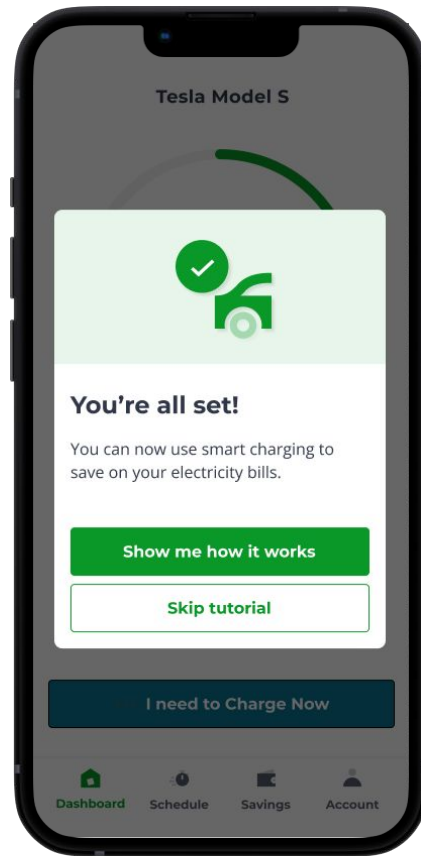
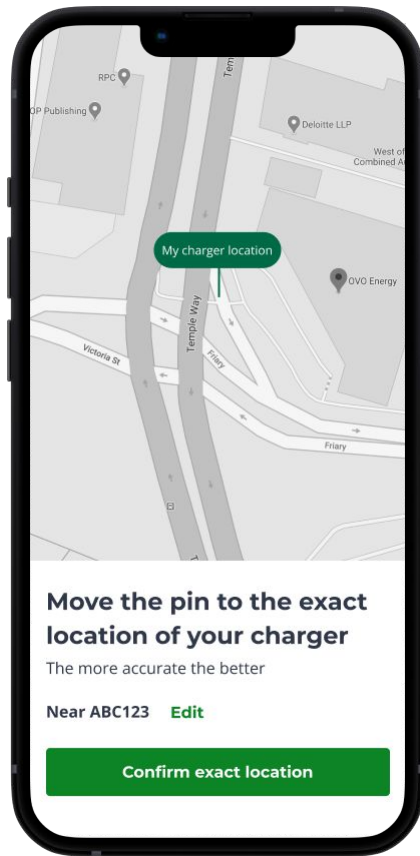
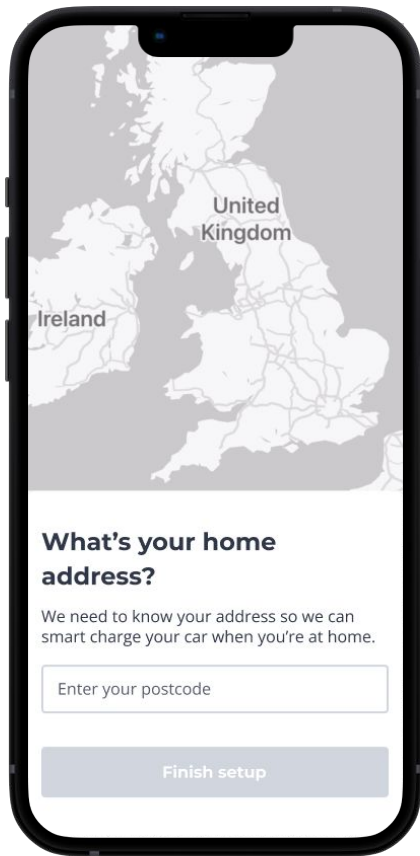
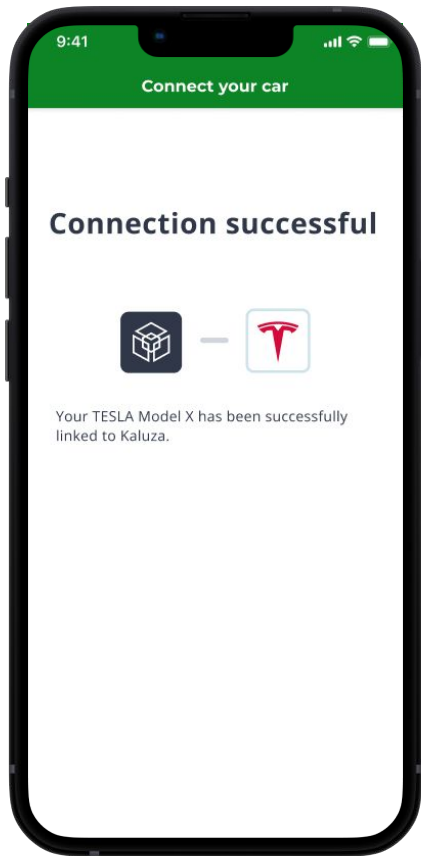
Implemented as
monthly credits by
supplier

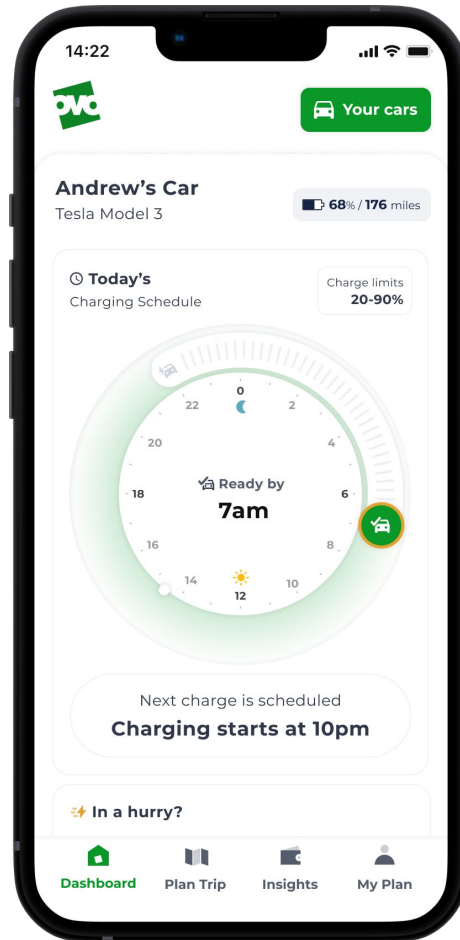
How this looks to the customer

*E.g. €0.10 * 100kWh = €10 / month cost to charge*









OVO Charge Anytime

Exclusive Offer

Recently acquired an EV? You are a good candidate for this program.

Save more than 70% on home charging

- Pay just 10p whenever you smart charge at home
- Never overpay for 'urgent' charging

[Get Anytime >](#)



Get started on your journey

Challenges

Resilience and reliability

The long tail of device integration

Reducing onboarding friction

Improving customer understanding



V2X and Inflexion



History recap

Next generation
of V2X scaling



World's largest residential
V2X pilot

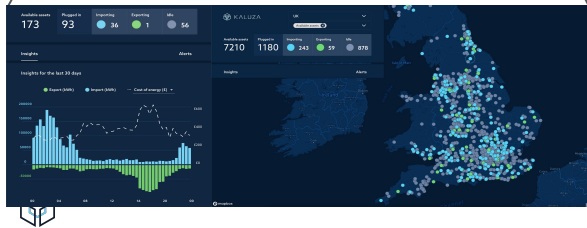


The leading residential V2X solution

The world's first and largest
V2X program

350

V2G devices
installed and
Kaluzia integrated

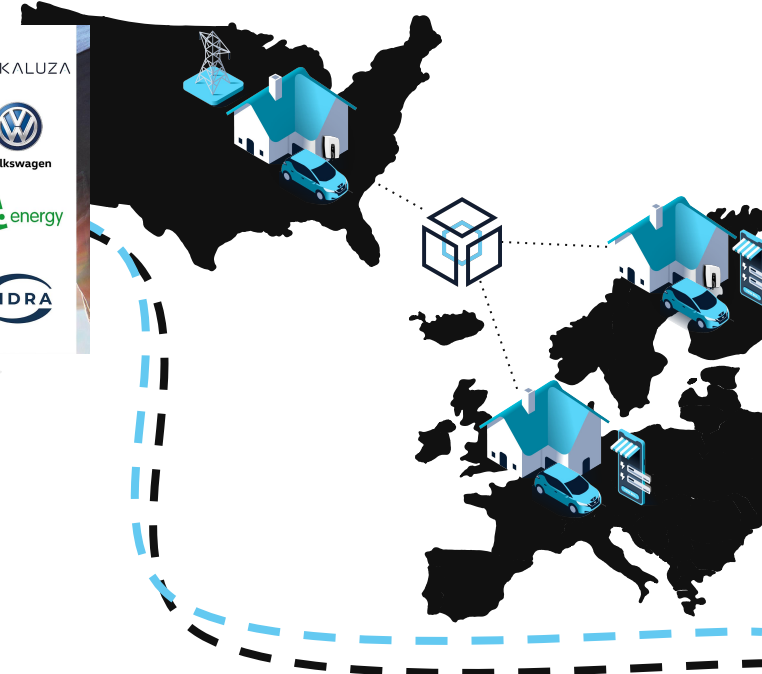


First real-world use of V2X using CCS to
deliver rewarding customer propositions



Engaged EV drivers

Bringing V2X to ESPs around the globe



INFLEXION



Volkswagen



The INFLEXION Project, part of the V2X Innovation Programme, is funded by the Department for Energy Security & Net Zero (DESNZ), delivered by Innovate-UK

Deal with these barriers

Any V2X prop needs to address these concerns if its to take off 🚀

Solve this

Home charge set up comes **late in the purchase journey** 🧑🏻🔧

Research fatigue after spending lots of effort understanding the car 😬

Smart charging and EV tariff **penetration is low** 😬

Mitigate this

Money at point of purchase is valued more than potential savings in EV lifetime

EV drivers already have chargers installed

ROI is measured within lifecycle of car, ~3 years for a PCP

Anxiety over control of battery persist



V2X Value Simulation

Overview of Modelling Approach



Simulate house + EV energy behaviour



Optimised V2X control/decisions or baseline control simulated



System component states updated at 30 min resolution for the year period



Calculate net energy transfers from house/charger to grid



Evaluate total costs and value

From value potential calculations based on **over 1000 scenarios** simulated for a year: somewhere between **£300 and £1000 of value available.**



Challenges

What proposition works best for retailers *and* customers?

What will the successful devices look like: AC or DC, CHAdeMo or CCS

How do you bring the whole home together



**Thank
you**

