

# V2G Project Sciurus overview for CHAdemo

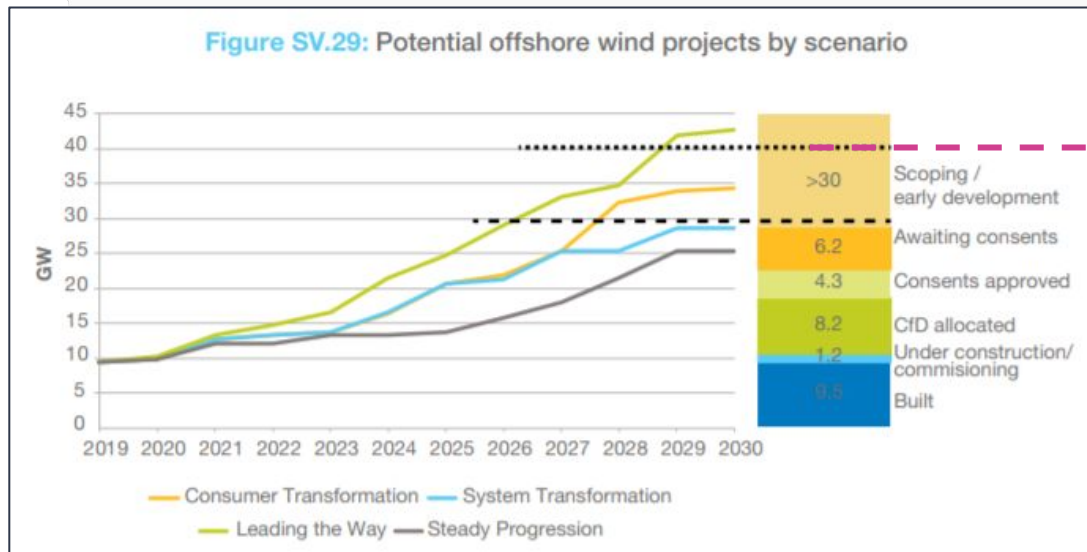
Alfie Ireland  
OVO Energy



# OVO'S JOURNEY



# V2G will become widespread within this decade



- Domestic V2G could save the UK energy system £3.5bn per year
- Ultimate customer asset - mobility and energy

# Project Sciurus in brief

## Project Partners



KALUZA  
AN BT COMPANY



## Project Funding



**Innovate UK**

*OVO was the lead partner in a 36 month real world demonstrator to develop and deploy 300 V2G chargers in OVO customer homes.*

## Key Achievements:

- ✓ Bespoke V2G hardware developed and manufactured
- ✓ User & installer apps developed
- ✓ Bespoke V2G tariff proposition launched
- ✓ Onboarded >330 customers
- ✓ Analysed half hourly data from charger fleet over > 12 months
- ✓ Insights collected from V2G customers

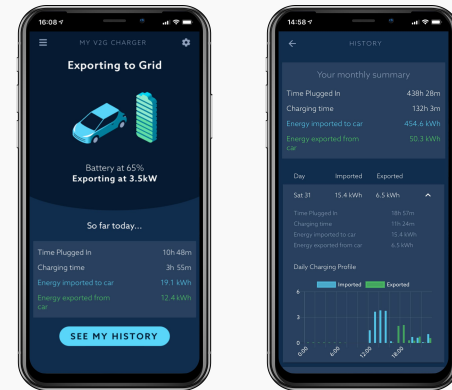
# OUR V2G OFFERING



**WORLD'S FIRST DOMESTIC  
V2G DEVICE**



**THE CUSTOMER PROPOSITION**



**CUSTOMER APP**

## INTELLIGENT ENERGY PLATFORM



# OVO V2G project in numbers

**£420**

Average customer  
saving per year

**50%**

Proportion of fleet exporting  
during Supply Margin Notice  
event, 6th Jan 2021

**900  
MWh**

Total energy exported  
to the grid

**4 million**

Free miles driven by  
V2G customers

# SUMMARY OF KEY CHALLENGES



Challenge

Hardware cost £15k+  
(and was oversized)



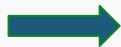
*Solution*

Building the OVO/Indra V2G charger in-house and at scale led to significant cost-down in the tech and a huge reduction in unit size



Challenge

Finding a commercial  
model that works for  
everyone (solar / not)



OVO's proposition ensures customers are fairly compensated for their V2G activity; some customers make up to £800/year



Challenge

Back-and-forth often  
required with DNO at  
install



DNO's are now much more familiar with V2G, e.g. a single form for all EVSE installs including V2G is to be released by UKPN



Challenge

User recruitment from  
small pool of LEAF  
drivers challenging



Collaboration with Nissan marketing team unblocked lead funnel, but number of compatible vehicles is a constraint

# What was it like to be an OVO V2G customer?

- ✓ Paid 30p/kWh for exports from smart meter
- ✓ Solar customers had different proposition



↓ 📷 🕒 ⋮ 🔊 📶 93% 🔋 21:21

## < Charges for June 2019 >

### ⚡ Electricity

Consumption charge	£91.02
663 kWh at 13.72p	
Standing charge	£8.22
30 days at 27.40p a day	

### 💧 Gas

Consumption charge	£4.27
139 kWh at 3.08p	
Standing charge	£8.22
30 days at 27.40p a day	

Standing charge	£8.22
30 days at 27.40p a day	

### 🌱 Upgrades

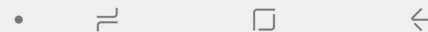
POLAR plus	<del>£7.85</del> £0.00
Green Electricity	<del>£5.00</del> £0.00

OVO Interest Reward	-£0.72
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VAT	£5.55
5% of £111.01	

Vehicle-to-Grid Export Credit	-£115.77
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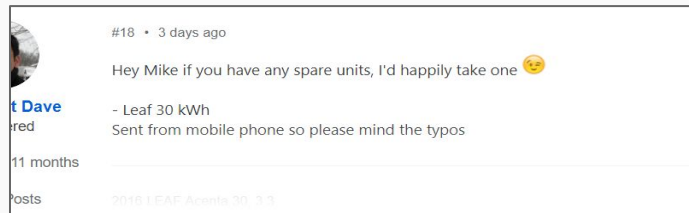
Total charges for June 2019	£0.79
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# Customer recruitment was helped by hype on social media

Healthy customer demand for V2G units on facebook groups & forums

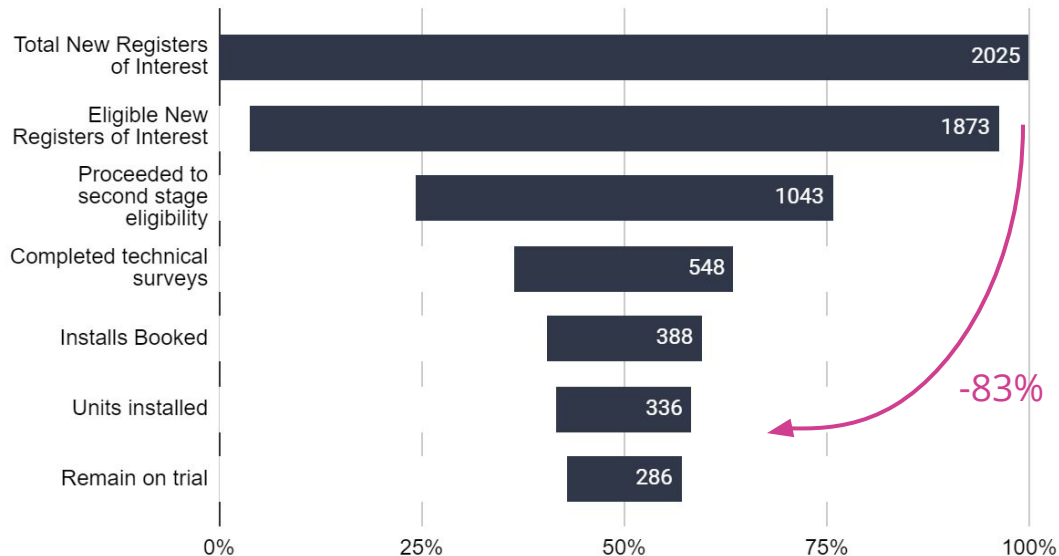


# ... but the journey to a V2G install is complex

One in six leads made it through to install

The main reasons for customers leaving the trial were Change of Tenancy and getting new EVs (30%) not compatible with V2G (28%)

OVO V2G Project Customer Funnel



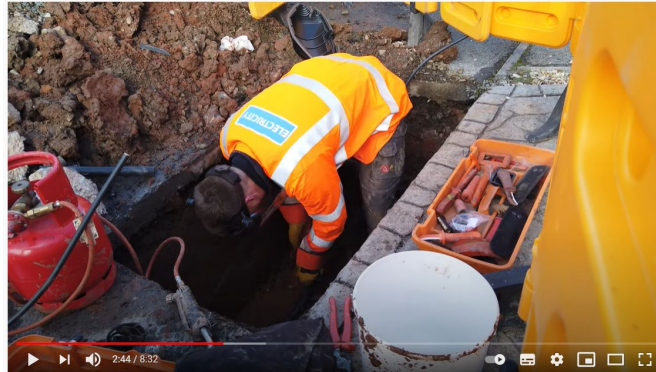
# Example install and recruitment challenges



Some DNOs charged  
£300-400 for design  
for G99, ruling out  
solar V2G installs in  
those areas



Looped supplies  
had to be unlooped  
before V2G installs



Earthing  
requirements

# Key learnings from Project Sciurus

# Customers were highly engaged with the technology

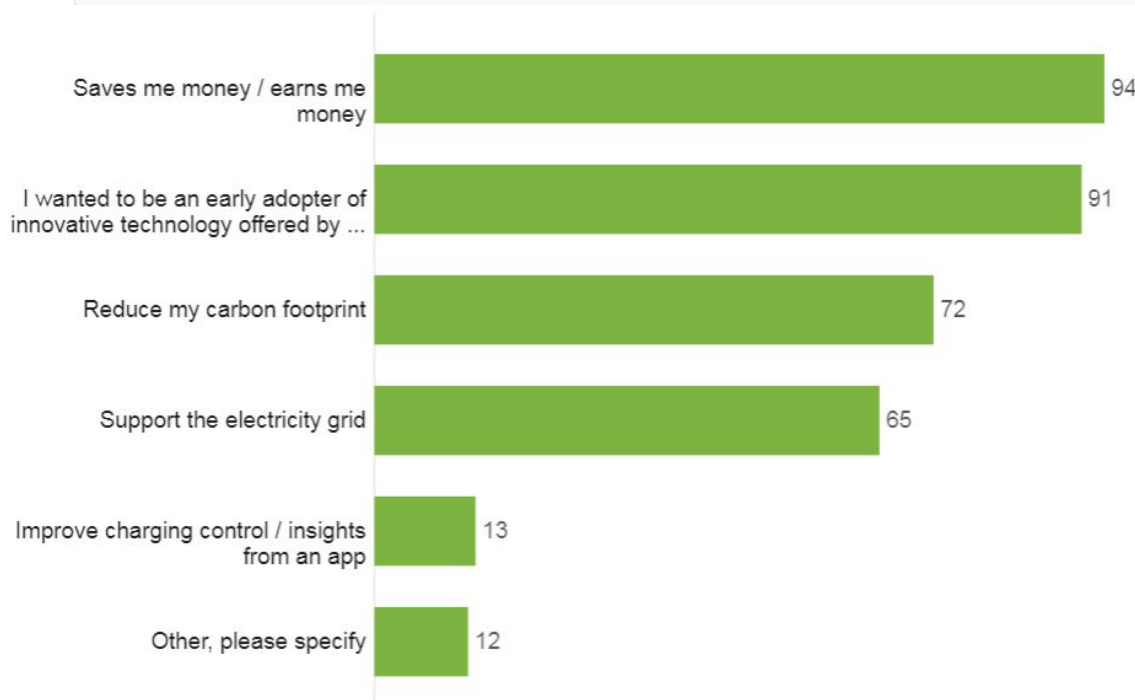
- ✓ Most customers called customer support during the project -  $\frac{1}{3}$  of these were for issues around install
- ✓ ...but sometimes, customers just had questions and feedback

A	B	C	D	E	F	G	H
			Price	% House Consumption	% EV Consumption		Cost of Home Energy
	Octopus Go	Onpeak	£0.14	90%	20%		£528.12
		Offpeak	£0.05	10%	80%		
		Standing Charge	£73.24				
	Bulb (Region C	Onpeak	0.13587	100%	100%		£536.66
		Standing Charge	£74.60				
			£0.204				
	OVO V2G NEW	Onpeak	£0.18	100%	100%		£722.06
		Standing Charge	£105.08				
		V2G Export Rate	£0.20				

Many customers made their own spreadsheets to keep track of their savings!

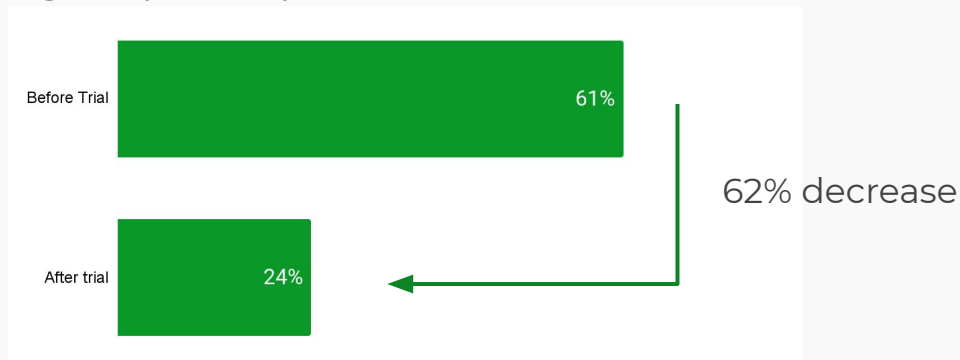
# Savings and tech are key reasons for adopting V2G

*What were your main motivations for joining the V2G trial?  
Pick top 3. (N = 119)*

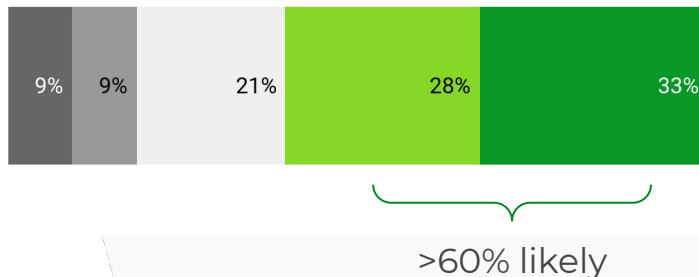


# Customer's concerns about V2G have reduced through the trial

*Before trial, what concerns did you have about getting the V2G charger? (N = 119)*

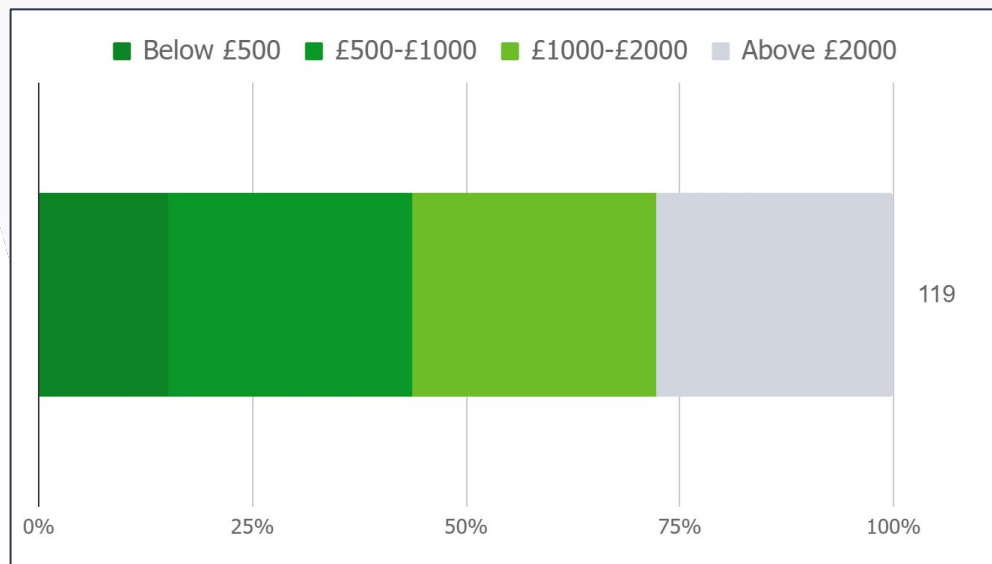


*How likely is it that your next EV purchase will be a Nissan EV?*



# Hardware cost will be a key factor in customer's decisions to adopt V2G

- $\frac{3}{4}$  of V2G customers expect the cost to be < £2k
- On-board AC V2G could mitigate this





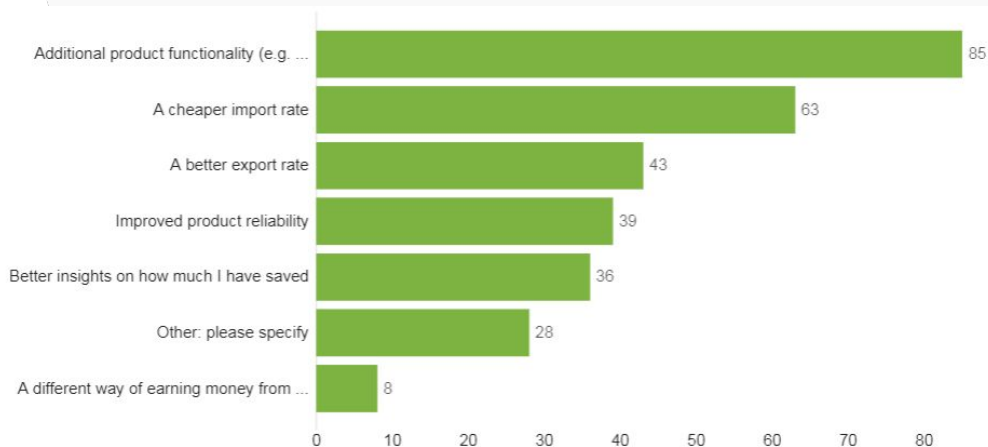
# Customer satisfaction is high, but there is headroom for the tech to improve

Customers want the product to do more for them, e.g. optimise for solar or 'black start'

**93%**

% of V2G customers satisfied with their charger

*What are the main ways V2G could be improved for you?*



# SUMMARY OF KEY LEARNINGS

1

V2G is feasible and technically viable at scale, and can provide valuable services to the grid

2

V2G enables energy suppliers to offer more engaging propositions for their customers

3

There is a keen audience of early adopters, but more development needed to bring V2G to the mass market

4

Hardware costs have to halve before customers will be willing to pay

5

Customers concerns about battery degradation are alleviated by using the technology

# What's next for V2G at OVO?



**THANK YOU FOR  
LISTENING**