

Interreg North Sea Region

European Regional Development Fund



EUROPEAN UNION



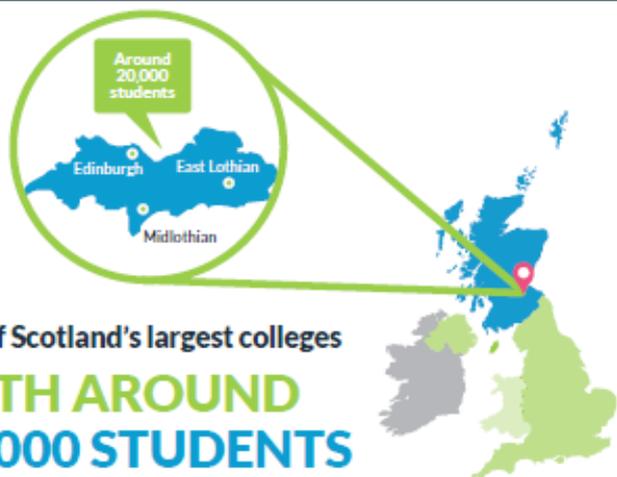


Diving into electric pool cars: a real-world experience

Bob Murphy
Edinburgh College

- Edinburgh College introduction
- eCar Project initiation
- Evolution
- Results
- Road ahead

Key facts



Working with more than
1,000 INDUSTRY PARTNERS
to provide you with the best possible opportunities for employment 

99%
of our successful full-time students move on to employment or further study
WITHIN SIX MONTHS OF GRADUATING


49%
of our student population are female 

51%
of our student population are male 

Scottish and UK NUS
AWARD-WINNING STUDENTS' ASSOCIATION 

MORE THAN 700 vocational and academic courses from entry level to degree programmes 

Clear progression routes to
UNIVERSITY OR EMPLOYMENT

Edinburgh College is
THE BIGGEST SINGLE PROVIDER
of students to Edinburgh universities

Our students come from
115 COUNTRIES, from Afghanistan to Zambia 



GRANTON

350 West Granton Rd
Edinburgh
EH5 1QE

MIDLOTHIAN

46 Dalhousie Road
Dalkeith
EH22 3FR



MILTON ROAD

24 Milton Road East
Edinburgh
EH15 2PP

SIGHTHILL

Bankhead Avenue
Edinburgh
EH11 4DE



Initiation



For the future you want

- eCar Project began in August 2011 at Jewel & Esk College.
- Primary aim was to evaluate electric vehicles from a real-life users' perspective, against a background of changing urban mobility and environmental pressures.
- Usage was monitored over one year and findings presented to the public at a conference organised by The Scotsman newspaper.

For the future you want

Initiation





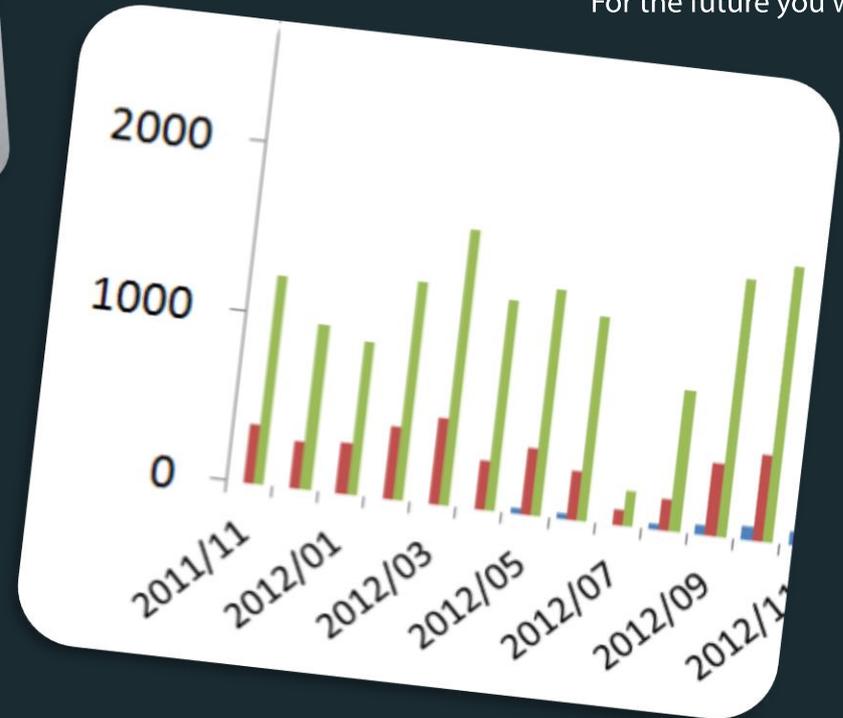
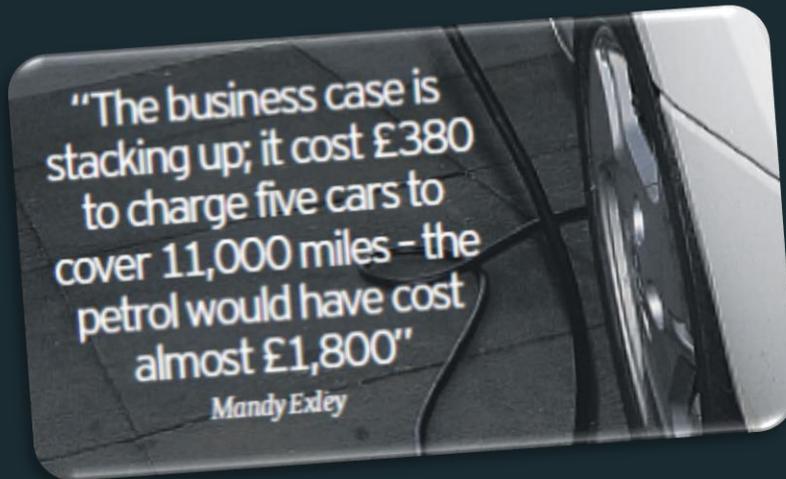
e-Car Project



- Trial demonstrated significant cost savings with positive environmental impacts, and offered a viable, sustainable, alternative transport option.
- As a sector-leading initiative it has helped shape public opinion, inform legislation, and has been influential in furthering the uptake of EV's across Scotland.
- The project has been highlighted as a case study in Transport Scotland's 'Switched On Scotland' Roadmap to the Widespread Adoption of Electric Vehicles and we continue to be an active participant in the E-cosse Forums, plus a partner in the 'Switched On @ Work' scheme.

For the future you want

For the future you want



- User engagement positive after initial reluctance.
- Over 13,000 trouble free miles travelled by end of 12 months.
- Increasing use. Booking system created.



For the future you want



For the future you want

Evolution



For the future you want

- When Edinburgh College created in 2012, it was clear that a shared pool car fleet would be needed for intra-campus travel.
- Further support funding from SEStran, Transport Scotland, Midlothian Council, and other partners, facilitated the expansion. A fully-electric fleet was chosen.
- Through the 'Plugged in Places' scheme additional charge points were installed and made available to the general public.
- Additional financial input from local car dealerships Phoenix Mitsubishi and AF Noble Nissan (Loanhead), allowed the creation of scholarships.
- Vehicles, infrastructure and data continue to be utilised by the curriculum in support of student learning.

For the future you want

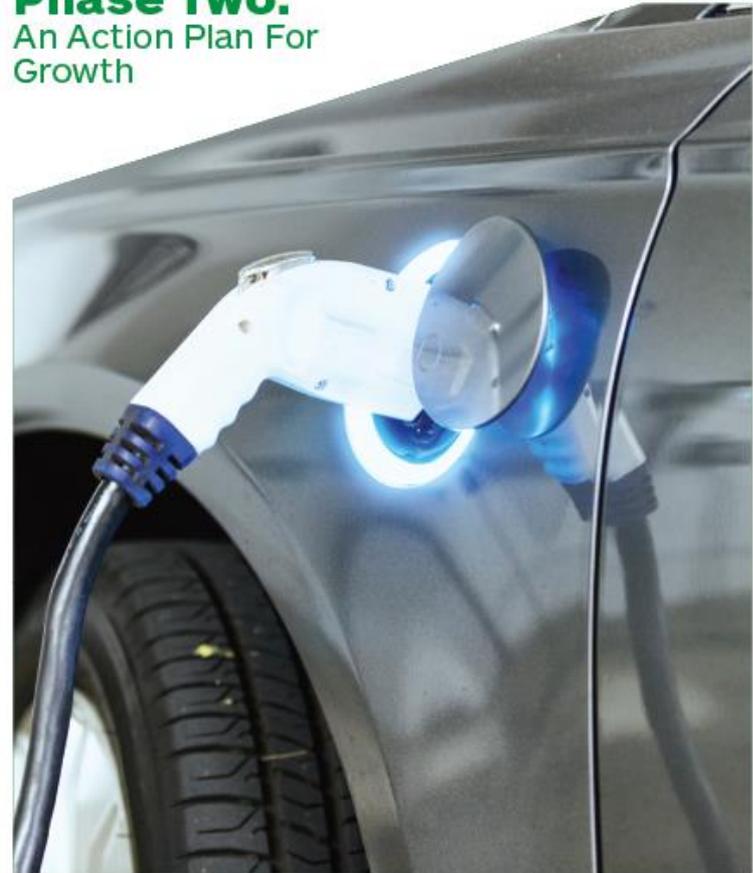
Switched On Scotland:
A Roadmap to Widespread
Adoption of Plug-in Vehicles



transport.gov.scot



**Switched On Scotland
Phase Two:**
An Action Plan For
Growth



For the future you want

Evolution

- Fleet expansion (more electric cars & vans)
- Increased charging infrastructure provision
- Public engagement (STEM, Greenfleet etc.)
- Student participation
- Further working with Scottish Government



Electric Vehicle Information Morning

Edinburgh College

19 March 2016
9am-12pm
Gifford Village Hall

Join Edinburgh College's Engineering team to discover how green technology could benefit you and meet our fleet of electric vehicles.

- Presentation at 10am
- Q&A session
- Test drive our e-cars

ecar@edinburghcollege.ac.uk

#Makeithappen

EdinburghCollege edcoll

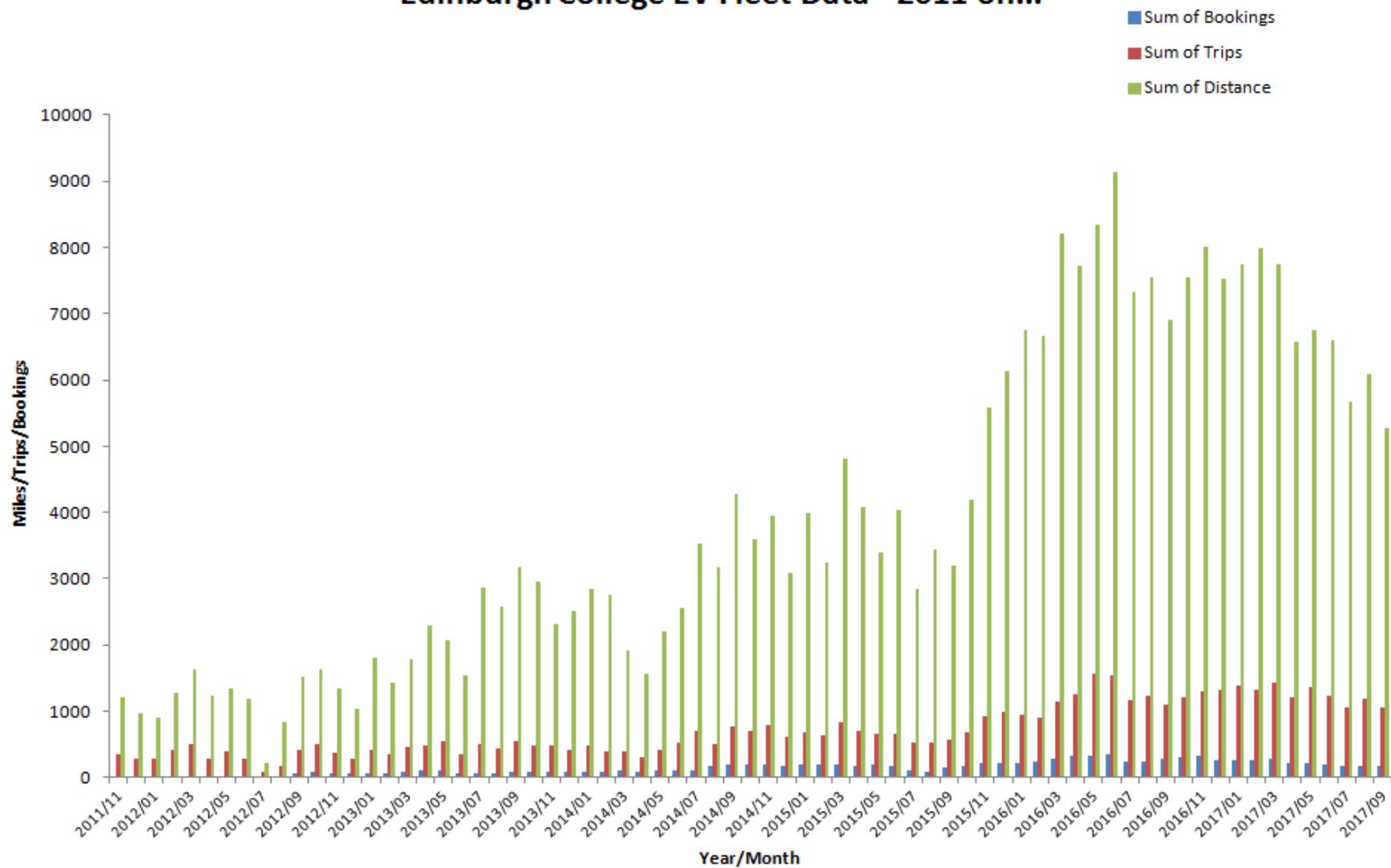
A white Nissan Leaf electric car with the Edinburgh College logo and slogan "Creating opportunities for..." on the side.

For the future you want



For the future you want

Edinburgh College EV Fleet Data - 2011 on...



Results

Data to October 2017



For the future you want

- Current vehicles in fleet
15
- Total Distance Travelled
280,000+ miles
- Total Trips
51,000+
- Total Bookings
10,000+
- Registered Users
600+
- Avg. Trip Distance
5.48 miles
- Avg. Monthly Distance
7,000+ miles (last 2 yrs)
- Saving on 'Grey Fleet' mileage claims
£126,000+ total (at 45p per mile)
- CO₂ emissions saving
60+ tonnes
- Total Electricity Used since 2012
103,000+ kWh
- Charging Sessions Logged
15,000
- Charge Points
28 (inc. a Rapid Charger)
- Vehicle Types
10 cars
4 vans
1 minibus

For the future you want

Results

Petrol Vehicles
v. Electric Vehicles



- If the College had stayed with shared ICE pool cars, let's compare the costs. Assuming a fleet of 10, and using the monthly average of 7,000 miles travelled...

10 Petrol Vehicles

- Yearly Road Tax
£1,300
- Fuel Costs*
£1,022 per month
£12,264 per year
- Emissions (Tailpipe)**
1.53 tonnes CO₂ per month
18.36 tonnes CO₂ per year

10 Electric Vehicles

- Yearly Road Tax
nil
- Fuel Costs***
£102 per month
£1,232 per year
- Emissions****
4.8 tonnes CO₂ per year from power generation

* Based on average monthly distance, a 37mpg car, and unleaded at 119.00 pence per litre average.

** 136g/km CO₂ emissions for 1.6 Ford Focus. Figure calculated on average monthly mileage for 10 cars.

*** Assuming 90 miles per full charge (22 kWh), gives 1711 kWh used per month for 7,000 miles. Cost calculated using 'Day' rate for electricity (£0.06/kWh).

**** Estimated 235 gCO₂e/kWh Scottish Grid Carbon Intensity (2013)

Road ahead...

- Increased utilisation
- Integrated booking and tracking system
- SMART charging
- Additional infrastructure
- More electric vehicles (larger vans for example)
- Edinburgh Council EV Action Plan
- Low Emissions Zones



Additional benefits...



For the future you want

- Charge posts facilitate car-club use
- Enterprise Car Club present at three of the four campus sites
- Increased staff take up of EV's
- Commercial opportunities



For the future you want

Scottish Car Club Vehicle Fleet Profile

Headlines

10% increase in the number of Ultra Low Emission car club cars since 2014/15

- Petrol hybrids, plug-in hybrids, battery electric and hydrogen fuel cell vehicles comprise 44% of the Scottish car club fleet but less than 0.5% of all UK cars.
- There were 101 (35%) Ultra Low Emission Vehicles (ULEV: carbon dioxide emissions of 75 g/km or less) on the Scottish car club fleet and 70 of those were zero-tailpipe-emission battery electric or hydrogen fuel cell vehicles.
- Scotland has the only hydrogen fuel cell vehicles operating in a UK car club fleet.

The Scottish car club is cleaner than the UK private fleet

- Only 6% of the car club fleet was diesel powered, compared to 38% of the UK car fleet.
- 95% of the fleet already complies with anticipated Clean Air Zone standards.

Reducing Pollution

- The small number of diesel vehicles means that this fleet has very low emissions of the toxic pollutants nitrogen oxides and particulates.
- Nearly one quarter of the fleet is zero emission at the point of use.



For the future you want

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