



Electrification of urban fleets

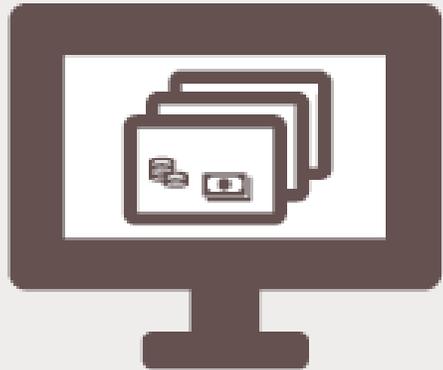
22 Oct 2018

Peter Harris, Director of Sustainability, UPS Europe



GLOBAL SMALL PACKAGE

Full spectrum of ground and air package shipping services

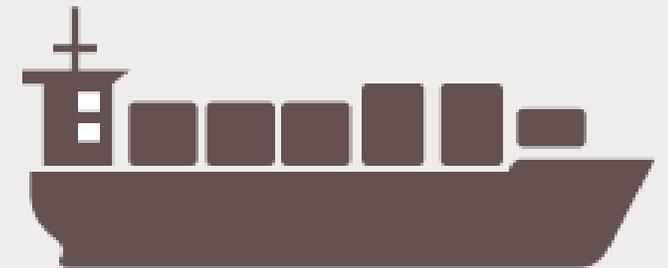


Traditional and nontraditional financial and payment services through UPS Capital

INSURANCE & FINANCING

LOGISTICS & DISTRIBUTION

Solutions that manage the flow of goods from receiving and storage to processing and shipping



A global portfolio of brokerage, less-than-truckload and full truckload services, and air and ocean freight services

FREIGHT FORWARDING



Who We Serve

10.5 Million+
Customers
Daily

46 Million+
UPS My Choice®
Members
(as of June 2018)

220+
Countries and
Territories Served

Where We Go

5.1 Billion
2017 Delivery
Volume

Americas
Asia-Pacific
Europe
Indian Subcontinent,
Middle East, and Africa
(ISMEA)
USA

20 Million
Package Deliveries
Daily

How We Do It

454,000+
Global Employees

2,240+
Daily Flight
Segments

119,000
Vehicles

2,500+
Worldwide
Operating Facilities

27,500+
UPS Access Point™
Locations

~9,100
Alternative Fuel
or Advanced
Technology Vehicles

580+
Owned and
Leased Aircraft

Business as usual with diesel vehicles is no longer good enough...

INDEPENDENT News Video Sports Culture [IndyLife](#) Video Daily Edition

Environment

Paris plans to banish all petrol and diesel vehicles from city centre by 2030

French capital accelerates plan to wean country off gas-guzzlers

Chris Low | Thursday 12 October 2017 10:20 BST | [Click to follow The Independent Online](#)



India, France, Britain and Norway all want to completely ditch gas and diesel cars in favor of cleaner vehicles.

At least 10 other countries have set sales targets for electric cars.

The Dutch government confirms plan to ban new petrol and diesel cars by 2030

Fred Lambert - Oct. 10th 2017 1:56 pm ET @FredericLambert



Environment > Climate Change

Norway to 'completely ban petrol powered cars by 2025'

'What an amazingly awesome country', Elon Musk tweeted in response to the plan

Jess Staufenberg | Saturday 4 June 2016 17:15 BST | [Click to follow The Independent Online](#)



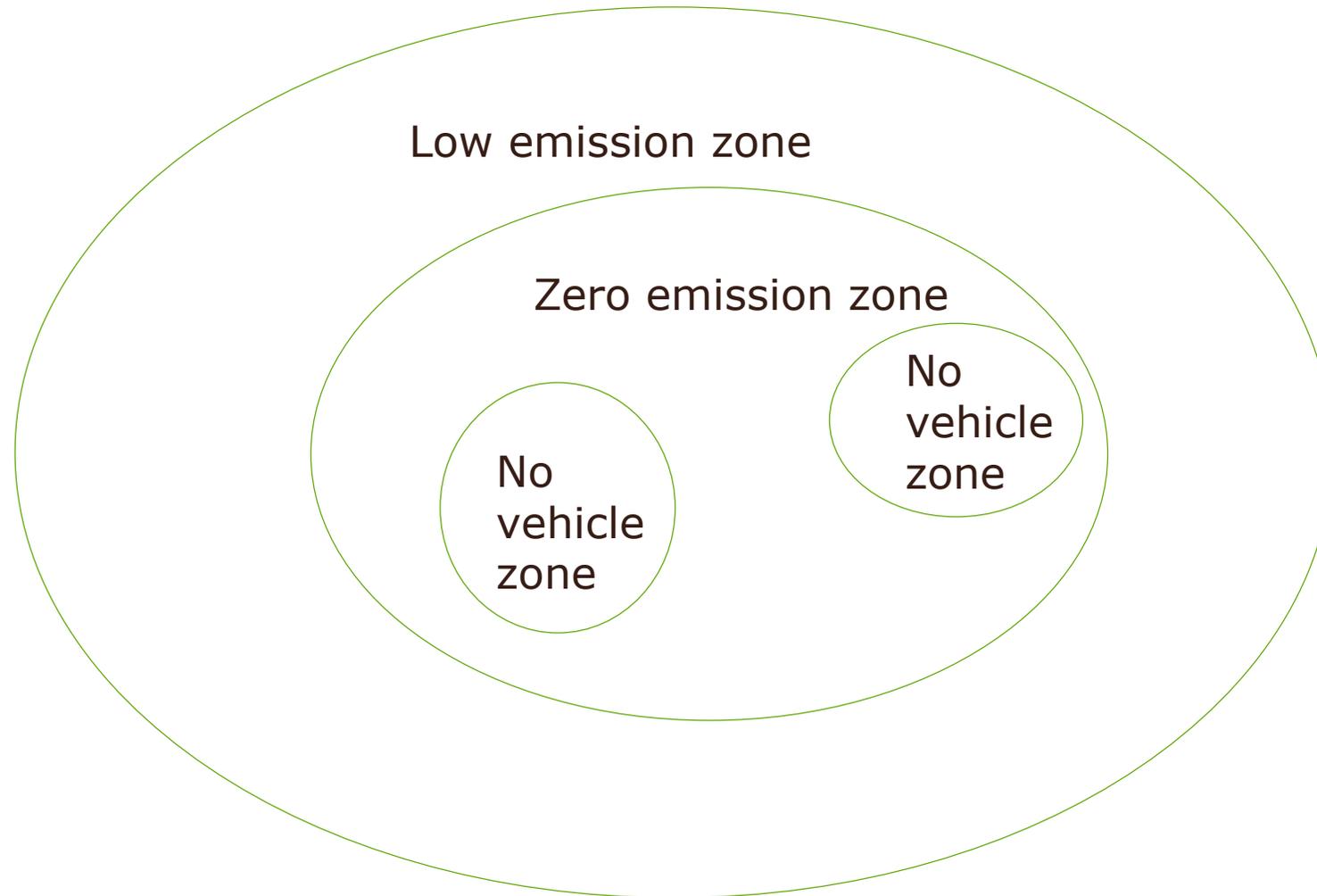
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C40 Blog

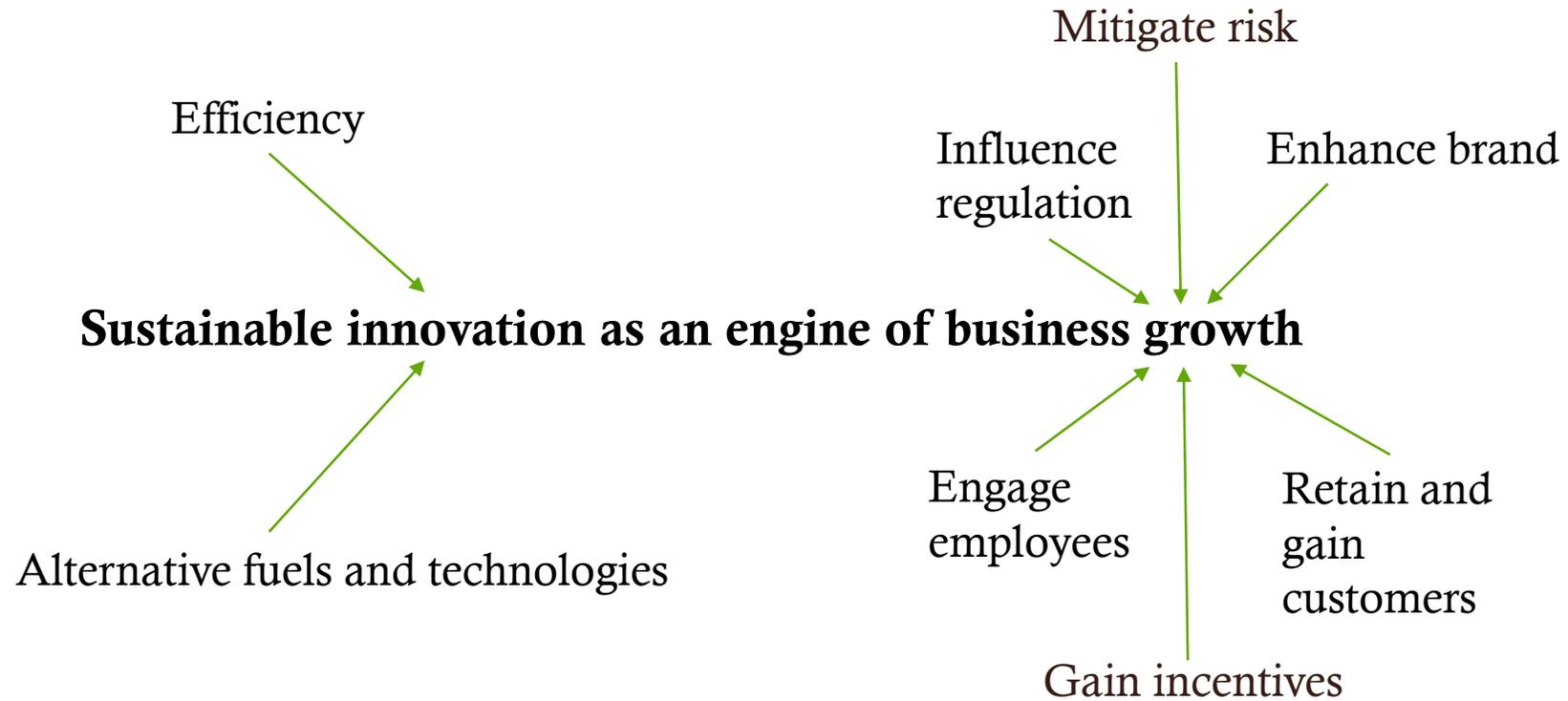
Daring Cities Make Bold Air Quality Commitment To Remove All Diesel Vehicles By 2025

December 1, 2016

The future urban landscape we need to plan for...



Strategy



Global goals

- 25% of all vehicle purchases to be alternative fuel / technology by 2020
- 40% of all ground fuel purchased to be alternative fuel by 2025
- 25% of electricity to be from renewable sources by 2025
- Absolute greenhouse gas emissions from ground operations reduction of 12% by 2025



UPS Europe Alternative Technology Roadmap

	Collection and Delivery under 100 km per day	Collection and Delivery over 100 km per day	Feeder
Walker or tricycle	Good	Backup	Backup
Electrically assisted tricycle	Good	Backup	Backup
Electric	Good	Backup	Backup
Range extended electric or hybrid	Backup	Good	Backup
Biomethane	Backup	Good	Good
Biodiesel	Backup		
Natural gas (CNG, LNG)	Backup		
Hydrogen	Backup		Backup
Propane (LPG)	Backup		Backup

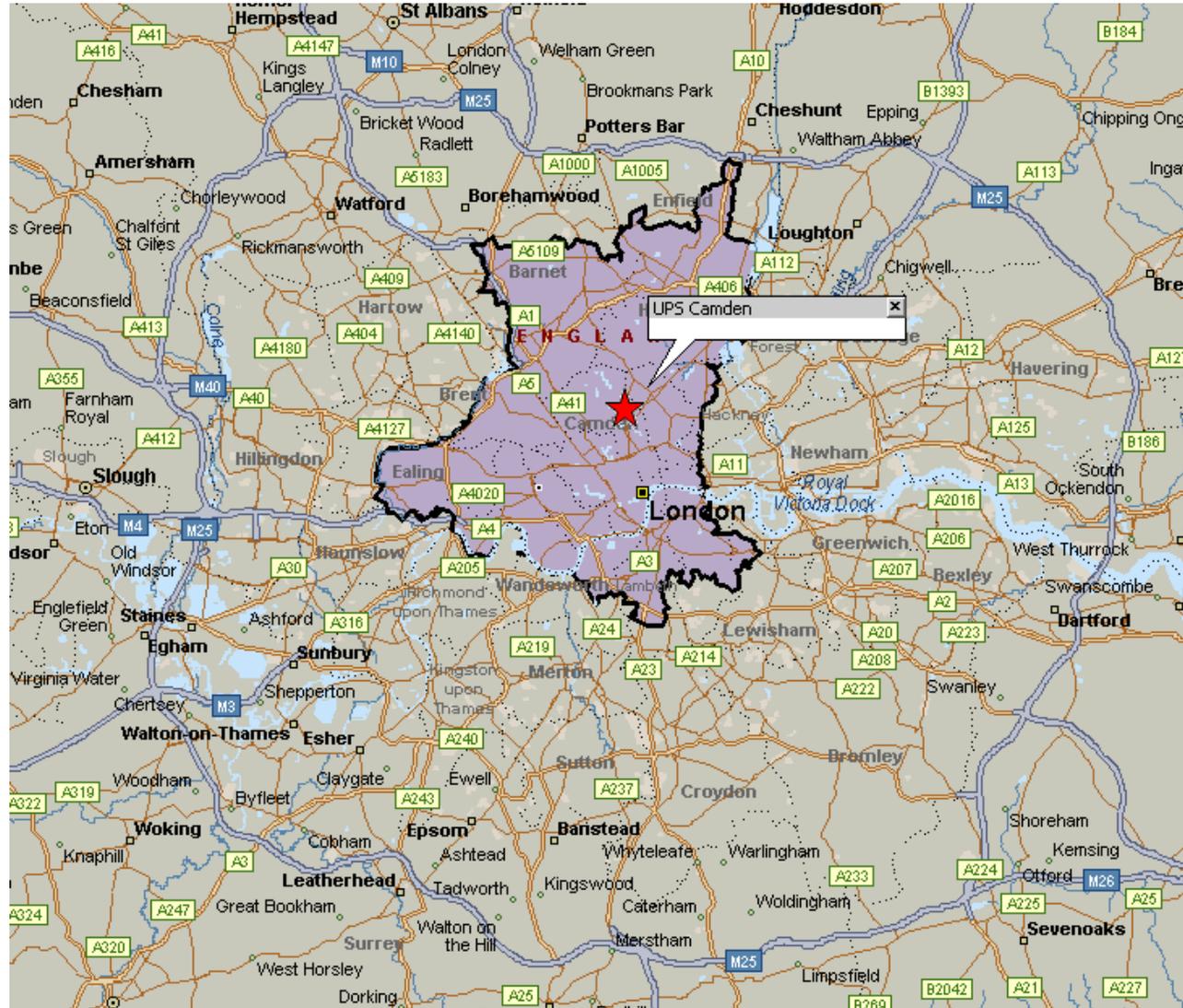
Key:	Good	Good sustainability, feasibility, payback balance
	Backup	Backup
	Poor	Poor sustainability, feasibility, payback balance

Urban: Electrification and cycle logistics

Long haul: Renewable natural gas



Electrification - UPS in London



Electrification challenges and solutions

Vehicles:

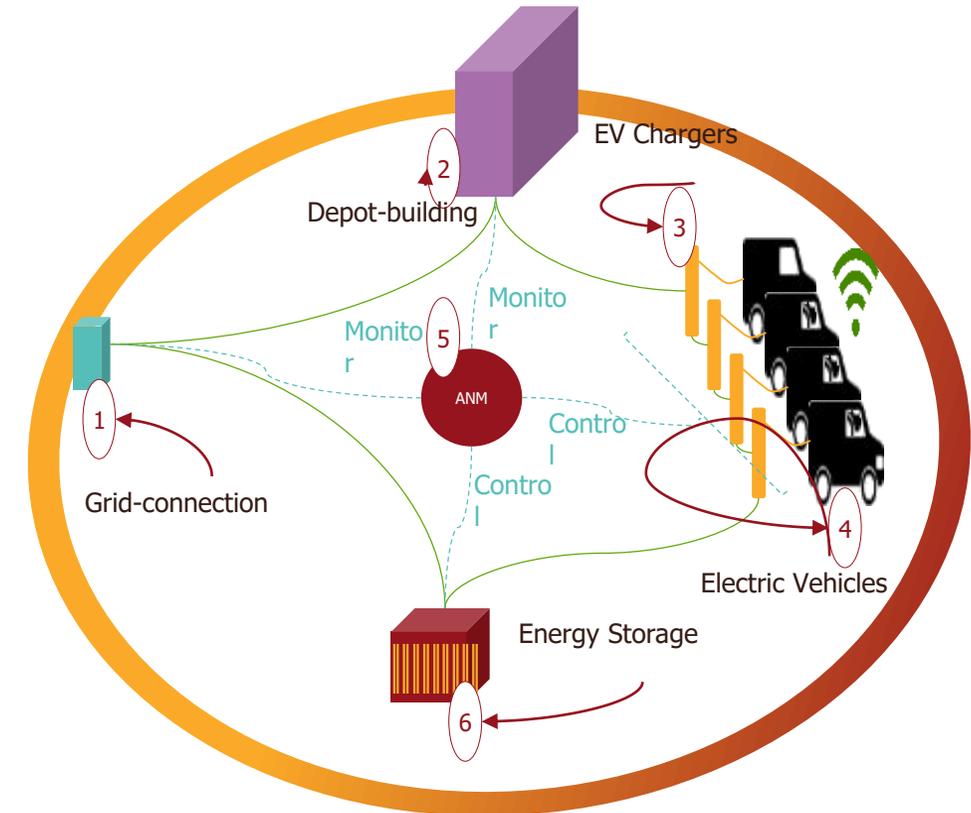
- Lack of OEM product
 - Early failures, conversions, encouragement of market disruption
- High cost
 - Support needed through 'valley of death', eg. FREVUE
- Lack of range for some applications
 - Range-extended project with InnovateUK



Electrification challenges and solutions

Infrastructure:

- Upgrades require funding of others' assets, are non-incremental and expensive
 - Support needed, eg. FREVUE
 - Rejoin production with distribution, virtually if not actually
 - Leverage smart-grid technologies, decentralised production and storage – Innovate UK project



Conclusion

Urban fleet electrification is not easy but it is possible.

It will take time, money and collaborative commitment from industry, government and civil society to get right.

But get it right we must.

Thank you

www.sustainability.ups.com

