A highway to greenness

Analysing green narratives in car brands' adverts

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SCHOOL OF DESIGN

FINAL SYNTHESIS DESIGN STUDIO
LM in Communication Design
Sez. C3 — 2022/2023

GROUP 07

A highway to greenness. Analysing green narratives in car brands' adverts

AUTHORS
Andrea Benedetto
Simone Cerea
Camilla Guerci
Surabhi Gupta
Haleh Nobar
Alessandro Pedriali
Yousef Taffal

FACULTY
Michele Mauri
Ángeles Briones
Gabriele Colombo
Simone Vantini
Salvatore Zingale

TEACHING ASSISTANTS
Elena Aversa
Andrea Benedetti
Tommaso Elli
Beatrice Gobbo
Arianna Bellantuono

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Index

The automotive sector and greenwashing: quick overview

During these last decades, the automotive industry seems to have taken some steps towards “sustainability”, by increasing fuel efficiency and developing hybrid and “emission-free” powertrains*. Despite this, it is still often accused of greenwashing, since many brands still don’t plan to cease the production of internal combustion engine vehicles nor to stop collaborating or lobbying with fossil fuel companies, even when their line-up is “fully electric”. And when it comes to batteries, there lays the problem of mining rare-earth metals.

** (in a motorized vehicle) the whole mechanism by which power is generated and transmitted to the road, surrounding air, water, etc. (Collins English Dictionary, n.d.)*

Research objectives, chosen platform (YouTube), and dataset

We decided to investigate some of the communication strategies that car brands adapt to make their models appear more “eco-friendly” in their video advertisements. More specifically, we analysed 30 internal combustion engine (ICE), 30 hybrid electric (HE) and 30 battery electric (BE) models—for a total of 90 different vehicles—to see if they present them differently according to their propulsion.

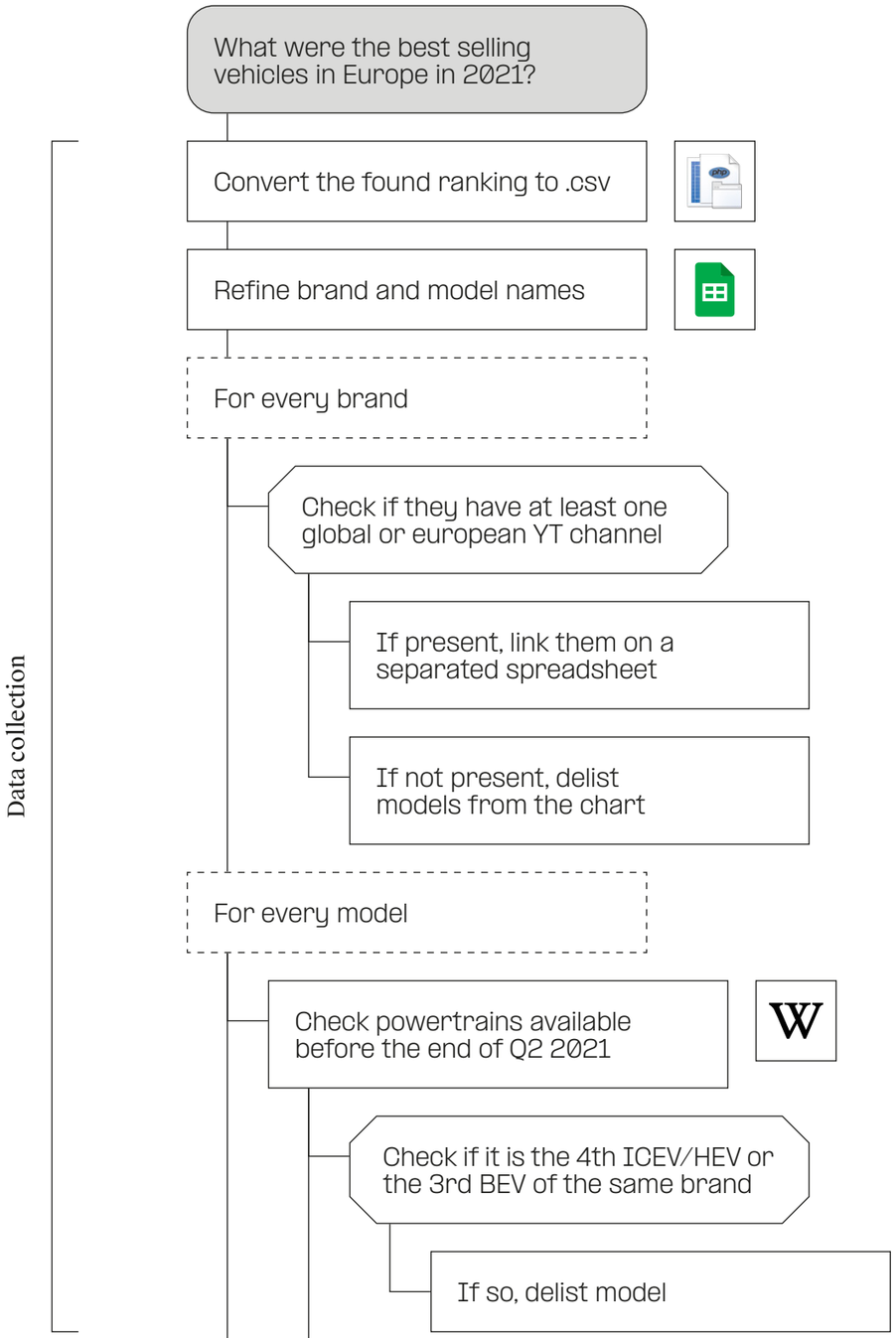
In order to have a series of comparable and relevant advertisements across as many brands as possible, we focused on the ones published on YouTube, starting from a ranking of all the models sold in Europe in 2021 by number of sales, published in an article written by Demandt (n.d.).

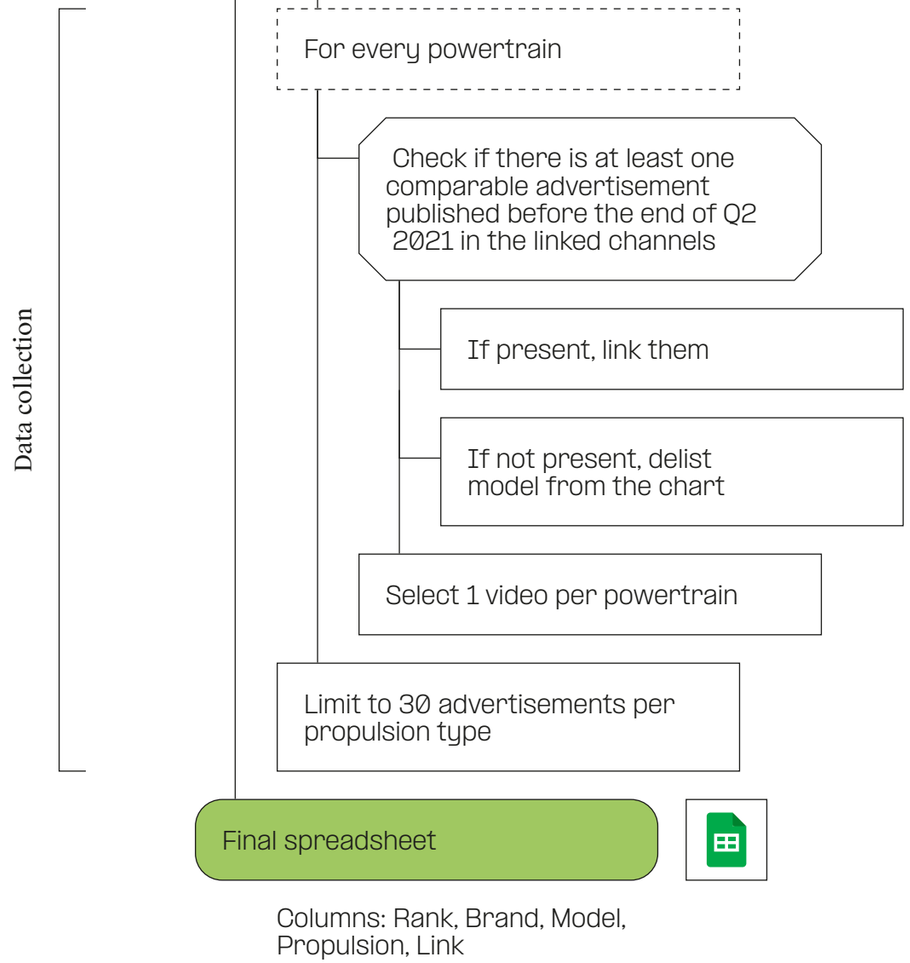
Picked models

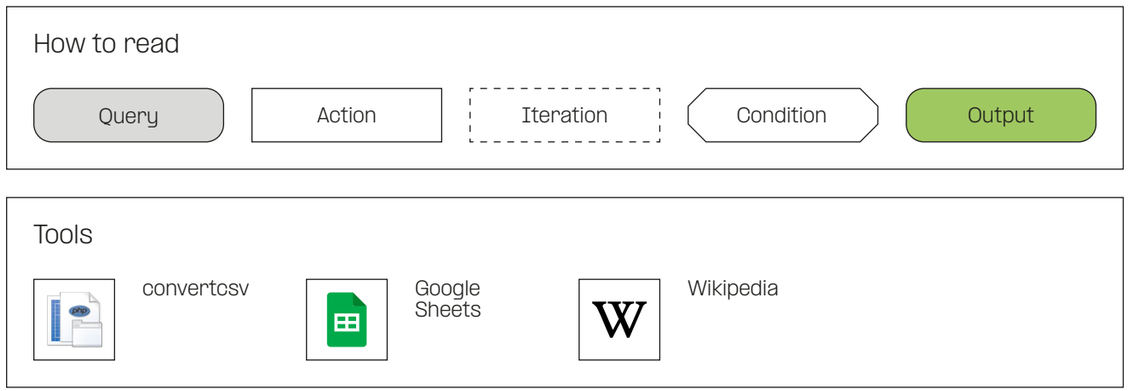
Rank	Brand	Model	Propulsion
1	Volkswagen	Golf	ICE
3	Peugeot	208	BE
5	Peugeot	2008	BE
6	Opel/Vauxhall	Corsa	BE
7	Volkswagen	T–Roc	ICE
8	Toyota	Yaris	HE
9	Fiat	500	BE
10	Renault	Captur	ICE
12	Volkswagen	Polo	ICE
13	Skoda	Octavia	ICE
15	Hyundai	Tucson	ICE
16	Toyota	Corolla	HE
19	Ford	Puma	HE
23	Volvo	XC40	ICE
23	Volvo	XC40 Recharge	BE
24	Mercedes–Benz	A–Class	ICE
25	Mini	Cooper	ICE
25	Mini	Cooper SE	BE
26	Nissan	Qashqai	HE
27	BMW	3–series	ICE
28	Hyundai	Kona	BE
29	Ford	Kuga	HE
33	Seat	Leon	HE
34	BMW	1–series	ICE
35	Audi	A3	ICE
36	Audi	Q3	ICE
37	Skoda	Fabia	ICE
39	BMW	X1	ICE
40	Ford	Fiesta	ICE
44	Volkswagen	Passat	HE
45	Skoda	Kamiq	ICE
46	BMW	iX3	BE
47	Opel/Vauxhall	Crossland X	ICE
49	Mercedes–Benz	GLA	ICE
50	Mercedes–Benz	GLC	ICE
51	Skoda	Karoq	ICE
52	Volvo	XC60	HE
53	Volkswagen	ID.3	BE
54	Opel/Vauxhall	Mokka	BE
56	Renault	Zoe	BE
59	Citroën	C3 Aircross	ICE
62	Jeep	Renegade	ICE
62	Jeep	Renegade 4xe	HE
64	Hyundai	i20	ICE
65	Audi	Q5	ICE

Dataset

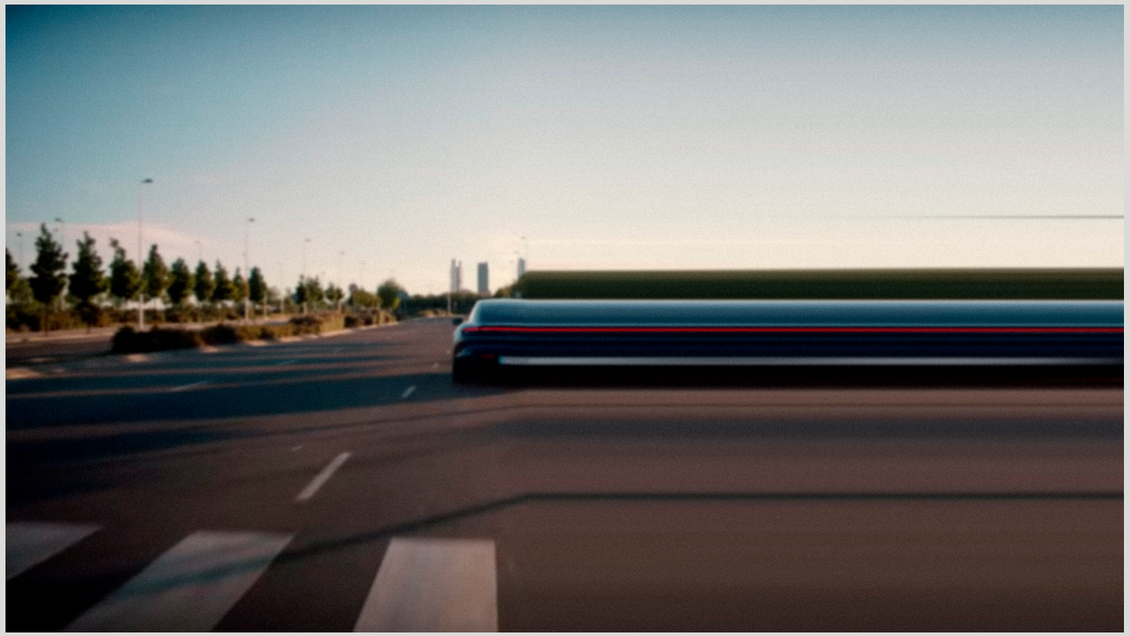
Rank	Brand	Model	Propulsion
68	Suzuki	Swift	HE
70	Opel/Vauxhall	Astra	ICE
77	Suzuki	Vitara	ICE
78	Jeep	Compass	ICE
80	Ford	Ranger	ICE
84	Volkswagen	ID.4	BE
87	BMW	5–series	HE
88	Opel/Vauxhall	Grandland X	ICE
88	Opel/Vauxhall	Grandland X Hybrid4	HE
93	Skoda	Enyaq	BE
97	Mini	Countryman	HE
103	Suzuki	Ignis	HE
104	Renault	Arkana	HE
118	Land Rover	Range Rover Evoque	HE
123	Volvo	XC90	HE
124	MG	ZS	BE
129	Tesla	Model Y	BE
136	Peugeot	508	HE
137	BMW	i3	BE
138	DS	7 Crossback	HE
141	Hyundai	Ioniq	BE
146	Polestar	2	BE
148	Audi	e–Tron	BE
150	Lexus	UX	HE
153	Hyundai	Ioniq 5	BE
156	Mercedes–Benz	EQC	BE
158	Honda	CR–V	HE
164	MG	EHS	HE
167	Porsche	Taycan	BE
169	DS	3 Crossback	BE
172	Land Rover	Discovery Sport	HE
174	Hyundai	Bayon	HE
180	Mitsubishi	Outlander	HE
182	Lexus	NX	HE
189	Mazda	MX–30	BE
190	Jaguar	F–Pace	HE
193	Land Rover	Range Rover Velar	HE
197	Audi	e–Tron Sportback	BE
210	Jaguar	I–Pace	BE
211	Kia	EV6	BE
212	Lynk & Co	1	HE
263	Toyota	Prius	HE
298	Volvo	C40	BE
301	BYD	Tang	BE
332	Xpeng	g3	BE


What were the best selling vehicles in Europe in 2021?
Convert the found ranking to .csv
Refine brand and model names
For every brand
Check if they have at least one global or european YT channel
If present, link them on a separated spreadsheet
If not present, delist models from the chart
For every model
Check powertrains available before the end of Q2 2021
Check if it is the 4th ICEV/HEV or the 3rd BEV of the same brand
If so, delist model
Data collection


For every powertrain
Check if there is at least one comparable advertisement published before the end of Q2 2021 in the linked channels
If present, link them
If not present, delist model from the chart
Select 1 video per powertrain
Limit to 30 advertisements per propulsion type
Final spreadsheet
Columns: Rank, Brand, Model, Propulsion, Link
Data collection


How to read
Query
Action
Iteration
Condition
Output
Tools
convertcsv
Google Sheets
Wikipedia

What kinds of environments are chosen by car brands to present their models via video advertisements on YouTube?

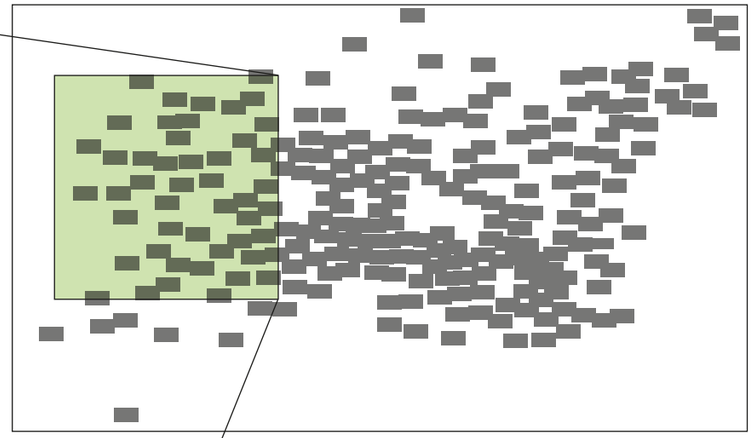


Car brands are notorious for integrating their models in natural landscapes. Hence, we decided to analyse all the shots in which the selected advertisements focus on the vehicles: are there any recurring stereotypical environments around the models, regardless of brand or propulsion type? What are the most common elements that characterise these landscapes?

Finding 1

Most adverts show the models in similar environments

The most noticeable trait of these scenes, regardless of propulsion, is the overall location: an idealistic landscape–almost always avoid of people and signs of anthropisation.



Finding 2

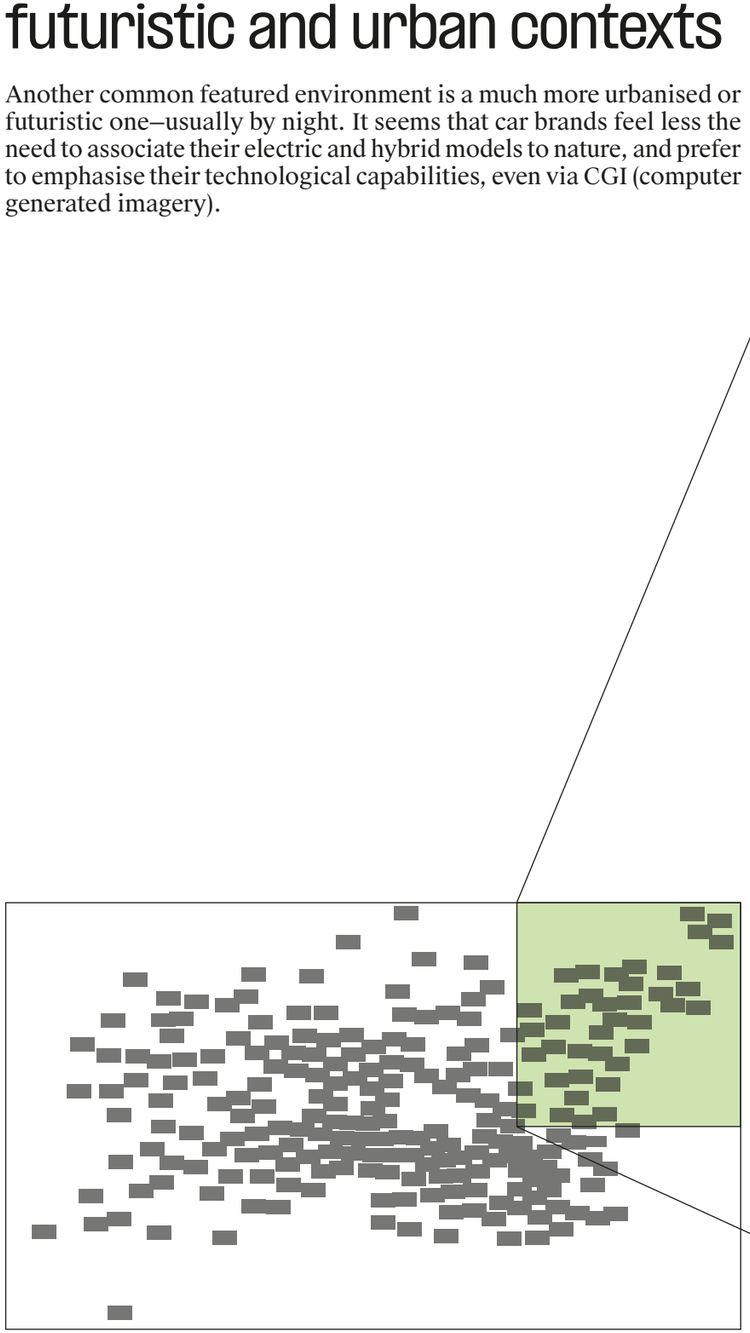
Many petrol–powered SUVs are shown in wild and uncontaminated areas

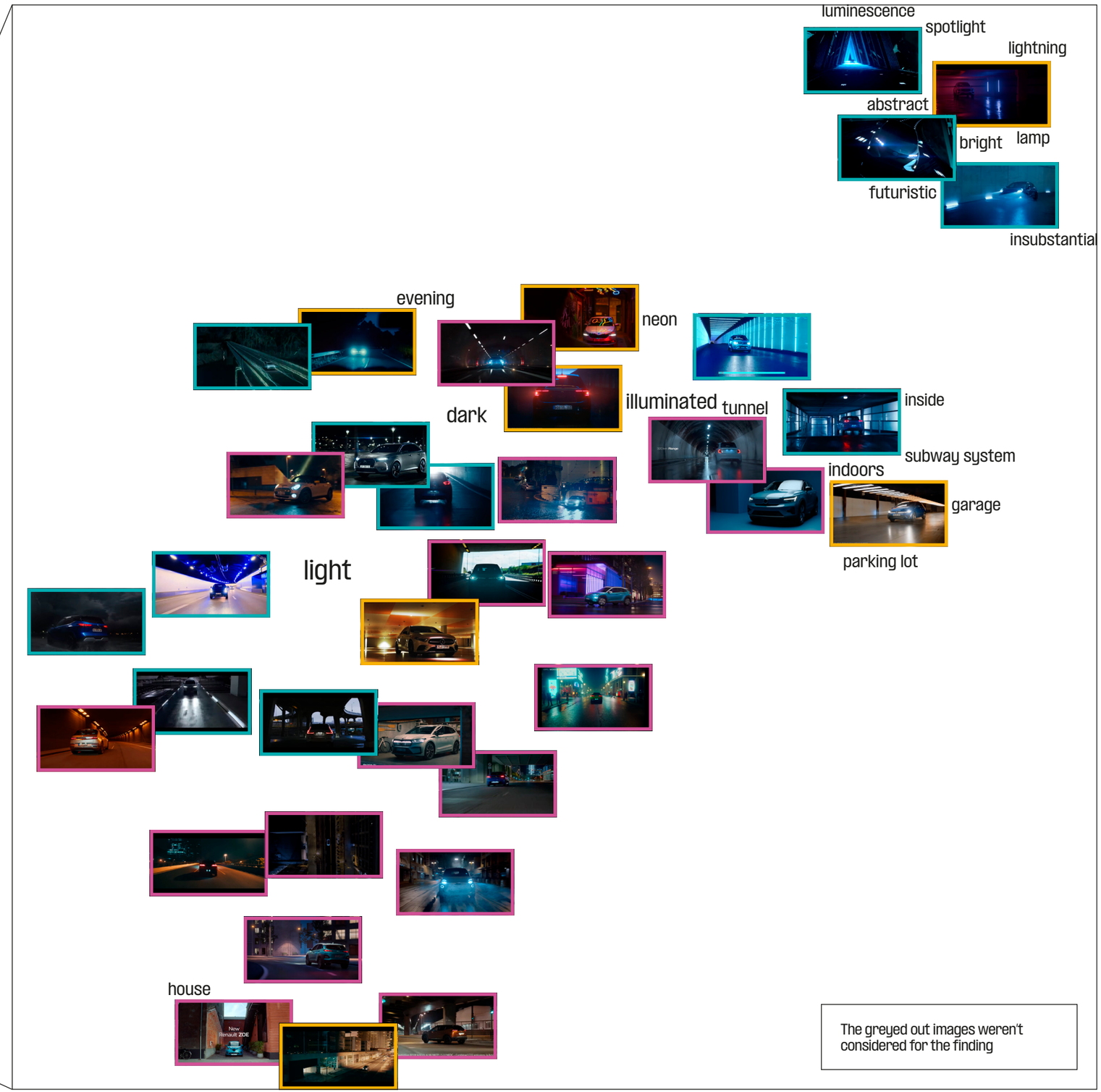
We can observe how particularly wild areas, like deserts, seashores, and mountains–usually in broad daylight–are a common location to show SUVs and crossovers, especially ICE ones.

Finding 3

Many electric and hybrid vehicles are shown in futuristic and urban contexts

Another common featured environment is a much more urbanised or futuristic one–usually by night. It seems that car brands feel less the need to associate their electric and hybrid models to nature, and prefer to emphasise their technological capabilities, even via CGI (computer generated imagery).





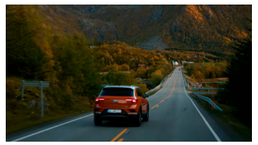
Finding 4

Trees appear in more than one third of the scenes

Right after *road*, *asphalt*, *outdoors* and *daylight*, *tree* is one of the most common visual elements (with 78 occurrences) associated to the scenes. Thus, we can argue that many brands try to maintain some level of greenery in most of the shots, even when filmed in urban settings.

21/30 ICE models adverts

Volkswagen T–Roc

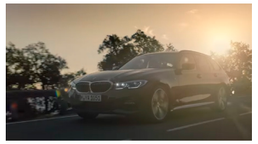


Skoda Octavia

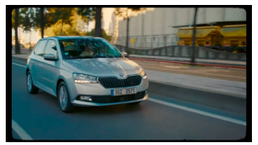
Volvo XC40

Mini Cooper

BMW 3–series



Skoda Fabia



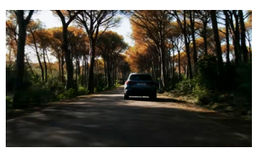
BMW X1

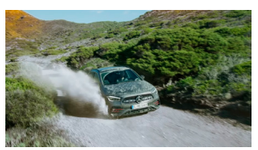
Ford Fiesta

Skoda Kamiq

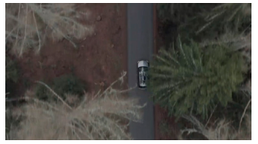
Opel/Vauxhall Crossland X

Mercedes–Benz GLA





Skoda Karoq



Citroën C3 Aircross

Jeep Renegade

Hyundai i20

Audi Q5

Opel/Vauxhall Astra

Suzuki Vitara

Jeep Compass

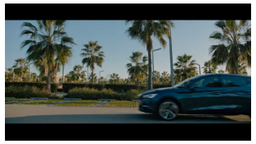
Ford Ranger

Opel/Vauxhall Grandland X

15/30 HE models adverts

Toyota Yaris

Seat Leon



Volvo XC60

Suzuki Swift

BMW 5–series

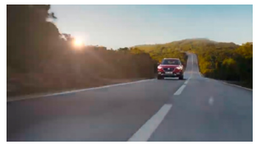
Opel/Vauxhall Grandland X Hybrid 4

Land Rover Range Rover Evoque

Volvo XC90

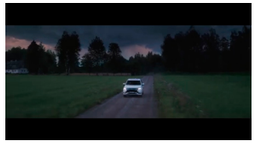
Lexus UX

MG EHS

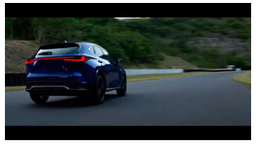


Hyundai Bayon

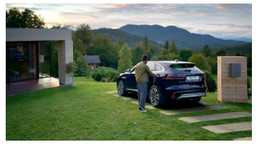
Mitsubishi Outlander

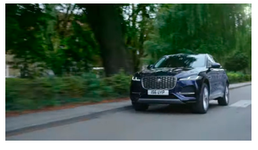


Lexus NX

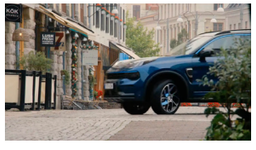


Jaguar F–Pace





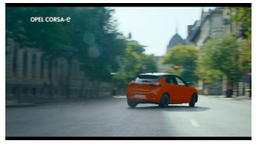
Lynk & Co 01



15/30 BE models adverts

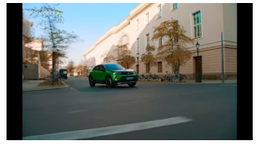
Peugeot 2008

Opel/Vauxhall Corsa



Volkswagen ID.3

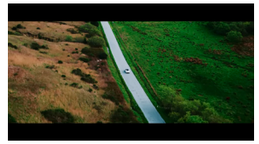
Opel/Vauxhall Mokka



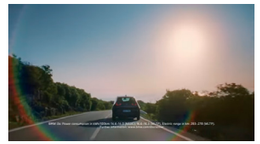
Skoda Enyaq

MG ZS

Tesla Model Y



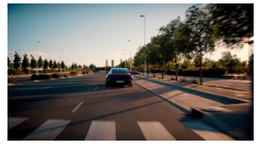
BMW i3



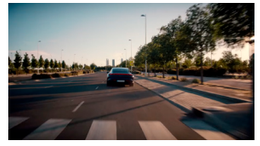
Hyundai Ioniq

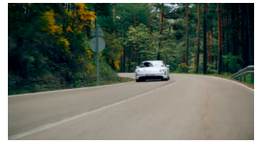
Audi e–Tron

Mercedes–Benz EQC

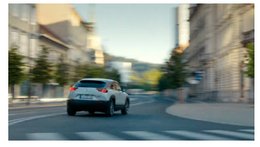


Porsche Taycan





Mazda MX–30



Audi e–Tron Sportback

Jaguar I–Pace

Research question

Data collection

For every video

For each scene in a different environment in which the advertised model appears

Save a representative frame

For every image

Auto–tag them with CV

Refine tags

Data analysis

Spreadsheet prep

Columns: ImageName, Brand, Model, Propulsion, Tags

Create bipartite network

Draft visualisation

Final visualisation

How to read

Query | Action | Iteration | Condition | Output

Tools

- Screenshot YouTube extension
- Clarifai
- Google Sheets
- Table2Net
- Gephi
- Adobe Illustrator
- Adobe InDesign

What kinds of narrative strategies are used by car brands to present their models via video advertisements on YouTube?

Another strategy that car brands often use to promote their models as more sustainable in their video advertisements is via storytelling and rhetoric. Thus, we analysed the overall narrative structure of all the videos, including the often times added information related to emissions and consumption data: are there any recurring patterns or specific approaches between brands or propulsion types? How much time and space is given to emissions and consumption information?

** In each visualisation, the arrangement of the analysed adverts follows the ranking of the best-selling car models of the main dataset.*

Strategy 1: presenting vehicles as the solution to a problem

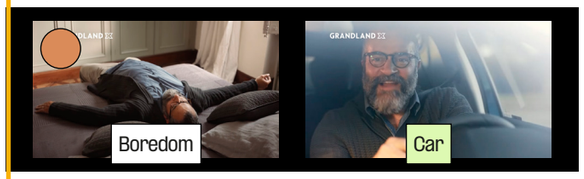
4/30 ICE models adverts

Volvo XC40

Jeep Compass

Mercedes–Benz GLC

Opel/Vauxhall Grandland X



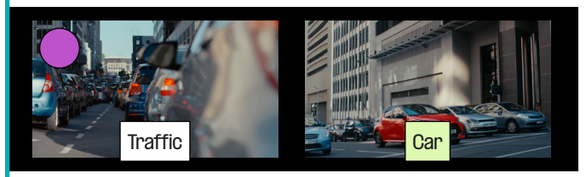
How to read

- Frames of the same advert
- Single frame
- Advert on a individual problem
- Advert on a collective problem
- ... Problem
- ... Solution

Question 2

5/30 HE models adverts

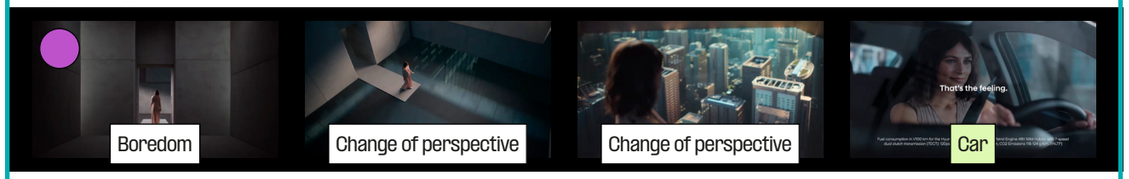
Toyota Yaris



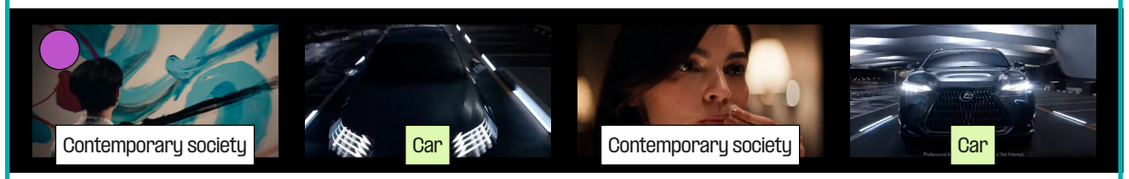
BMW 5–series

Opel/Vauxhall Grandland X Hybrid4

Hyundai Bayon



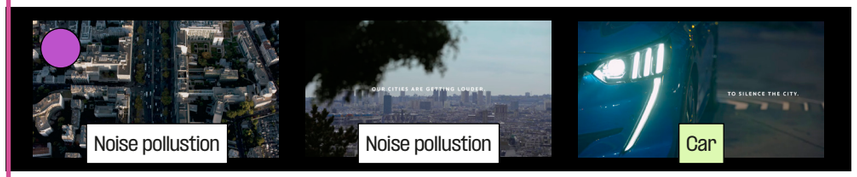
Lexus NX



Strategy 1: presenting vehicles as the solution to a problem

5/30 BE models adverts

Peugeot 208

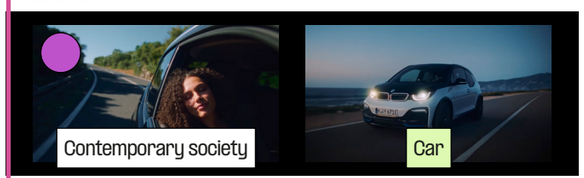


Opel/Vauxhall Corsa

Fiat 500

Opel/Vauxhall Mokka

BMW i3



Finding 1

Fighting climate change by buying a new electric vehicle

A common theme chosen for BEVs is showing contemporary societal and environmental issues: consumerism, noise pollution, and climate change are the most recurring ones. Thus, BEVs tend to be represented as the embodied solution to these problems.

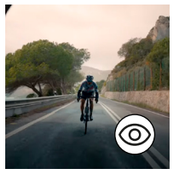
Strategy 2: associating vehicles to specific lifestyles

4/30 ICE models adverts

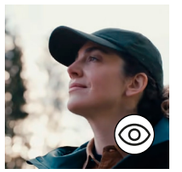
Volkswagen T-Roc

Skoda Karoq

Citroën C3 Aircross



Ford Ranger



3/30 HE models adverts

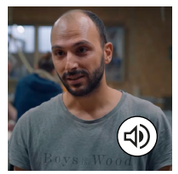
Volkswagen Passat

Land Rover Discovery

Mitsubishi Outlander

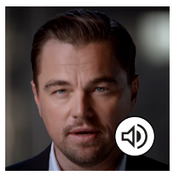
4/30 BE models adverts

Peugeot 208

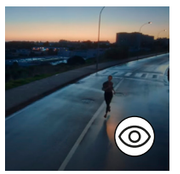


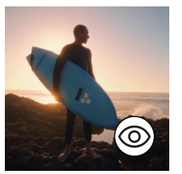
Opel/Vauxhall Corsa

Fiat 500



BMW iX3





How to read

- Single frame (cropped)
- Implicit reference to a "green" lifestyle (visual)
- Explicit reference to a "green" lifestyle (voiceover)

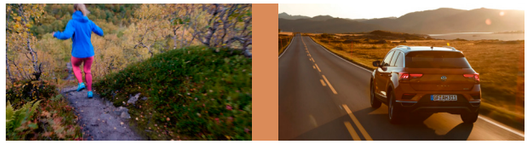
Finding 2

Electric and hybrid vehicles as an expression of a more sustainable lifestyle

It is also quite common for some advertisements to refer—either implicitly or explicitly—to "green" lifestyles. Interestingly, in the ones made for BEVs and HEVs, there are more explicit references to "sustainable" choices. In these cases, the car becomes an expression of the owner's lifestyle: sporty, 'green' and sustainable.

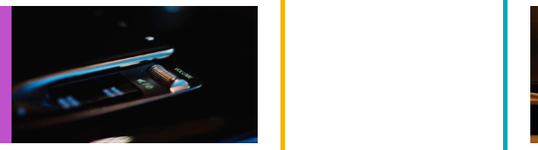
7/30 ICE models adverts

Volkswagen T–Roc

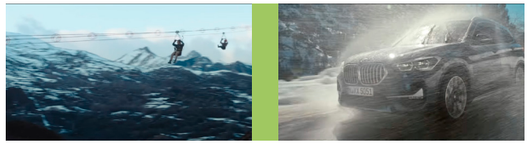



Skoda Octavia

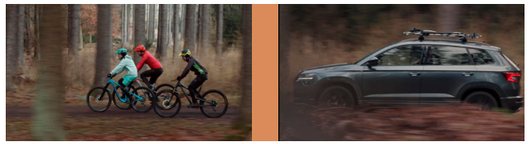

Mercedes–Benz A–Class



BMW X1

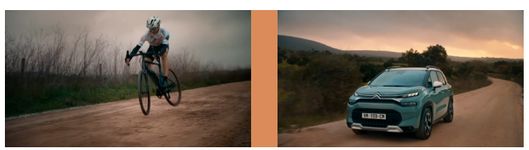



Skoda Karoq




Citroën C3 Aircross

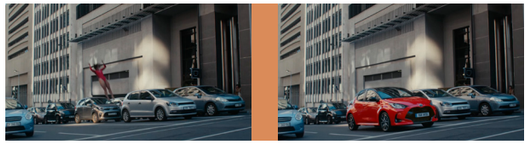


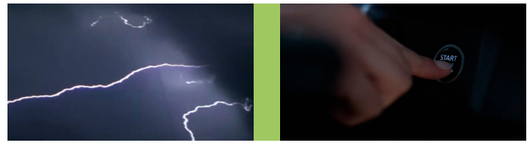
Ford Ranger

8/30 HE models adverts

Toyota Yaris



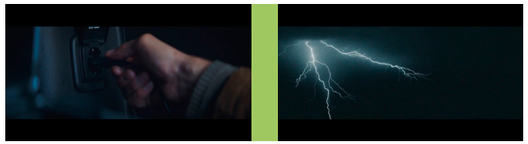
Nissan Qashqai



Mini Countryman

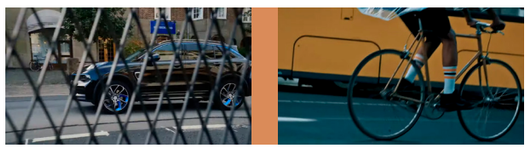

DS 7 Crossback


Mitsubishi Outlander



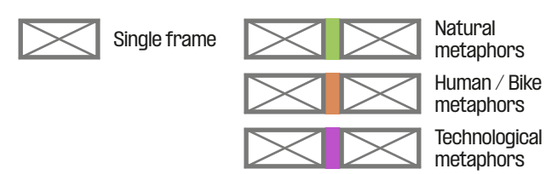
Jaguar F–Pace

Link & Co 1



Toyota Prius

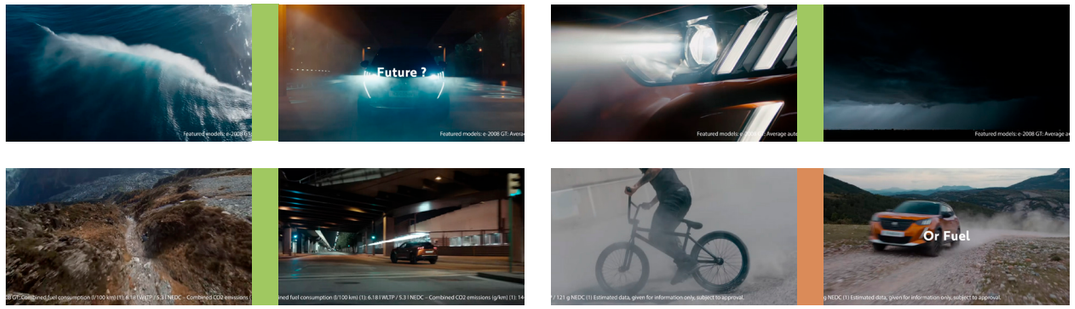
How to read



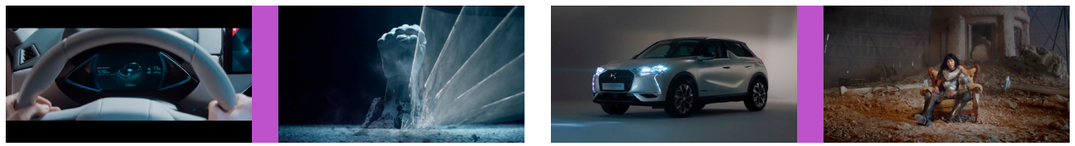
Strategy 3: visual metaphors

3/30 BE models adverts

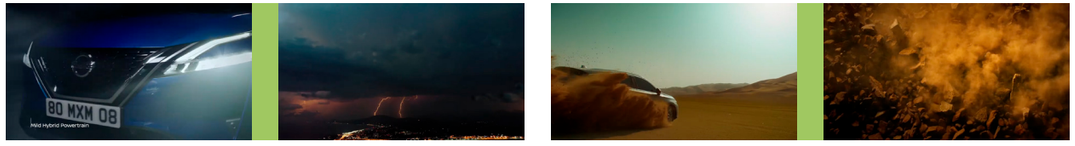
Peugeot 2008



DS 3 Crossback



BYD Tang



Finding 3

Rhetorical associations between vehicles and nature are common among all propulsion types

Through a succession of dynamic imagery, car brands tend to link characteristics of their models, regardless of propulsion, to nature–from animals to natural phenomena.

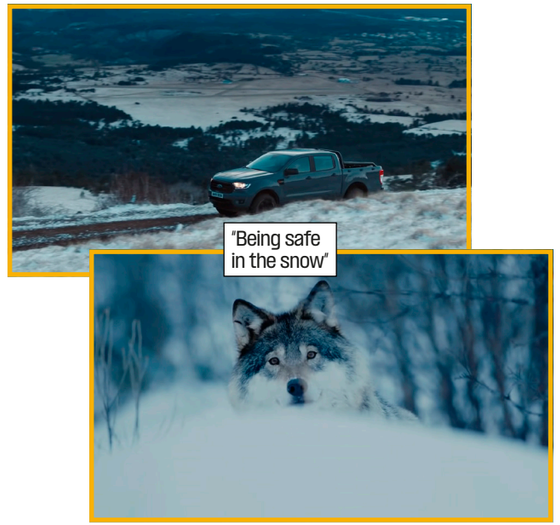
Total (all propulsions)

15	Natural metaphors
10	Human / Bike metaphors
6	Technological metaphors

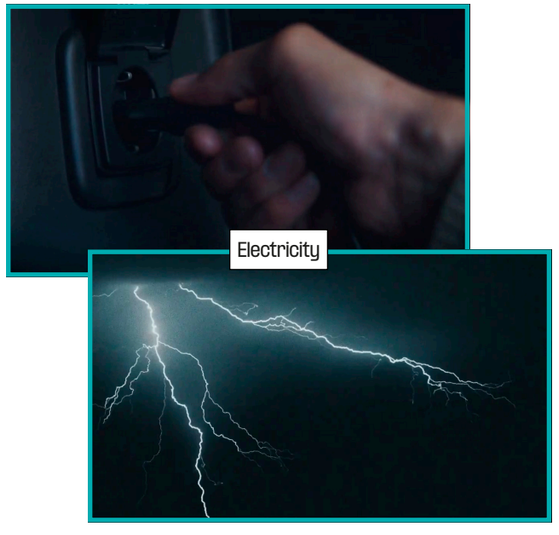
Focus on natural elements

Skoda Octavia

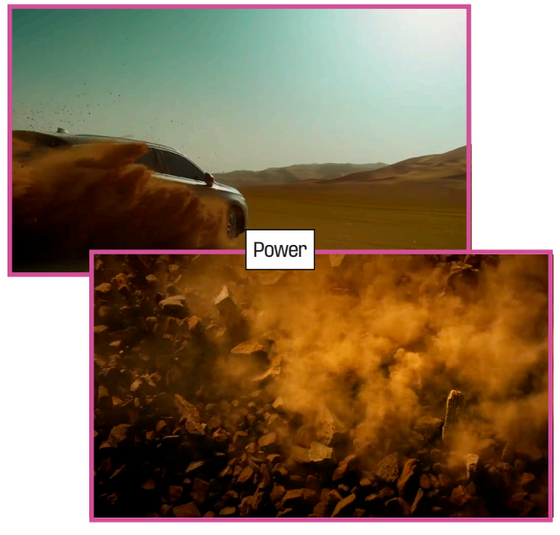
Ford Ranger



Mitsubishi Outlander



BYD Tang



How to read

ICE models advert frames

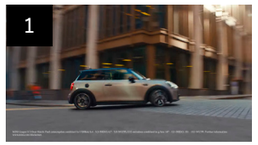
HE models advert frames

BE models advert frames

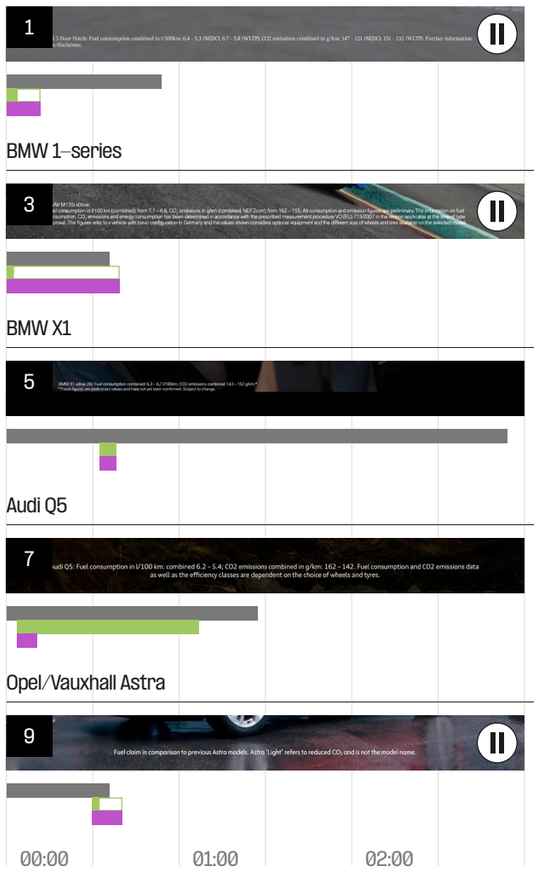
... Metaphor

Strategy 4: giving less space and time to emissions and consumption information

5/30 ICE models adverts

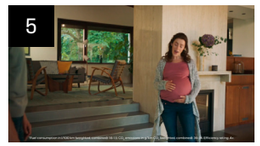


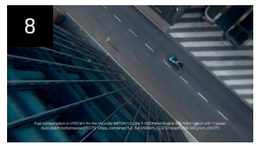
Mini Cooper



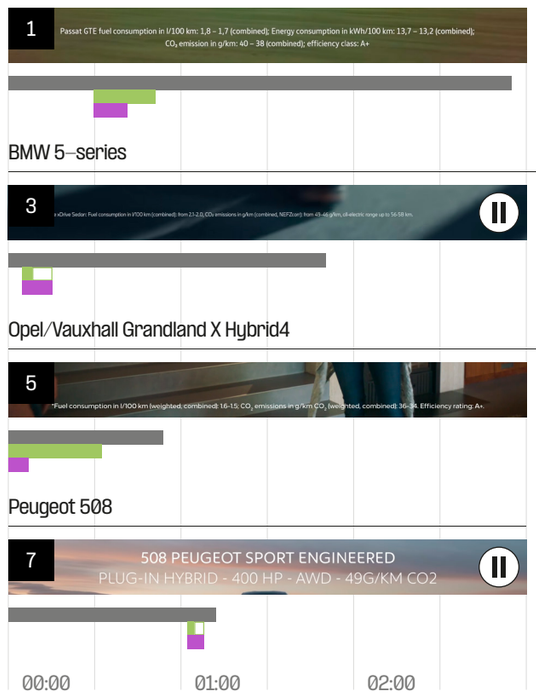
Question 2

6/30 HE models adverts

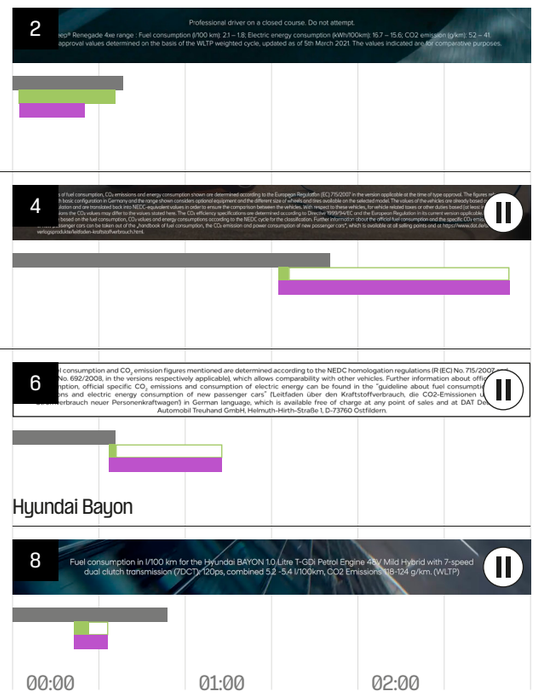




Volkswagen Passat



Jeep Renegade 4xe

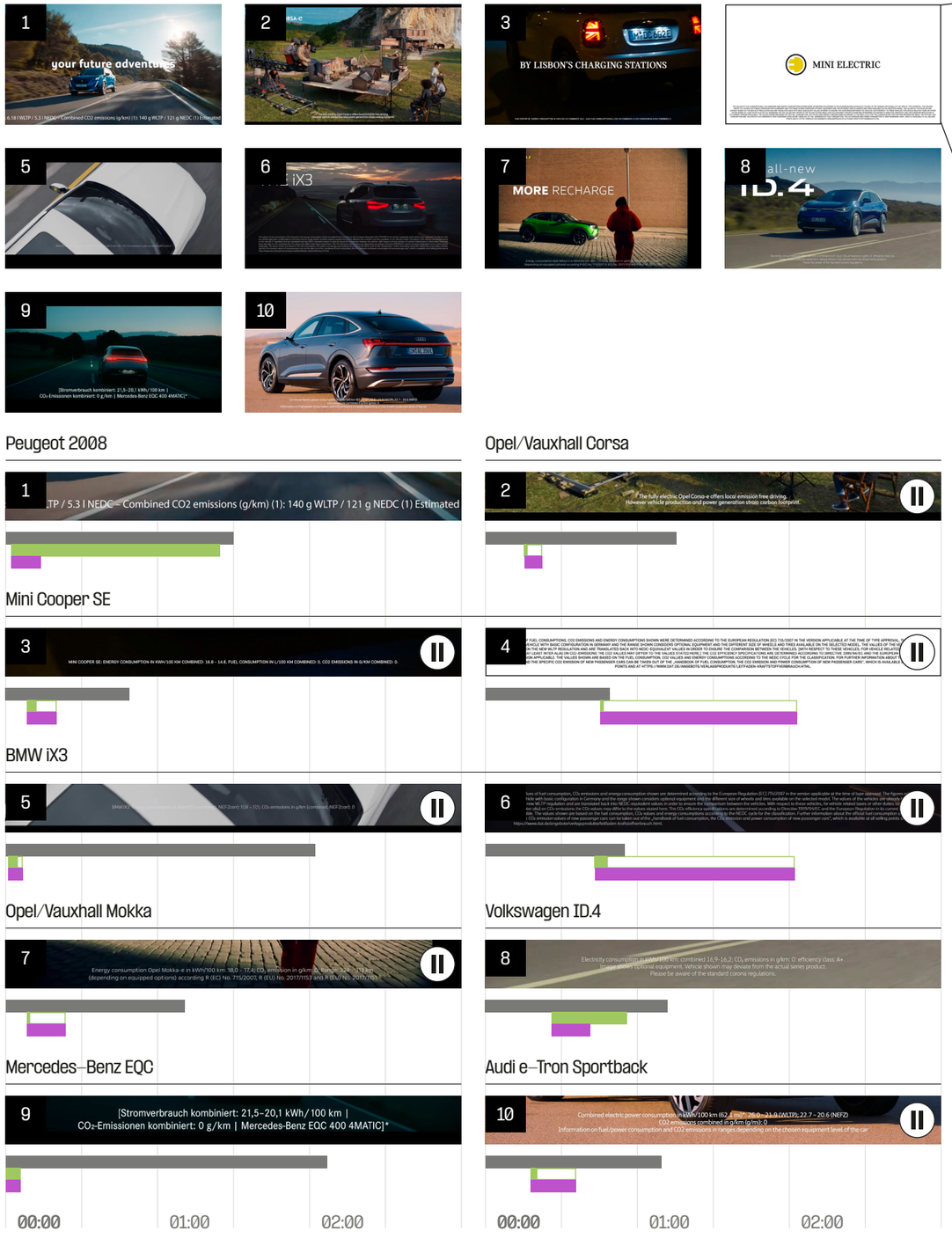


How to read

- Advert length
- Average time needed to read the statement
- Screen time of the statement
- Time needed to finish reading
- The bar exceeds the graph
- One must pause the video to read

Strategy 4: giving less space and time to emissions and consumption information

8/30 BE models adverts

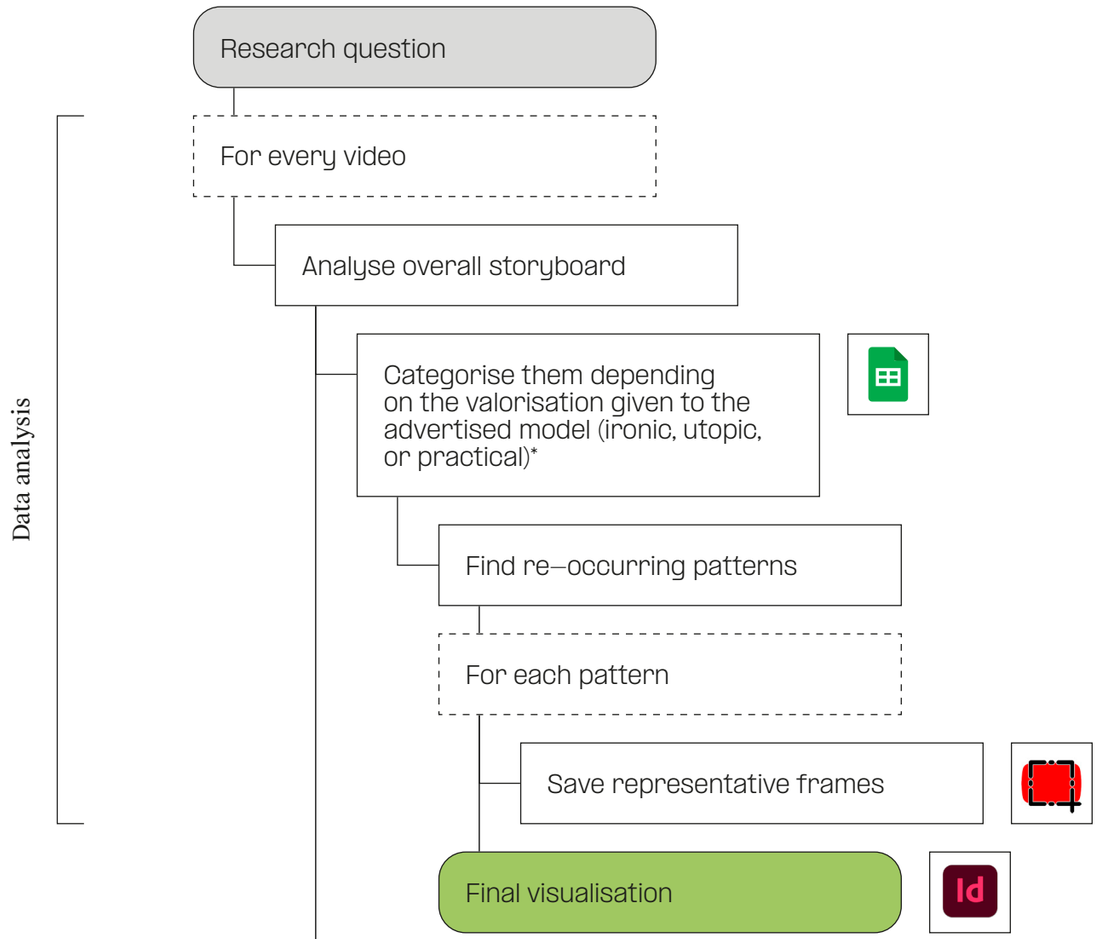


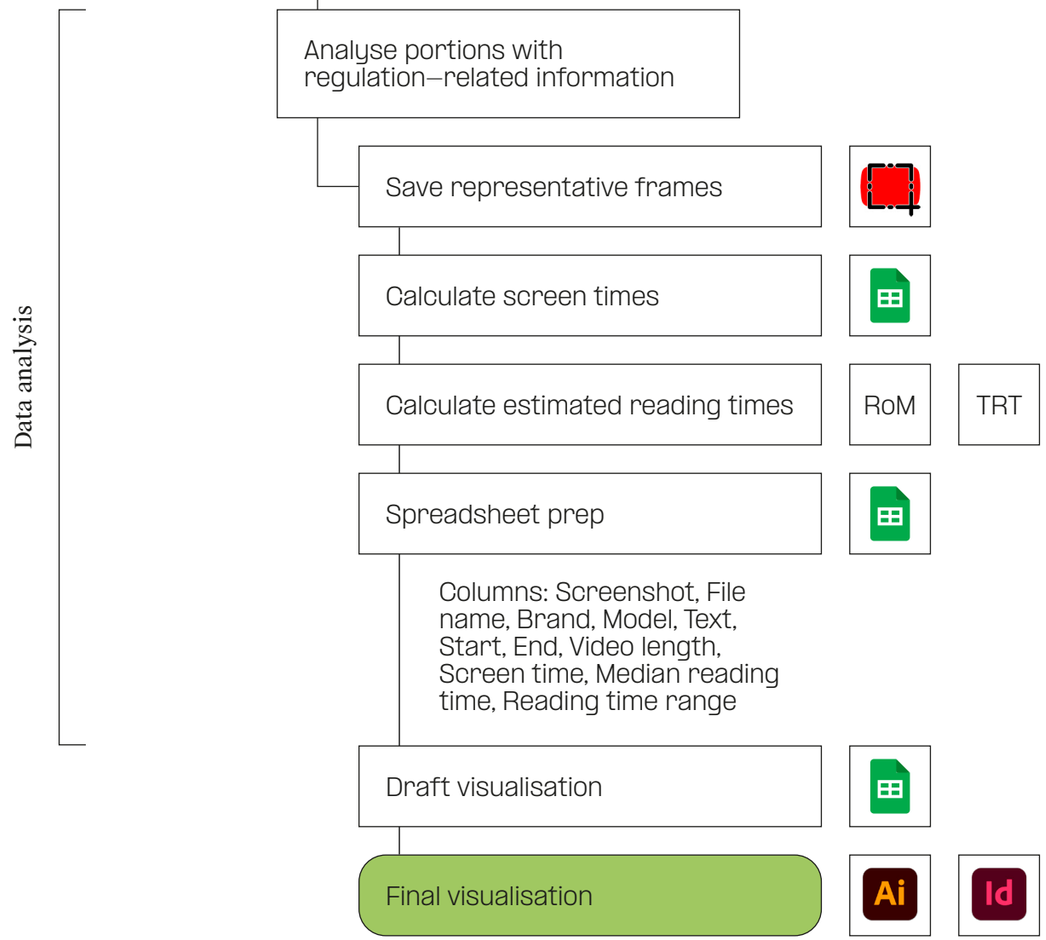
Question 2

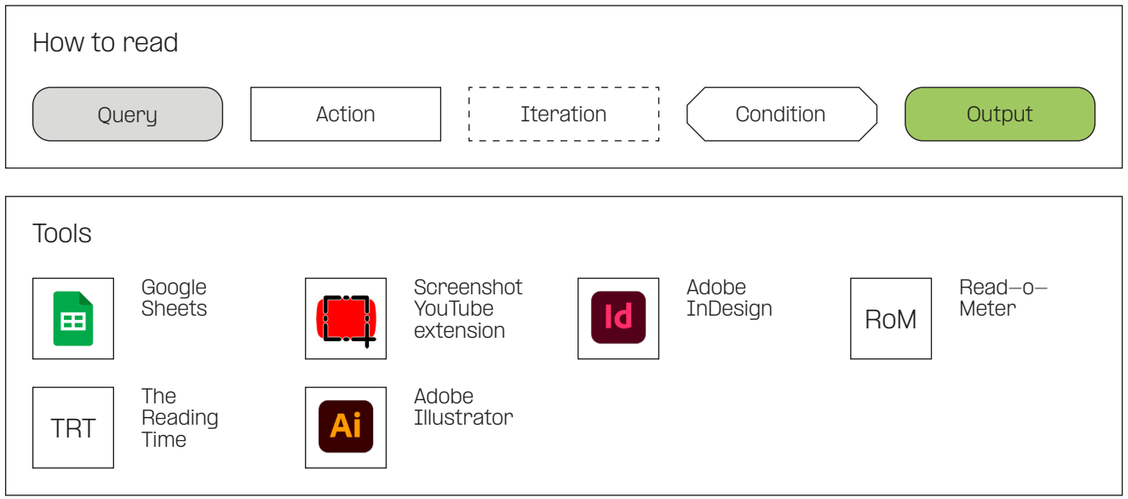
Finding 4

If included, most adverts don't give enough time to read emissions and consumption information

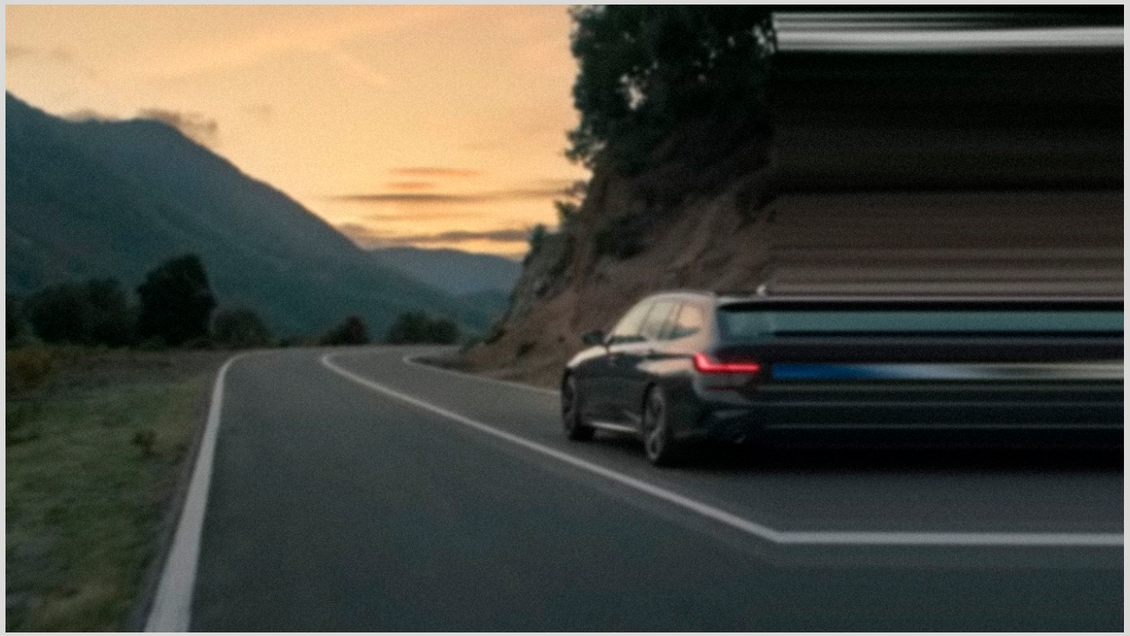
Not all car brands place emissions and consumption information within the adverts, and the ones that do, place it right at the end of them—in a small and hard to read block of text. In many of these cases, the screen time is shorter than the average reading time required read all of it. Thus, one must pause the video if interested in checking such information.


Data analysis
Research question
For every video
Analyse overall storyboard
Categorise them depending on the valorisation given to the advertised model (ironic, utopic, or practical)*
Find re–occurring patterns
For each pattern
Save representative frames
Final visualisation


Data analysis
Analyse portions with regulation–related information
Save representative frames
Calculate screen times
Calculate estimated reading times
RoM
TRT
Spreadsheet prep
Columns: Screenshot, File name, Brand, Model, Text, Start, End, Video length, Screen time, Median reading time, Reading time range
Draft visualisation
Final visualisation


How to read
Query
Action
Iteration
Condition
Output
Tools
Google Sheets
Screenshot YouTube extension
Adobe InDesign
RoM
Read–o–Meter
TRT
The Reading Time
Adobe Illustrator

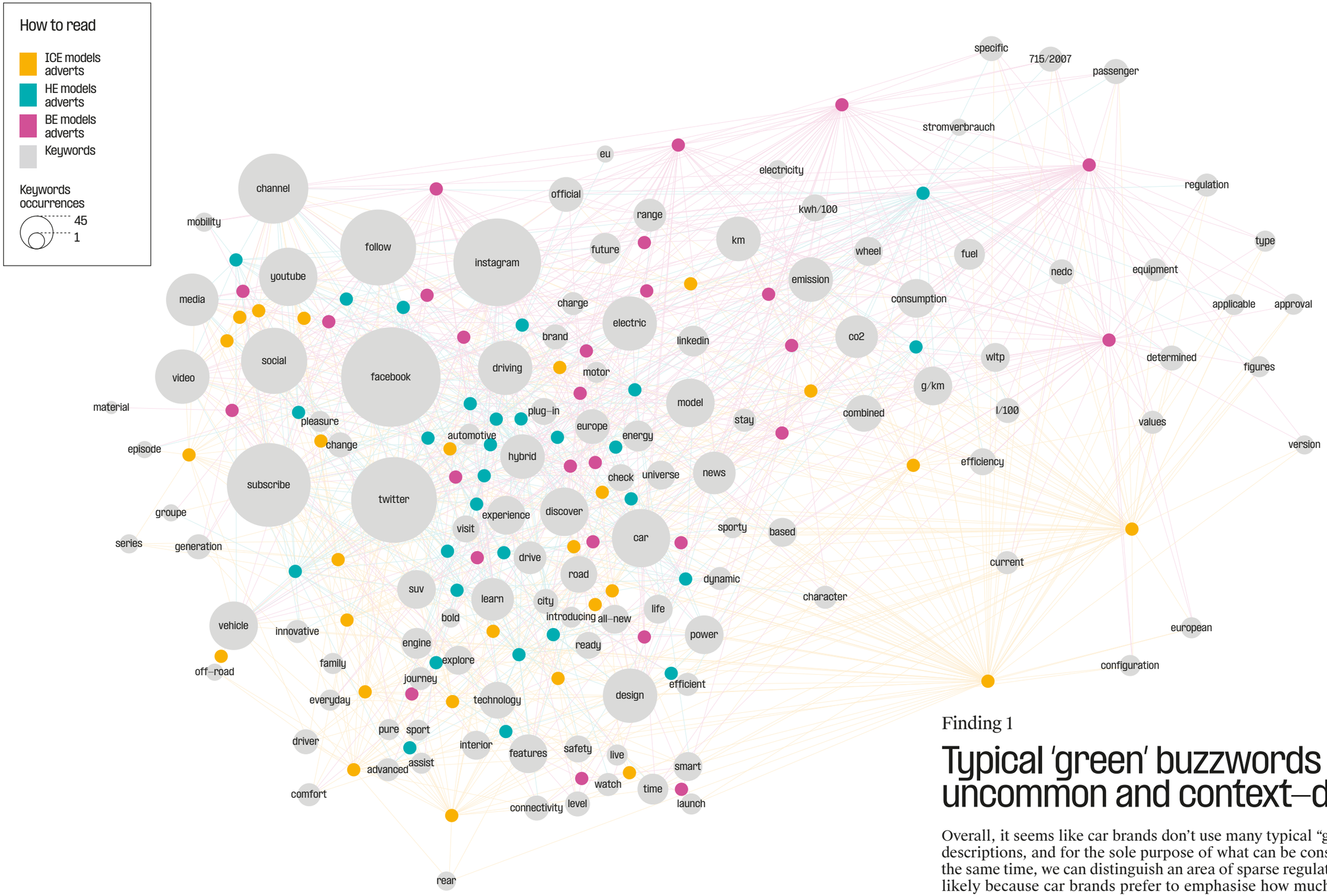
Are there recurring patterns related to sustainability from the video advertisements' descriptions?



To make the advertisements more easily suggestible to users and thus more reachable, car brands use various options provided by YouTube to describe their content. Therefore, We decided to investigate if there is a striking difference across different propulsion types and brands in terms of what kind of language they tend to use, if they refer to typical 'green' buzzwords or regulation-related information, and how frequently if so.

Most common words in the descriptions

Question 3



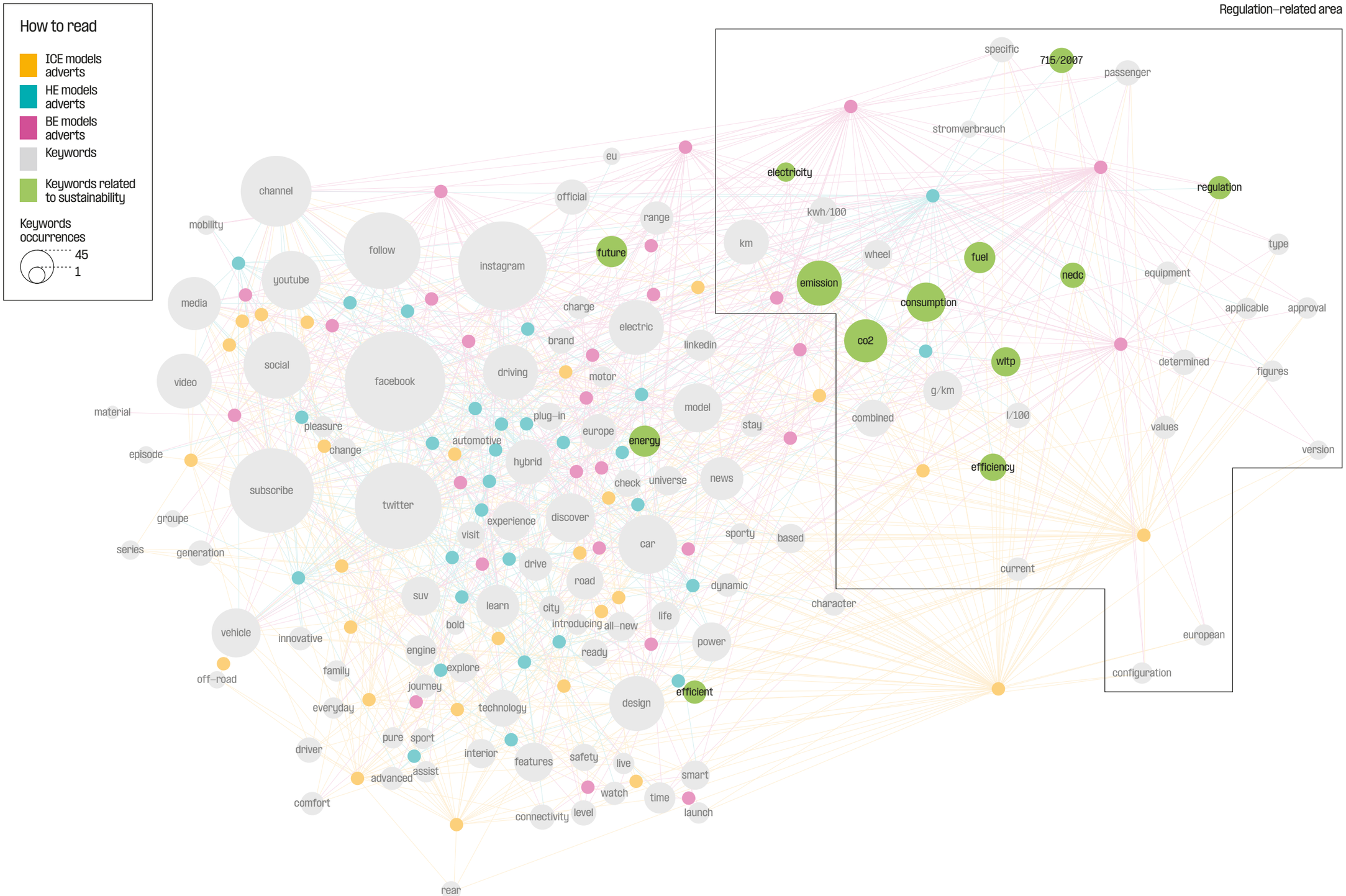
Finding 1

Typical 'green' buzzwords are uncommon and context-dependent

Overall, it seems like car brands don't use many typical "green" buzzwords inside the descriptions, and for the sole purpose of what can be considered as greenwashing. At the same time, we can distinguish an area of sparse regulation-related keywords, most likely because car brands prefer to emphasise how much they're respecting current emission and fuel consumption standards or legislation instead of putting themselves under the spotlight by using bold claims.

Most common words in the descriptions

Question 3



Most common words directly associable to sustainability and their occurrences

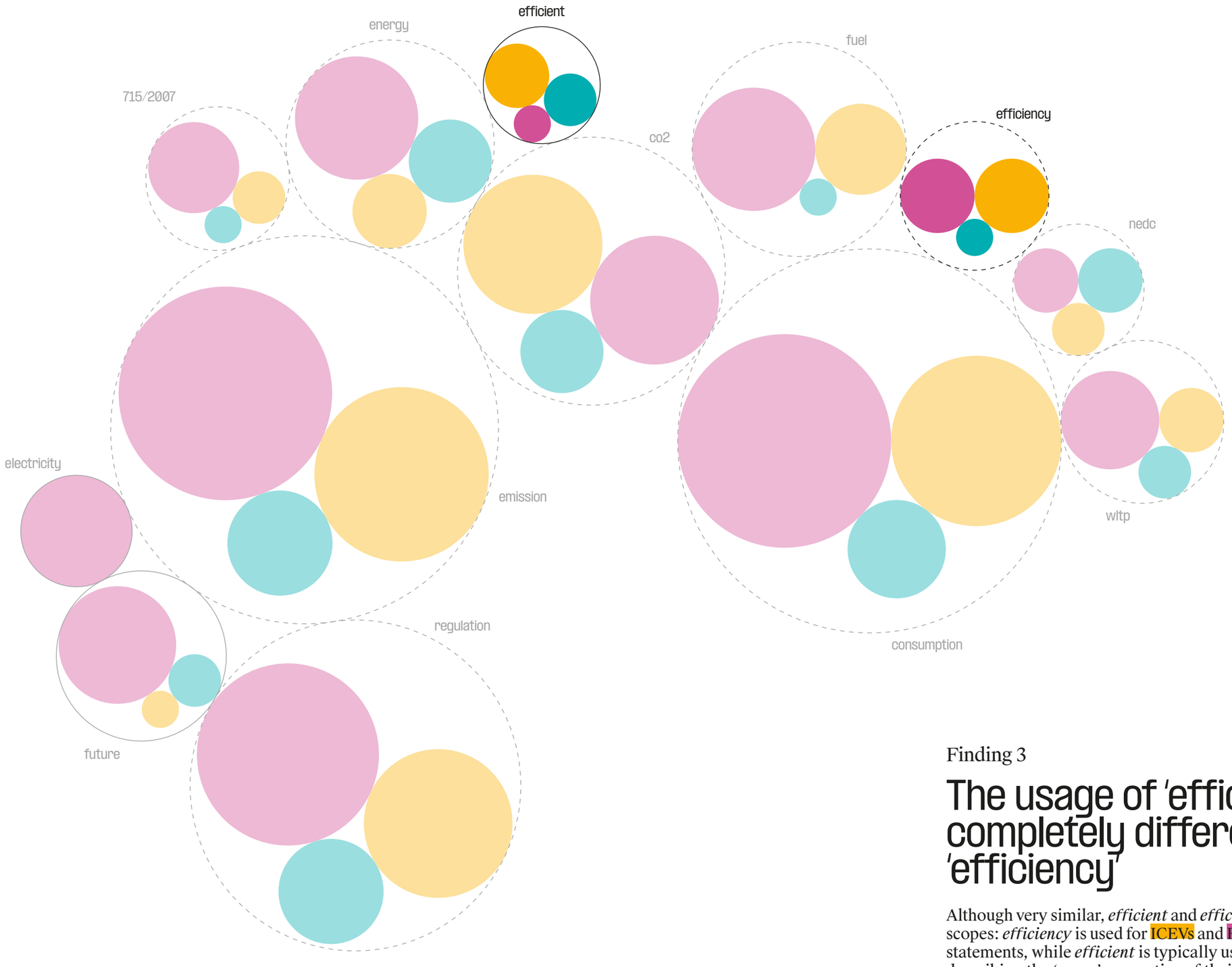
co2	63
consumption	61
emission	48
fuel	31
energy	20
regulation	18
future	13
wltp	12
715/2007	9
efficiency	9
electricity	9
nedc	8
efficient	6

Distribution of keywords related to sustainability concerns per propulsion

Finding 2

ICEVs and BEVs share the same amount of regulation–related keywords

ICEVs and BEVs tend to receive the same attention in terms of regulation compliance statements across different brands, while HEVs don't.

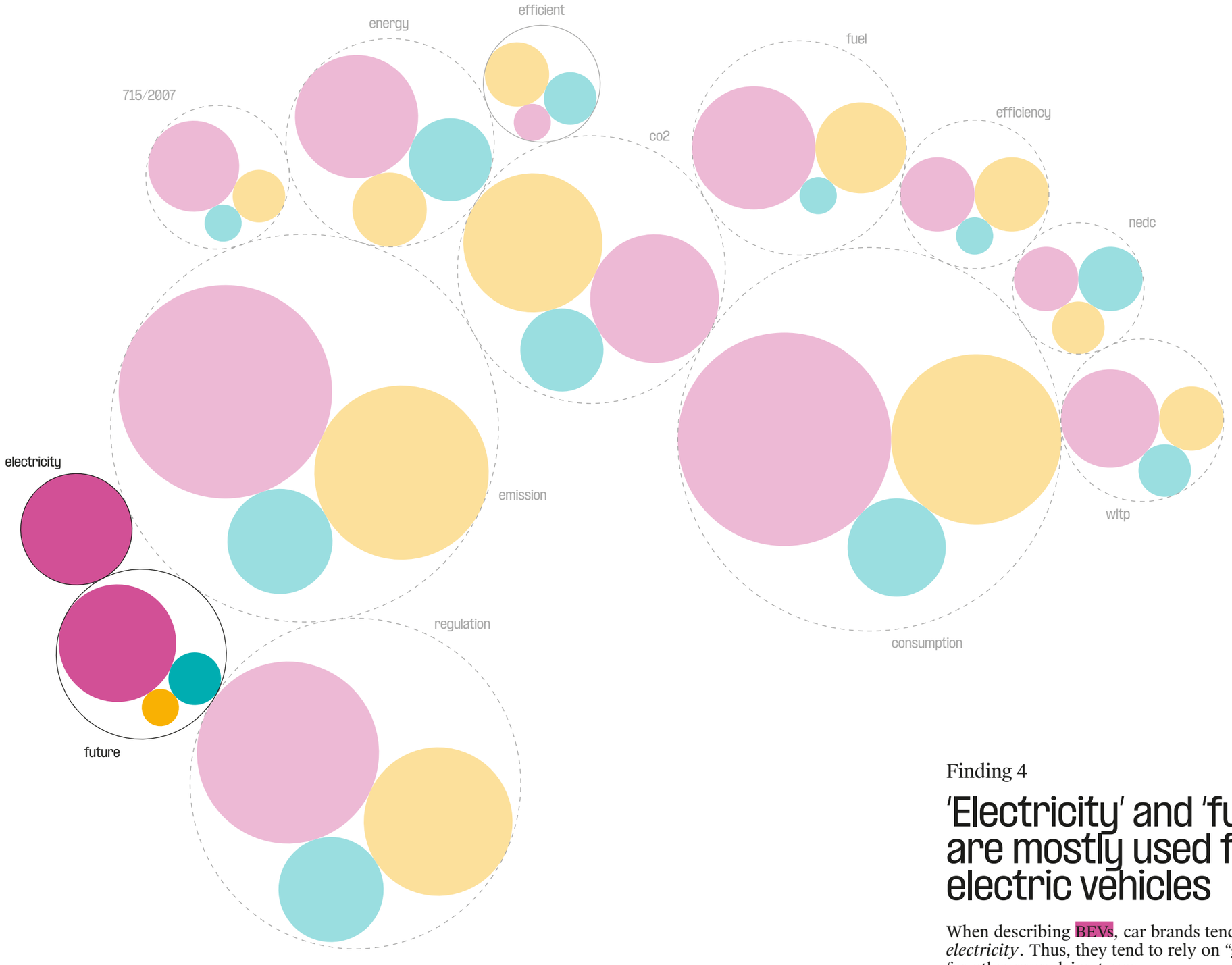


Finding 3

The usage of 'efficient' is completely different from 'efficiency'

Although very similar, *efficient* and *efficiency* satisfy entirely different scopes: *efficiency* is used for ICEVs and BEVs in regulation compliance statements, while *efficient* is typically used for ICEVs and HEVs when describing the 'green' properties of their engines.

Distribution of keywords related to sustainability concerns per propulsion

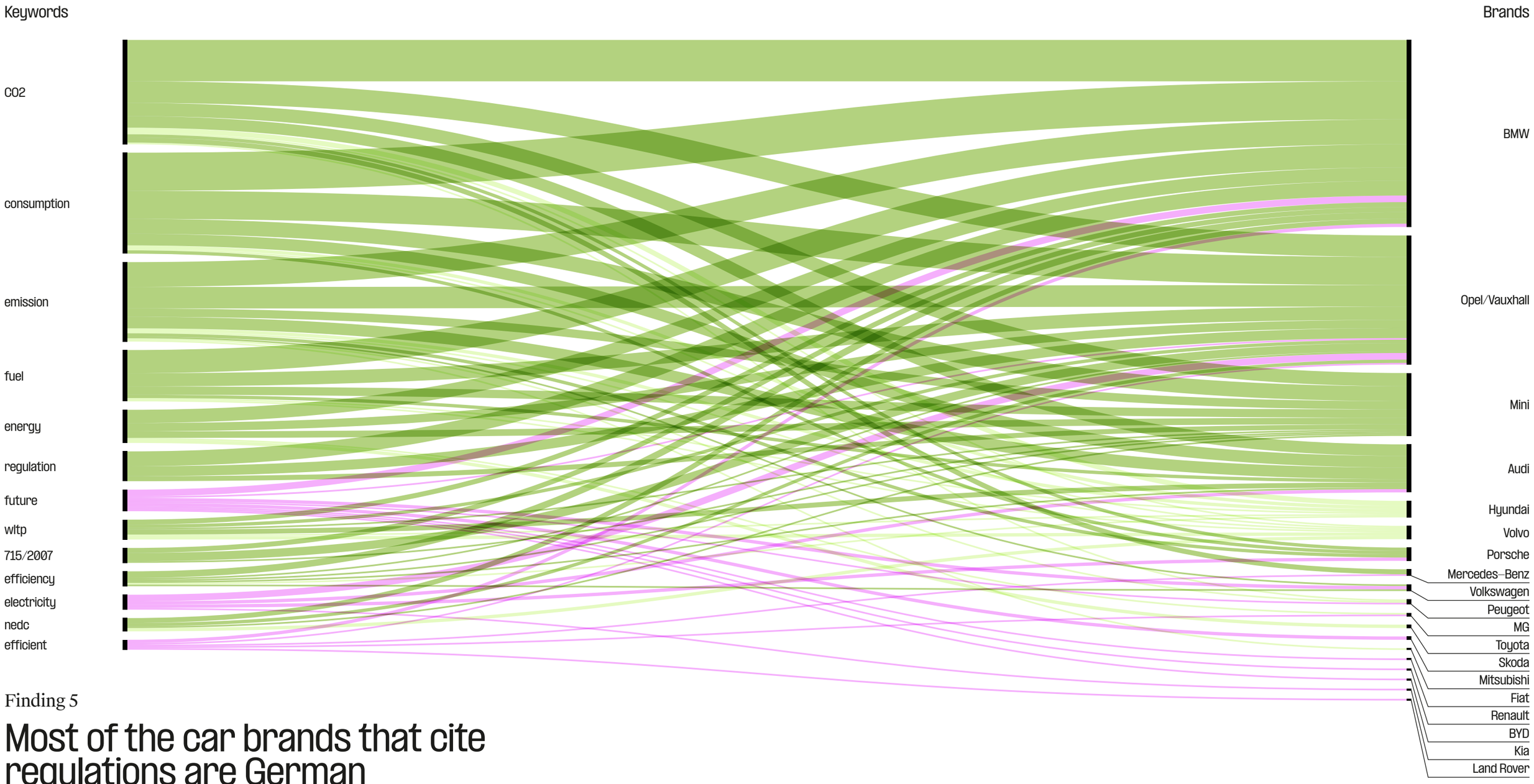


Finding 4

'Electricity' and 'future' are mostly used for electric vehicles

When describing BEVs, car brands tend to use the words *future* and *electricity*. Thus, they tend to rely on "green" buzzwords more than for other propulsion types.

Distribution of keywords related to sustainability concerns per brand



Finding 5

Most of the car brands that cite regulations are German

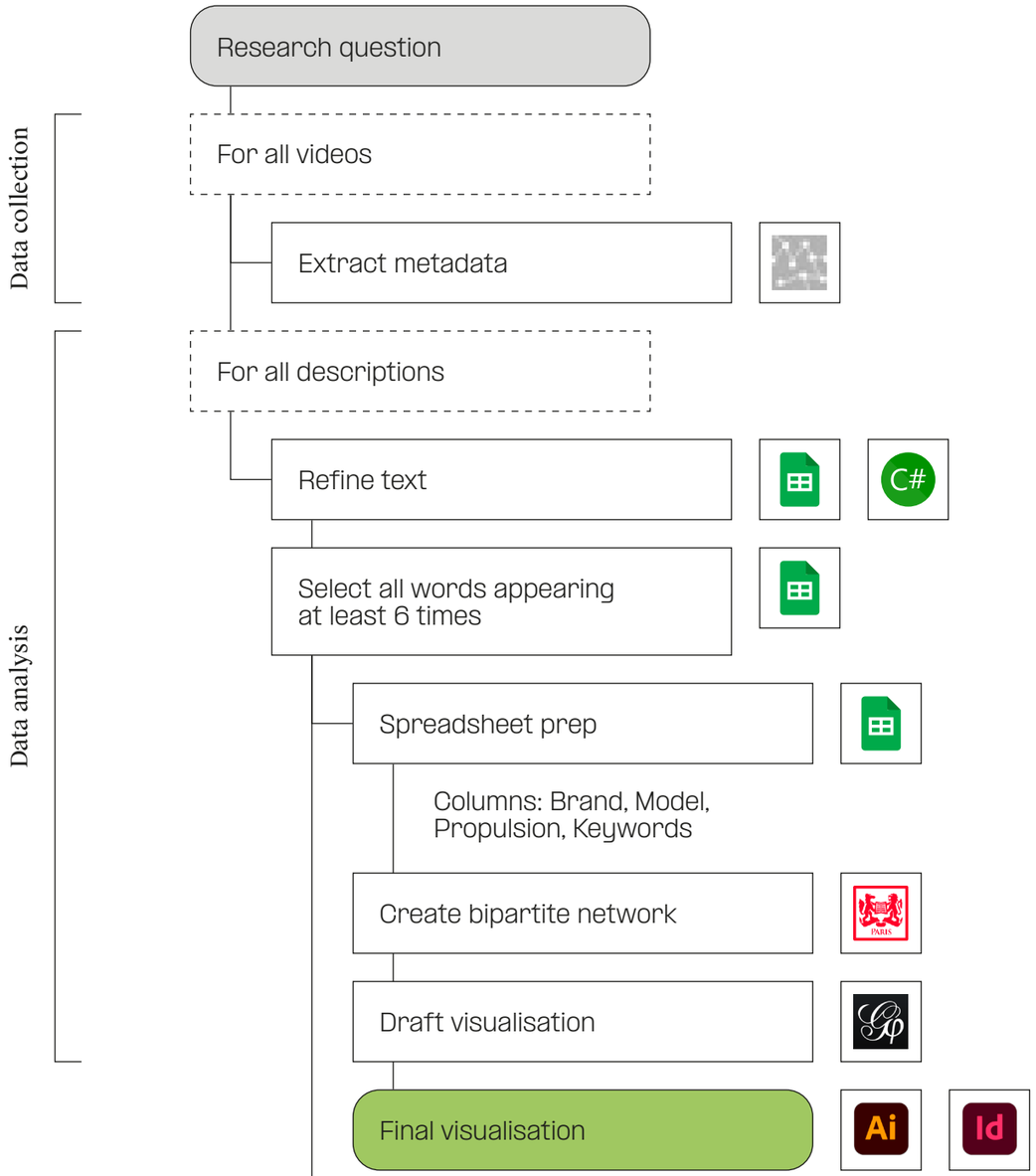
Many car brands that are headquartered in Germany tend to stress how much they respect regulations—especially BMW, Mini, Opel and Audi. It could be related both to local legislation, but also attributed to the amount of pressure that rose after the controversies that generally affected them in the past and still do today. It isn't the case for all of them, though, hence why we can see how Porsche, Mercedes-Benz, and Volkswagen generally prefer to maintain a lower profile.

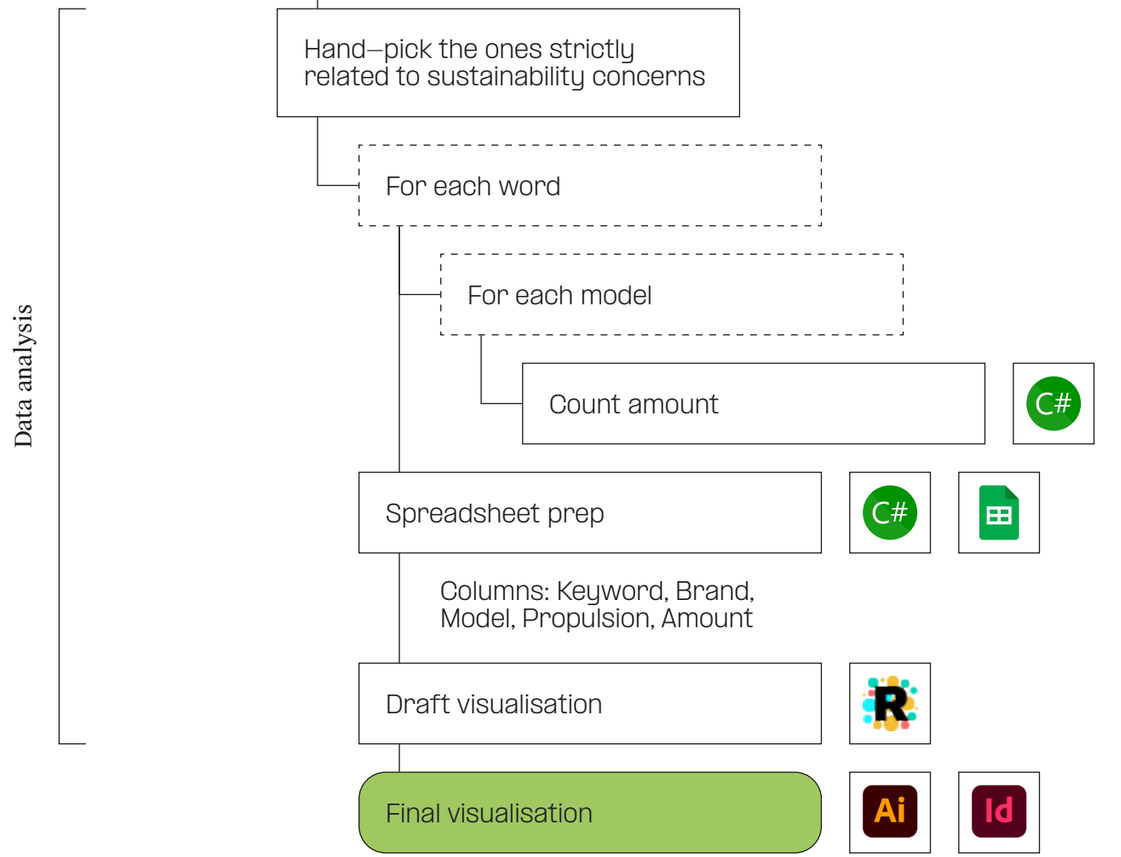
How to read

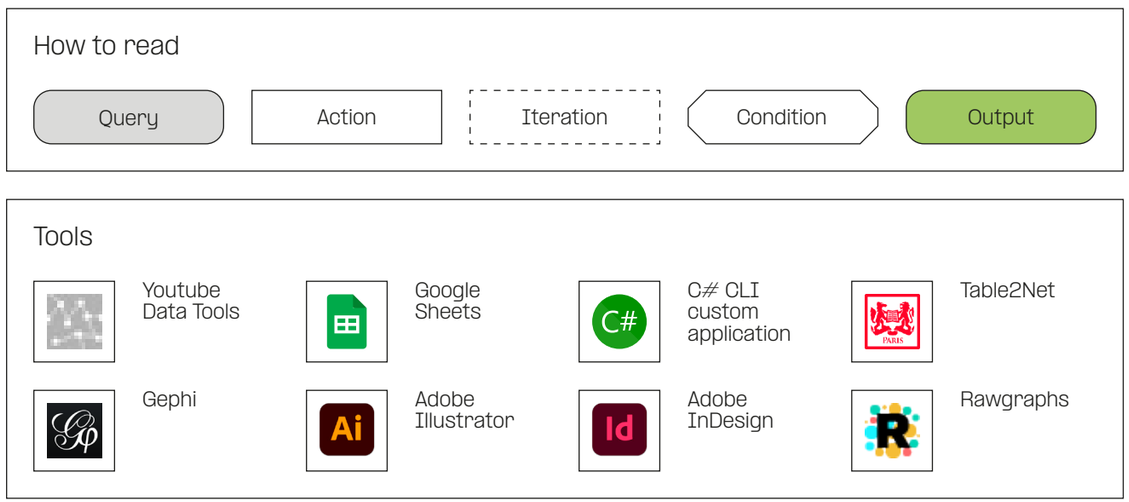
Use of regulation–related keywords by German brands

Use of regulation–related keywords by non–German brands

"Green" buzzwords


Research question
Data collection
For all videos
Extract metadata
For all descriptions
Refine text
Select all words appearing at least 6 times
Data analysis
Spreadsheet prep
Columns: Brand, Model, Propulsion, Keywords
Create bipartite network
Draft visualisation
Final visualisation


Data analysis
Hand–pick the ones strictly related to sustainability concerns
For each word
For each model
Count amount
Spreadsheet prep
Columns: Keyword, Brand, Model, Propulsion, Amount
Draft visualisation
Final visualisation


How to read
Query
Action
Iteration
Condition
Output
Tools
Youtube Data Tools
Google Sheets
C# CLI custom application
Table2Net
Gephi
Adobe Illustrator
Adobe InDesign
Rawgraphs

More subtle than expected

To sum it up, we couldn't find glaring cases of greenwashing in the selected advertisements. Nevertheless, we noticed how most brands prefer to show their models in a stereotypical, de-anthropised setting, rather than in realistic scenarios. In particular, ICEVs tend to be associated with natural, wild and adventurous landscapes (with the vehicles perfectly integrated as a part of them), while HEVs and BEVs are often exalted for their high-tech qualities, and regarded as the future of the whole sector. Moreover, we noticed the ubiquity of trees and greenery in the backgrounds of the videos to make them look greener across all settings and propulsion types.

This trend—from a narrative and rhetorical standpoint—is also true: most car brands decide to make use of more subtle strategies to associate their models to the concept of sustainability—especially for ICEVs—and often disclose emissions and consumption information, but not for enough time.

From the videos' descriptions, we also understood that most brands tend to limit how much they talk about sustainability by stressing the fact that they're respecting emissions standards and generally avoiding bold claims or "green" buzzwords.

References and resources

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Demandt, B. (n.d.). European car sales analysis 2021 – Models. carsalesbase.com. Retrieved from https://carsalesbase.com/european-car-sales-analysis-2021-models/

https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32007R0715

https://en.wikipedia.org/wiki/New_European_Driving_Cycle

https://en.wikipedia.org/wiki/Worldwide_Harmonised_Light_Vehicles_Test_Procedure#cite_note-1