



Chain of thought

- **Visual 1**: Total Distance per Trip (al2 level) = Number of trips x Trip's Distance. | Trip's distance is calculated between the centroids of municipalities using Mapbox API combining longitude and latitude. | Info is filtered according to: Destination = Moss, Mode of Transport = Road.
- **Visual 2**: Total Monthly Distance by road trips = Number of Trips per Month x Trip's Distance.
- Visual 3: Sensors' data are used to calculate: 1) The absolute and percentage share of each vehicle's type to the total trips number. 2) The absolute and percentage share of each fuel's type to the total trips number.
- Visual 4: Information combined by the previous visuals to calculate: 1) Distance of each Vehicle type by Month, 2) Distance of each Fuel type by Month.

3.83M

4 30M

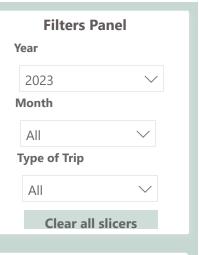
301.98M

<u>Assumptions</u>

- 1 st assumption: the avg distance for internal trips is 1km (Moss to Moss)
- 2nd assumption: the percentage distribution of trips by vehicle and fuel type is calculated using sensors data.

42.63

207,048.23



3

origin_admin _level_2	_	Number of Trips	Trips' Distance (km)	Total Distance (millions km)
Moss	Moss	6,459,633	0.00	0.01M
Oslo	Moss	1,075,072	72.82	78.28M
Vestby	Moss	927,756	22.42	20.80M
Fredrikstad	Moss	752,977	35.34	26.61M
Sarpsborg	Moss	629,500	38.73	24.38M
RÃ¥de	Moss	515,591	15.08	7.77M
VÃ¥ler (Viken)	Moss	499,820	26.21	13.10M
Indre Ã~stfold	Moss	250,652	54.77	13.73M
Nordre Follo	Moss	223,803	50.18	11.23M
Halden	Moss	216,747	71.01	15.39M
Ãs	Moss	170,130	34.54	5.88M
Asker	Moss	150,328	58.76	8.83M

89,898

81 536

12,718,273

Total Monthly Distance by Road (Moss Level)

Number of trips are calculated by Telia's dataset. Distance is between the centroids (al2).

Month	Sum of Trips	Monthly Distance (millions km)
January	960,286	21.23M
February	934,734	21.53M
March	1,080,711	25.50M
April	1,035,791	25.76M
May	1,110,272	27.42M
June	1,051,866	29.59M
July	792,139	23.95M
August	888,649	24.23M
September	919,565	24.89M
October	889,437	24.14M
November	1,470,522	27.01M
December	1,584,301	26.72M
Total	12,718,273	301.98M

Trips per Type of Vehicle (Abs and Percentage).

Absolute and percentage numbers are calculated at the granular level of type of vehicle by using censors' data.

Fuel

Type of Vehicle	January	February	March	April	May	June	July	Augı
1.Personal Car	523,359	483,884	564,155	699,882	800,667	723,809	687,658	838,9
2.Bus	3,504	2,826	2,700	2,210	2,682	2,267	2,214	2,8
3.Heavy Vehicle	1,562	1,387	1,647	2,647	3,225	3,273	3,519	4,0
4.Van	49,985	46,293	57,591	78,531	90,071	80,800	69,962	92,9
5.Total	578,410	534,390	626,093	783,270	896,645	810,149	763,353	938,7

January	February	March	April	May	June	July	Augı
90.48%	90.55%	90.11%	89.35%	89.30%	89.34%	90.08%	89.37
0.61%	0.53%	0.43%	0.28%	0.30%	0.28%	0.29%	0.30
0.27%	0.26%	0.26%	0.34%	0.36%	0.40%	0.46%	0.43
8.64%	8.66%	9.20%	10.03%	10.05%	9.97%	9.17%	9.90
	90.48% 0.61% 0.27%	90.48% 90.55% 0.61% 0.53% 0.27% 0.26%	90.48% 90.55% 90.11% 0.61% 0.53% 0.43% 0.27% 0.26% 0.26%	90.48% 90.55% 90.11% 89.35% 0.61% 0.53% 0.43% 0.28% 0.27% 0.26% 0.26% 0.34%	90.48% 90.55% 90.11% 89.35% 89.30% 0.61% 0.53% 0.43% 0.28% 0.30% 0.27% 0.26% 0.26% 0.34% 0.36%	90.48% 90.55% 90.11% 89.35% 89.30% 89.34% 0.61% 0.53% 0.43% 0.28% 0.30% 0.28% 0.27% 0.26% 0.26% 0.34% 0.36% 0.40%	90.48% 90.55% 90.11% 89.35% 89.30% 89.34% 90.08% 0.61% 0.53% 0.43% 0.28% 0.30% 0.28% 0.29% 0.27% 0.26% 0.26% 0.34% 0.36% 0.40% 0.46%

Distance per Type of Vehicle

Moss

Frogn

Sandefiord

Type of Vehicle	January	February	March	April	Мау	June	July	August	September	October	November	December Total
1.Personal Car	19.21M	19.49M	22.97M	23.02M	24.49M	26.44M	21.58M	21.66M	22.36M	21.52M	24.06M	24.62M 271.30M
2.Bus	0.13M	0.11M	0.11M	0.07M	0.08M	0.08M	0.07M	0.07M	0.08M	0.08M	0.10M	0.09M 1.05M
3.Heavy Vehicle	0.06M	0.06M	0.07M	0.09M	0.10M	0.12M	0.11M	0.10M	0.08M	0.09M	0.10M	0.07M 1.06M
4.Van	1.83M	1.86M	2.35M	2.58M	2.75M	2.95M	2.20M	2.40M	2.37M	2.46M	2.75M	1.95M 28.56M
5.Total	21.23M	21.53M	25.50M	25.76M	27.42M	29.59M	23.95M	24.23M	24.89M	24.14M	27.01M	26.72M 301.98M

Chain of thought

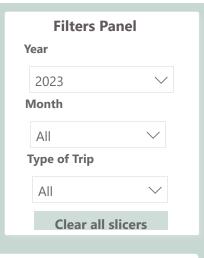
- Visual 1: Total Distance per Trip (al2 level) = Number of trips x Trip's Distance. | Trip's distance is calculated between the centroids of municipalities using Mapbox API combining longitude and latitude. | Info is filtered according to: Destination = Moss, Mode of Transport = Road.
- **Visual 2**: Total Monthly Distance by road trips = Number of Trips per Month x Trip's Distance.
- Visual 3: Sensors' data are used to calculate: 1) The absolute and percentage share of each vehicle's type to the total trips number. 2) The absolute and percentage share of each fuel's type to the total trips number.
- Visual 4: Information combined by the previous visuals to calculate: 1) Distance of each Vehicle type by Month, 2) Distance of each Fuel type by Month.

301,979,753

Assumptions

- 1 st assumption: the avg distance for internal trips is 1km (Moss to Moss)
- 2nd assumption: the percentage distribution of trips by vehicle and fuel type is calculated using sensors data.

207,048.23



origin admin	destination a	Number of Trips	Trins' Distance (km)	Total Distance (millions km)
_level_2	dmin_level_2	rumber of mps	mps bistance (km)	▼
Oslo	Moss	1,075,072	72.82	78,281,368
Fredrikstad	Moss	752,977	35.34	26,608,701
Sarpsborg	Moss	629,500	38.73	24,382,424
Vestby	Moss	927,756	22.42	20,802,145
Halden	Moss	216,747	71.01	15,392,071
Indre Ã~stfold	Moss	250,652	54.77	13,726,957
VÃ¥ler (Viken)	Moss	499,820	26.21	13,098,783
Nordre Follo	Moss	223,803	50.18	11,230,211
Asker	Moss	150,328	58.76	8,833,875
RÃ¥de	Moss	515,591	15.08	7,774,081
Ãs	Moss	170,130	34.54	5,876,971
Hvaler	Moss	43,795	100.89	4,418,346
Sandefjord	Moss	81,536	52.79	4,304,612
Hllensaker	Moss	36 975	106.65	3 9/13 //95

12,718,273

Total Monthly Distance by Road (Moss Level)

Number of trips are calculated by Telia's dataset. Distance is between the centroids (al2).

Month	Sum of Trips	Monthly Distance (millions km)
January	960,286	21,227,401
February	934,734	21,528,553
March	1,080,711	25,495,679
April	1,035,791	25,761,486
May	1,110,272	27,424,459
June	1,051,866	29,594,871
July	792,139	23,950,191
August	888,649	24,234,653
September	919,565	24,889,985
October	889,437	24,144,299
November	1,470,522	27,012,824
December	1,584,301	26,715,352
Total	12,718,273	301,979,753

Trips per Type of Fuel (Abs and Percentage).

Absolute and percentage numbers are calculated at the granular level of type of vehicle by using censors' data.

Vehicle

Fuel	January	February	March	April	May	June	July	Aug
Diesel	289,908	269,405	326,495	431,046	491,000	453,196	424,415	523
Electric	108,726	99,667	112,971	115,912	134,843	123,476	119,366	147
Gasoline	124,996	117,763	136,916	191,068	229,244	196,610	175,724	219
Hybrid Diesel	1,962	1,732	1,779	2,056	2,082	1,765	1,901	1
Hybrid Gasoline	55,226	49,214	52,675	57,623	62,936	56,501	59,411	70
Other	143	120	86	161	214	157	110	

Fuel	January	February	March	April	May	June	July	Aug
Diesel	49.9%	50.1%	51.7%	54.0%	53.4%	54.5%	54.3%	54
Electric	18.7%	18.5%	17.9%	14.5%	14.7%	14.8%	15.3%	15
Gasoline	21.5%	21.9%	21.7%	23.9%	24.9%	23.6%	22.5%	22
Hybrid Diesel	0.3%	0.3%	0.3%	0.3%	0.2%	0.2%	0.2%	(
Hybrid Gasoline	9.5%	9.1%	8.3%	7.2%	6.8%	6.8%	7.6%	7
<u></u>	2 22/	2 224	2 22/	2.22	2 224	0.007	2 224	,

Distance per Type of Fuel

Total

1 71													
Fuel	January	February	March	April	May	June	July	August	September	October	November	December	Total
Diesel	10,592,782	10,782,467	13,193,726	13,917,607	14,631,241	16,126,244	13,016,351	13,166,769	13,307,593	13,347,335	15,156,405	15,980,116	163,758,717
Electric	3,972,677	3,988,999	4,565,180	3,742,565	4,018,168	4,393,693	3,660,827	3,713,662	3,815,461	3,676,447	4,307,662	5,130,010	48,602,485
Gasoline	4,567,157	4,713,260	5,532,802	6,169,201	6,831,210	6,996,047	5,389,266	5,525,424	5,908,442	5,256,505	5,444,055	3,953,056	66,343,042
Hybrid Diesel	71,688	69,320	71,890	66,384	62,041	62,805	58,302	49,020	50,102	52,145	63,057	39,558	701,781
Hybrid Gasoline	2,017,871	1,969,705	2,128,607	1,860,531	1,875,421	2,010,496	1,822,071	1,775,929	1,804,229	1,808,611	2,038,809	1,610,342	22,524,063
Other	5,225	4,803	3,475	5,198	6,377	5,587	3,374	3,850	4,158	3,256	2,835	2,269	49,665
Total	21,227,401	21,528,553	25,495,679	25,761,486	27,424,459	29,594,871	23,950,191	24,234,653	24,889,985	24,144,299	27,012,824	26,715,352	301,979,753