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CO_2 on the way to School

English summary of final report assessing the 2007 Norwegian student-based web campaign

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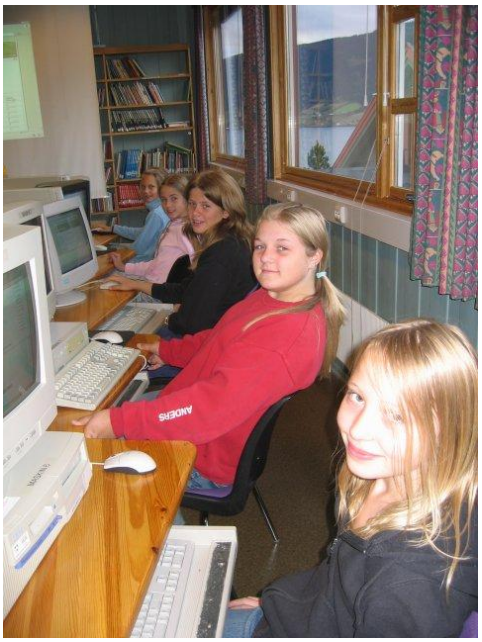

Preface

Student research campaigns (*forskningskampanjer*) have been an annual event in connection to Research Days (*Forskningsdagene*) since 2003 in Norway. The campaigns invite students from all over the country to participate in a common scientific research event, always connected to a special environmentally related theme – for example *Air Quality in the Classroom* (2003), *Pollution along Roads* (2004), *Bacteria in Drinking Water* (2005), and *The Rain Check* (2006).

The year 2007 was overshadowed by the topic of climate change, and the specific role of humans. The theme for the 2007 campaign fit well into this focus: the release of carbon dioxide in connection with transport of the students to and from school. In contrast to earlier research campaigns, the 2007 campaign placed less weight on measurements and technical activities, and more weight towards consciousness and understanding of the climate problem at the local and global scale. The campaign included (for the first time with such a large participation) a questionnaire related to the students relationship to the climate problem…something which has been traditionally seen as irrelevant to the official climate discussion.

We would like to sincerely thank all of the schools which participated, both the teachers as driving forces, and the students as willing participants. We are certain that the results of the campaign will be of great interest to a large sector of climate researchers. We also thank the Norwegian Directorate for Education and Training (*Utdanningsdirektoratet*), and the Norwegian Research Council (*Forskningsrådet*) for the financial support to create the campaign, and in preparation for this report.

NOTE: The original title of the Norwegian report for the 2007 Research Campaign is: *CO_2 på skoleveien, Elevbasert forskningskampanje som del av Forskningsdagene 2007* (Georg Hansen, NILU OR 68/2008). This English summary has directly translated parts of the forenamed document, as well as removed various parts, and included some minor new information/analysis.

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CO_2 on the way to school

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1 Introduction

The 2007 Norwegian Research Campaign "CO_2 on the way to School" was, as in earlier campaigns, carried out in cooperation between the Norwegian Directorate for Education and Training (*Utdanningsdirektoratet*), Research Days (*Forskningsdagene*), the School Laboratory at the University of Bergen (*Skolelaboratoriet*), and the Norwegian Institute for Air Research (*NILU*). The School Laboratory handled the most important task of designing and managing the campaign site at www.miljolare.no which guided the whole campaign.

The campaign was geared to draw attention towards emissions of the most important human influenced climate gas, carbon dioxide - in connection with students transport to and from school. Simultaneously participants (teachers and students) were guided towards increasing knowledge of the general climate problem and to reflect over one's own behaviour and various options for local solutions. As with previous campaigns, this campaign included data collection at the class/student level, and was entirely facilitated by the campaign website for obtaining guidance and entering the collected data, as well as later data analysis.

The goals for the campaign as it was designed are as follows:

- Become aware that emissions of the climate gas CO_2 leads to climate changes
- Teach how one can measure CO_2
- Gain insight into how CO_2 emissions can be reduced
- Become known with local authorities and which climate initiatives the municipalities have set as priorities
- Gain insight into the democratic process by recommended solutions within the municipality to reduce emissions of climate gasses.
- Develop and understanding of the connections between human activities, climate change, and sustainable development

A secondary goal of the campaign was to provide the various climate related research institutes new data both regarding Norwegian student's transportation routes to and from school, and from students behaviour and knowledge related to the climate and climate policy.

2 Methods and participants

The methods for participation were outlined in the following webpage at miljolare.no (in Norwegian):
http://www.miljolare.no/aktiviteter/land/ressurs/lr23/?vis=veiledning

This guidance page included a description of the goals, equipment needed, registration instructions, cooperative partners for the campaign, background, discussion questions, and most importantly, the complete instructions to complete the activity.

The campaign activity involved three primary elements:

1. Through web-based tools, the students measured the length of one's own school route, and then through the miljolare.no webpage each student calculated the CO_2 emissions based upon the transportation method used.
2. The students answered a web questionnaire on miljolare.no in relation to their reflection concerning school route safety, climate consciousness, and assessment of Norwegian climate policy.
3. The students then made recommendations on miljolare.no for climate policy solutions for their own community, and what an individual can also do on their own.

These steps were all electronically compiled at the miljolare.no website at the following page: http://www.miljolare.no/data/elev/, and all data entered in each of the above steps was associated with each students particular school, and individual class. A copy of the web-based form used for the above three steps of the campaign can also be found in Appendix A.

2575 students from 86 different schools participated in the campaign, all from varying regions of Norway, with a relatively equal distribution (see Figure 1, and Table 1 below). All ages of students from 5^{th} to 10^{th} grade (10 to 18 years old) in primary/secondary school were represented, as well as the first two levels of high school (see Table 2 below),

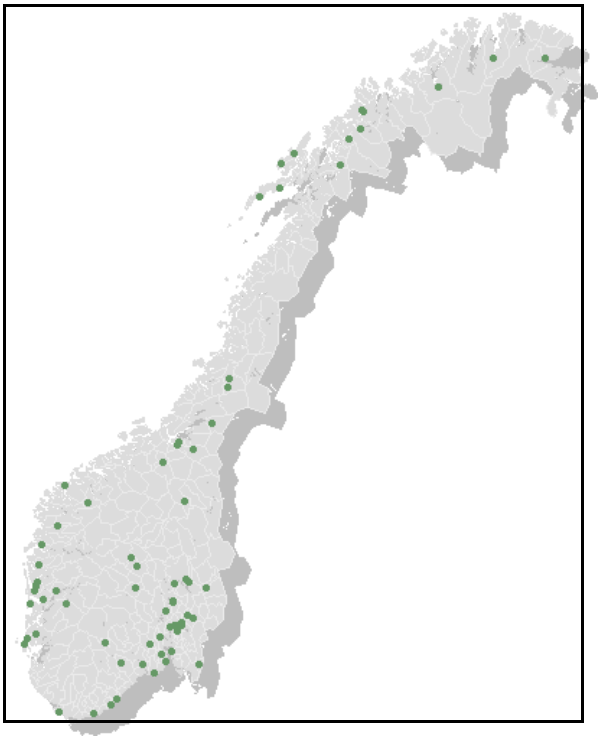


Figure 1: Map of participating schools.

Table 1: Number of participating schools and students by region.

Region	# of Schools	# of Students
Akershus	9	177
Aust-Agder	3	86
Buskerud	4	225
Finnmark	4	61
Hedmark	6	196
Hordaland	9	300
Møre og Romsdal	3	55
Nordland	5	103
Nord-Trøndelag	2	42
Oppland	6	140
Oslo	6	302
Rogaland	3	45
Sogn og Fjordane	4	92
Sør-Trøndelag	4	92
Telemark	5	148
Troms	7	131
Vest-Agder	2	63
Vestfold	3	93
Østfold	1	24

Table 2: Age distribution of participating students.

Born	#
1989	(8)
1990	(16)
1991	(169)
1992	(226)
1993	(281)
1994	(336)
1995	(379)
1996	(446)
1997	(371)
1998	(85)
1999	(35)
2000	(19)
2001	(4)

3 Results

Results from the campaign are broken down into the three activities and associated information collected from the students: measurement data, questionnaire results, and recommendations.

3.1 Measurement Results

The students inserted their distance to school and various transportation means on the campaign website, which in turn calculated the CO_2 emissions. The data results show (see Table 3 and Table 4 below) that more than 42% of the participating students walk to school, while 26% bike to school, in other words, more than 2/3 of the students do not emit CO_2 on their way to school. In addition, approximately 30% use public transportation, especially the bus, while the portion of CO_2 intensive modes such as taxis and cars made up approximately 15%.[1]

[1] The total sums to more than 100% due to the fact that 15% of students use more than one mode of transportation on their route to school.

Table 3: Percentage and total number of students for each transportation mode.

Transportation means	%	#
By foot	42.2%	(1003)
Bicycle	26.3%	(624)
Moped	0.8%	(18)
Motorcycle/snowscooter	0.2%	(5)
Personal car	12.3%	(292)
Taxi	2.2%	(53)
Bus	27.9%	(662)
Diesel train	0.1%	(3)
Car ferry	0.1%	(3)
Local commuter boat	0.1%	(2)
Electric car	0.2%	(4)
Electric train	2.4%	(57)
Other	0.8%	(19)

Table 4: Length of school routes for each mode, corresponding CO_2 contribution and calculation.

Transportation Means	Length (km)	CO_2 (kg)	Calculation (kg/pkm)*
By foot	1058.7	0	0
Bicycle	1031.9	0	0
Moped	38.5	2.3	.06
Motorcycle/snow scooter	9	0.9	.10
Personal car	1184.9	130.3	.11
Taxi	406.5	85.4	.21
Bus	6082	364.9	.06
Diesel train	58.4	4.1	.07
Car ferry	11.2	1.3	.12
Local communter boat	5.9	3.1	.53
Electric car	25.5	0.1	.0004
Electric train	750.3	1.8	.002
Other	28.1	0	0
Total	**10690.8**	**594.2**	

*Fossil fuel related calculations derived from SSB document: *Direkte energibruk og utslipp til luft fra transport i Norge 1994 og 1998* (Holtskog, 2001). Electric car and train calculations derived from www.klimaloftet.no

The student CO_2 emissions ranged from 80 g/km in Finnmark to 30g/km in Hordaland, while the average CO_2 emission per student per year on their way to school is approximately 95kg (see Table 5 below), a value that is less than 1% of the yearly emission rate per inhabitant in Norway.

Table 5: Students average route length and annual CO_2 emission by region.

Region	# of Schools	# of Students	School route avg. length (km)	CO_2 kg/year/student	CO_2 g/km
Finnmark	4	61	4.4	134.4	**80**
Møre og Romsdal	3	55	4.6	135.4	**77**
Troms	7	131	10.3	282.3	**72**
Sør-Trøndelag	4	92	2.9	79.5	**72**
Hedmark	6	196	4.4	114.3	**68**
Sogn og Fjordane	4	92	7.4	184.6	**66**
Nordland	5	103	4.3	101.1	**63**
Telemark	5	148	7.3	166	**60**
Nord-Trøndelag	2	42	7	151	**57**
Vest-Agder	2	63	5.3	115	**57**
Østfold	1	24	0.9	18.5	**55**
Buskerud	4	225	3.3	67.8	**55**
Aust-Agder	3	86	4.1	82	**53**
Oppland	6	140	2.9	52.7	**47**
Oslo	6	302	6.2	93.9	**40**
Akershus	9	177	2.1	31.8	**40**
Vestfold	3	93	3.4	51.5	**39**
Rogaland	3	45	1.8	25.1	**36**
Hordaland	9	300	2.3	26.3	**30**

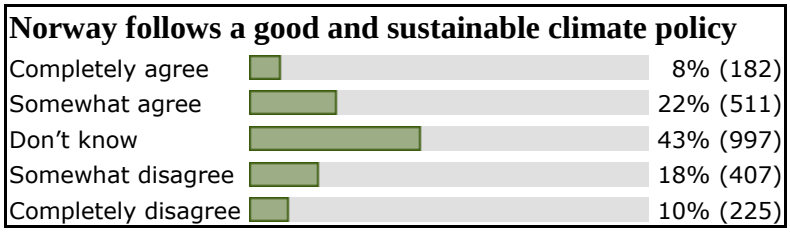
3.2 Questionnaire Results

A majority of the students (59%) thought that they have a completely safe or fairly safe route to school, where only 34% are a part of the Norwegian "School Ride Directive". A similar large majority seldom thinks about the role of cars in relation to the climate problem, although there was a stronger consciousness of this issue with students in the larger cities. When it concerns Norwegian climate policy most students (more than 40%) did not have an opinion, although there was a weak sign that those that did have an opinion, where mostly positive of Norwegian climate policy. The proportion of those that didn't have an opinion to this question surprisingly was not determined by age – there was not a greater occurrence of "no opinion" at the younger ages than the older.

My school route is safe

Completely agree	33%	(759)
Somewhat agree	26%	(598)
Don't know	11%	(258)
Somewhat disagree	19%	(439)
Completely disagree	12%	(276

I seldom think that car emissions can pollute the environment



The miljolare.no site also allows for interesting data comparison and analysis between and within the results. For example, the Norwegian report this summary is based on broke down some of the questionnaire results further to see the differences between girl and boy responses, as well as differences in regional responses. The gender differences are minimal, but some of the regional differences are interesting, and the consciousness of climate issues can be seen as much greater in some areas of the country than others.

3.3 Student Recommendation Results

There were a total of 1903 recommendations received from the 2375 participating students, equalling an 80.1% response rate to this section (see Table 6 below). Broken down into the region level, the response rates varied from 37% (Aust-Agder) to 98% (Rogaland).

Table 6: Table 6: Student recommendation response rate by region.

Region	# Students	# giving recommendations	Answer %	Don't know/no comment/joke	% of answers
Akershus	177	138	78	4	2,9
Aust-Agder	86	32	37	0	0,0
Buskerud	225	160	71	1	0,6
Finnmark	61	54	89	6	11,0
Hedmark	196	179	91	5	2,8
Hordaland	300	244	81	2	0,8
Møre og Romsdal	55	40	73	2	5,0
Nordland	103	69	67	10	14,5
Nord-Trøndelag	42	25	60	1	4,0
Oppland	140	126	90	2	1,6
Oslo	302	277	92	6	2,2
Rogaland	45	44	98	2	9,0
Sogn og Fjordane	92	66	72	0	0,0
Sør-Trøndelag	92	54	59	2	3,7
Telemark	148	131	89	5	3,8
Troms	131	108	82	17	15,7
Vest-Agder	63	55	63	1	1,8
Vestfold	93	87	94	4	4,6
Østfold	24	14	58	1	4,2

The results from the questionnaire also show that it is obvious which solutions the students think are necessary to reduce climate gas emissions at the local and individual level (see Table 7 below). A large majority recommended that one should walk or bike more, or use public transportation – both for themselves as students and for adults as workers. They are in other words adjusted to making their own contributions and expect the same of their parents and other adults. The students also point to the need for a wide range of improvements, like better and cheaper public transportation and construction of pathways for walking and biking. Some of the students also recommended some stronger (compulsorily) measures, like increasing the price of fuel, vehicles, and tickets – and even limiting driving permits. The list of student recommendations covers almost everything that has also been recommended by experts, and shows that there is a great potential among younger students to help create a stronger climate policy than which is practiced today.

Table 7: Student recommendations for possible solutions and number of occurrences per category.

Student recommendations (compiled into the following categories)	Number of occurrences
Bike more (students, workers)	563
Walk more (students, workers)	559
Use more bus, train, trolley	383
Buy/use more environmental friendly cars (especially electric cars)	373
Drive cars less	327
Better public transportation (new routes, more stops, more departures)	234
Cheaper or free public transportation (especially bus)	221
More/better bike paths and walkways	154
Collective driving (to work, training, school)	119
Less trash, better sorting and recycling	75
More environmentally friendly public transportation (electric and natural-gas driven buses)	73
Raised gas prices	64
Save electricity (especially shower less, and turn off lights)	63
Use environmentally friendly fuels (especially biodiesel)	45

4 Discussion and Conclusion

The primary goal of the 2007 Research Campaign was to estimate the climate related effects of students transport to school, while simultaneous raising the consciousness around climate problems with Norwegian students. The campaign produced interesting results which should be of interest to those responsible for both local and national climate policy initiatives:

- A majority of the students can be labelled as "environmentally friendly" concerning their carbon footprint of their transport to and from school - because they walk, bike, or take public transportation – so the CO_2 emissions in this regard produces less than 1% of the average CO_2 emission per inhabitant in Norway

- However, a large majority of students do not understand, or periodically relate to the fact that vehicle emissions pollute the environment. So, the students on average have a small CO_2 footprint during their travels to school, but they do not regularly think of the fact whether they are polluting the environment or not.
- Almost one half of the students don't understand Norwegian national climate policy, which should be taken as a sign for future teaching plans in the classroom.
- Based on the students own personal recommendations, they are generally open for suitable changes to reduce emissions, and they expect the same conditions to apply to adults.
- The recommendations also show that students are well informed on possible (conventional) climate solutions, and many wish to be active on this front. This demonstrates a large potential in the student population which could be mobilized and utilized for future climate policy initiatives.

The 2007 campaign can be seen as a successful effort for raising students consciousness of their carbon footprint, and a unique project to encourage students own reflections upon their personal impact to climate change. Future research campaigns should build upon the knowledge gained from this campaign, and widen the opportunities for deeper environmental education and research where necessary.

It is recommended that results from the campaign, and further data analysis be published in an appropriate professional journal and presented to the public. For further information, results, and analysis regarding the campaign, visit the following campaign websites (in Norwegian):
http://www.miljolare.no/kampanjer/forskningskampanjen/2007/
http://www.miljolare.no/data/ut/land/ressurs/lr23/

Appendix A

Student Data Form and Questionnaire

PART 1

Navn:			
How did you get to school today?		**Checkmark**	**How long is your school route in km? (one way)**
By walking			
With a bike			
With a moped			
With a motorcycle/snow scooter			
With a personal car			
With a Taxi			
With a bus			
With a diesel train			
With a car ferry			
With a local commuter boat			
With an electric car			
With an electric train			
Other method (specify)			

PART 2

I follow the national "school ride directive"	Yes		No	

I seldom think that emission from traffic can pollute the environment.							
Completely agree		Somewhat agree		Somewhat disaggre		Completely disagree	

My school route is safe.							
Completely agree		Somewhat agree		Somewhat disaggre		Completely disagree	

Norway conducts a good and sustainable climate policy.							
Completely agree		Somewhat agree		Somewhat disaggre		Completely disagree	

What can be done to reduce CO2 emissions in your local community? (Your answer for this question will be sent to your local county goverment).

Appendix B

Overview of Participating Schools

School	Municipality	# Students	School route length km (avg)	CO_2 kg/year/student	CO_2 g/km
Lesterud skole	Akershus (Bærum)	1	4.2	335.2	**210**
Kunes skole	Finnmark (Lebesby)	4	13.5	1037.4	**202**
Årengen skole	Hedmark (Ringsaker)	20	4.5	267.6	**156**
Vågan Montessoriskole	Nordland (Vågan)	13	2	72.3	**95**
Ulstein ungdomsskule	Møre og Romsdal (Ulstein)	16	3.6	123.2	**89**
Sunnylven skule	Møre og Romsdal (Stranda)	19	5.2	174.8	**89**
Kolbeinsvik skule	Hordaland (Austevoll)	20	2.2	72	**88**
Ulnes skule	Oppland (Nord-Aurdal)	9	2.8	88.3	**82**
Breivika videregående skole	Troms (Tromsø)	14	13	391.1	**79**
Hemne videregående skole	Sør-Trøndelag (Hemne)	13	3.3	97.3	**78**
Bardufoss videregående skole	Troms (Målselv)	41	20.6	594	**76**
Lavik skule	Sogn og Fjordane (Høyanger)	25	6.9	197.1	**75**
Nypvang Skole	Sør-Trøndelag (Trondheim)	61	3.1	87.9	**75**
Nes Barneskole	Buskerud (Nes)	32	7	196.3	**73**
Hamnvåg Montessoriskole	Troms (Balsfjord)	13	6.7	183.9	**73**
Sander skole	Hedmark (Sør-Odal)	31	4.2	110.3	**70**
Søndeled skole	Aust-Agder (Risør)	25	8.1	214.5	**70**
Ballstad skole	Nordland (Vestvågøy)	13	2.7	71.3	**70**
Selbustrand Skole	Sør-Trøndelag (Selbu)	6	3.5	89	**67**
Vest-Telemark Vidaregåande Skule	Telemark (Tokke)	19	20.7	528.4	**67**
Hesnes Montessoriskole	Aust-Agder (Grimstad)	12	2.6	67.4	**67**
Farsund barne- og ungdomsskole	Vest-Agder (Farsund)	37	3.9	97.3	**66**

Bø Ungdomsskole	Nordland (Bø)	28	9.3	233.2	**66**
Hyllestad skule	Sogn og Fjordane (Hyllestad)	25	11	272.6	**65**
Vålbyen Skole	Hedmark (Våler)	21	4.9	116.9	**63**
Den Franske skolen	Oslo (Oslo)	38	6.3	150.7	**63**
Høydalsmo skule	Telemark (Tokke)	25	6.3	149	**62**
Nordstrand videregående skole	Oslo (Oslo)	20	4.6	108.3	**62**
Alsvåg skole	Nordland (Øksnes)	11	7.4	174.4	**62**
Gratangsbotn skole	Troms (Gratangen)	10	4.4	100.1	**61**
Dalen skule	Sogn og Fjordane (Naustdal)	11	4.7	110.2	**61**
Drangedal ungdomsskole	Telemark (Drangedal)	34	13.1	302.2	**61**
Høylandet Barne- Og Ungdomsskole	Nord-Trøndelag (Høylandet)	9	9.4	213.3	**60**
Høre Skule	Oppland (Vang)	14	7.3	164.8	**60**
Oppstryn skule	Sogn og Fjordane (Stryn)	31	5.7	129.9	**60**
Sandnes skule	Hordaland (Masfjorden)	12	7.1	163	**60**
Jessheim videregående skole	Akershus (Ullensaker)	11	9.4	212.2	**59**
Vang skole	Buskerud (Ringerike)	56	2.7	60.2	**59**
Efteløt Skole	Buskerud (Kongsberg)	15	8.9	199	**59**
Skorgen skule og Tresfjord skule	Møre og Romsdal (Vestnes)	20	4.9	107.6	**58**
Sørreisa Sentralskole	Troms (Sørreisa)	28	5.3	116.6	**58**
Sandfallet ungdomsskole	Finnmark (Alta)	22	5.6	124.6	**58**
Ekeberg skole	Oslo (Oslo)	68	1.8	38.7	**58**
Tynset ungdomsskole	Hedmark (Tynset)	72	6.5	141.4	**58**
Gran Ungdomsskole	Oppland (Gran)	21	6.7	145.6	**57**
Grong Barne- Og Ungdomsskole	Nord-Trøndelag (Grong)	33	6.3	134	**56**
Skjold skule	Rogaland (Vindafjord)	15	3.1	64.4	**55**
Reier skole	Østfold (Moss)	24	0.9	18.5	**55**

Udnes skole	Akershus (Nes)	23	3.6	73.4	**53**
Samfundets skole, avd. Kristiansand	Vest-Agder (Kristiansand)	26	7.3	140.3	**51**
Alta ungdomsskole	Finnmark (Alta)	15	4.5	87	**51**
Revetal ungdomsskole	Vestfold (Re)	35	6.4	118	**49**
Rå skole	Hordaland (Bergen)	46	3.2	54.2	**45**
Abildsø skole	Oslo (Oslo)	60	1.8	26.1	**37**
Bjørnemyr Skole	Akershus (Nesodden)	24	1.3	18.2	**36**
Bjørnholt skole	Oslo (Oslo)	67	14.5	192.4	**35**
Raufoss Skole	Oppland (Vestre Toten)	61	1.3	17.3	**34**
Prestrud Skole	Hedmark (Hamar)	9	0.9	11.6	**34**
Hoberg skole	Hedmark (Stange)	43	1.6	20.6	**33**
Vestbygda skole	Buskerud (Drammen)	122	1.8	21.4	**31**
Gibostad barne- og ungdomsskole	Troms (Lenvik)	3	0.7	7	**28**
Tromstun skole	Troms (Tromsø)	22	2	21.5	**28**
St. Sunniva skole	Oslo (Oslo)	49	6.8	68.5	**27**
Nygård skole	Hordaland (Bergen)	8	9.6	99.1	**27**
Å Skole	Sør-Trøndelag (Meldal)	12	1.3	12.5	**25**
Strandvik skule	Hordaland (Fusa)	9	1.3	11.6	**23**
Føynland skole	Vestfold (Nøtterøy)	18	1.5	12.8	**23**
Evje skole	Akershus (Bærum)	36	1	8.9	**23**
Roligheden skole	Aust-Agder (Arendal)	49	2.4	18	**20**
Hjellestad skole	Hordaland (Bergen)	47	1.4	9.7	**19**
Lillesund skole	Rogaland (Haugesund)	16	1.5	10.2	**18**
Vestsiden skole	Telemark (Porsgrunn)	69	1.2	7.6	**17**
Mellomhagen ungdomsskole	Vestfold (Larvik)	40	1.8	10.7	**16**
Fjellhamar skole	Akershus (Lørenskog)	23	0.9	5.4	**15**
Mølladammen ungdomsskole	Akershus (Bærum)	20	2.1	10.9	**13**
Holumskogen skole	Akershus (Nittedal)	22	1.7	7.6	**12**

Solvang skole i Gran	Oppland (Gran)	16	2.3	10.5	**12**
Båsmo barneskole	Nordland (Rana)	38	1	2.4	**7**
Flaktveit skole	Hordaland (Bergen)	131	1.9	5	**7**
Nordnes skole	Hordaland (Bergen)	19	1.2	0.4	**1**
Vestre Jakobselv Skole	Finnmark (Vadsø)	20	1.3	0	**0**
Vedavågen skole	Rogaland (Karmøy)	14	0.9	0	**0**
Tyssedal Barneskole	Hordaland (Odda)	8	0.5	0	**0**
Jaren Skole	Oppland (Gran)	19	1.5	0	**0**
Bø skule	Telemark (Drangedal)	1	0.7	0	**0**
Hellerasten skole	Akershus (Oppegård)	17	0.7	0	**0**

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TITLE	PROJECT LEADER
CO_2 on the way to school English summary of final report assessing the 2007 Norwegian student-based web campaign	Georg Hansen NILU PROJECT NO. O-108031
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ABSTRACT

Student research campaigns (*forskningskampanjer*) have been an annual event in connection to Research Days (*Forskningsdagene*) since 2003 in Norway. The campaigns invite students from all over the country to participate in a common scientific research event, which for 2007 was "CO_2 on the way to school". The campaign was geared to draw attention towards emissions of the most important human influenced climate gas, carbon dioxide - in connection with students transport to and from school. Simultaneously were the participants, which comprised of teachers and students, guided towards increasing knowledge of the general climate problem and to reflect over one's own behaviour and various options for local solutions. As with previous campaigns, this campaign included data collection at the class/student level, and was entirely facilitated by the campaign website for obtaining guidance and entering the collected data, as well as later data analysis.

2575 students from 86 different schools participated in the campaign, all from varying regions of Norway, with a relatively equal distribution. All ages of students from 5th to 10th grade (10 to 18 years old) in primary/secondary school were represented, as well as the first two levels of high school. The data results show (see Table 3 and Table 4 below) that more than 42% of the participating students walk to school, while 26% bike to school, in other words, more than 2/3 of the students do not emit CO2 on their way to school. In addition, approximately 30% use public transportation, especially the bus, while the portion of CO2 intensive modes such as taxis and cars made up approximately 15%. The average CO2 emission per student per year on their way to school is approximately 95kg, a value that is less than 1% of the yearly emission rate per inhabitant in Norway. (Also in Norwegian OR 64/2008)

NORWEGIAN TITLE

CO_2 på skoleveien

Elevbasert forskningskampanje som del av Forskningsdagene 2007

KEYWORDS		
CO_2	Carbon Footprint	School Project

ABSTRACT (in Norwegian)
Forskningskampanjen har vært et årlig arrangement i forbindelse med Forskningsdagene siden 2003. Skoleklasser over hele landet ble invitert til å delta i et felles løft knyttet til et spesielt tema, som for 2007 var "CO_2 på skoleveien". Oppgaven ble gjennomført på en spesiell webside på Nettverk for Miljølære (www.miljolare.no). Websiden inneholdt registrering av klassene, veiledning for datainnsamling, databehandling, behandling av spørreskjema, dataanalyser, samt en innledning til vurdering av prosjektet.
Oppgaven bestod av tre elementer: 1)Måle lengden på egen skolevei og bestemme CO_2-utslipp forårsaket av skyssmiddelet som ble brukt. 2) Besvare et spørreskjema angående egen vurdering av skoleveisikkerhet, klimabevissthet og vurdering av norsk klimapolitikk. 3) Utarbeide forslag til klimatiltak i egen kommune og for seg selv.
Det deltok totalt 2375 elever fra 86 skoler fra samtlige fylker, dog med sterkt varierende antall skoler per fylke. Alle årskull fra 5. til 10. klasse i grunnskolen og de første to trinnene i videregående skoler var representert. Det viser seg at mer enn 42% av de deltagende elevene går til skolen, mens 26% sykler, dvs. mer enn to tredjedeler av elevene har en CO_2-fri skolevei. Ytterligere ca. 30% bruker kollektivtrafikk, spesielt buss, mens andelen av CO_2-intensive skyssmidler som drosje og biler utgjør ca. 15% (summen av mer enn 100% skyldes bruk av flere skyssmidler per elev, ca. 15%). Det gjennomsnittlige CO_2-utslipp per elev per år ligger på ca. 95 kg, noe som er mindre enn 1% av årsutslippet per innbygger i Norge. (Norsk versjon: OR 64/(2008).

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