



In4mo Energy consumption-2023

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1 Introduction

The objective of this report is to calculate in4mo's 2023 energy calculation along with CO2 generated by that energy used. Statistical information about the electricity, water and district heating is provided by the building management of Technopolis. Online tools were used to calculate the CO2 generated based on the energy used.

2 In4mo's office

In4mo Solera Head office is in Espoo, Finland. The total area used for operations is mentioned below.

Innopoli1 Campus m2	In4mo m2	Percentage
25192	692	3 %

3 In4mo Electricity (kWh) 2023

Total electricity consumption by in4mo Solera office was 88,306 kWh in 2023.

Month	Electricity [kWh]
Jan	7620
Feb	6975
Mar	7366
Apr	6824
May	7069
Jun	7574
Jul	6981
Aug	7959
Sep	7925
Oct	7471
Nov	7278
Dec	7264
Total	88,306

CO2 in Kg
883.06

By 2023, Finland had average emissions for electricity generated from Wind energy is 10 g CO2eq/kWh. Divide the total kWh consumed by in4mo by 1000 to find the CO2 emissions in kilograms. ([link](#))

4 In4mo District heating [kWh]

Total district heating consumption for the company was 81001,28 kWh.

Month	District heating [kWh]
Jan	13483,24
Feb	11517,63
Mar	10855,72
Apr	5744,57
May	3024,67
Jun	1148,57
Jul	461,33
Aug	543,70
Sep	1109,32
Oct	7479,37
Nov	11377,77
Dec	14255,39
Total	81001,28

CO2 in Kg
0

The emission of our Ekoplus (Fortum Eko) product is 0 g CO₂/kWh. It is produced with renewable energy sources and waste heat, both of which are considered emission-free production methods. (Ref-1)

5 In4mo Water [m³]

The total amount of water used in 2022 was 141,026.97 liters.

Month	Water [l]
Jan	12420,04
Feb	11256,90
Mar	14494,28
Apr	10030,64
May	12972,12
Jun	11452,31
Jul	15614,32
Aug	11154,44
Sep	10586,35
Oct	11904,71
Nov	10888,81
Dec	825,51
Total	141,026.97

CO2 in Kg
41.96

*1 Liter of water emits 0.298 grammes of CO2

6 Annual Laptop CO2 emission

A laptop generates 4g of CO2 per hour used by an employee.

Hourly CO2	Daily CO2/g	Annual emission in grams	Annual Emission in Kg/employee	Annual emission by 43 employees in kg
4g	32	7680	7.68	330.24

$32g \times 240$ (annual working days) = 7680

$7680g / 1000 = 7.68$ kg

7.68 kg (Annual CO2 by an employee) \times 43(total employees) = 330,24 kg

Reference: 4g per hour CO2 (<https://www.nowtricity.com/country/finland/>)

7 Commuting

Total CO2 emission emitted during the commuting was 1096.21 KG.

Employee names initials are used due to employee privacy policy.

Name	Travel mode	Travel KM per day approx. (to-return)	Annual travelled KM	Grams	CO2 kg
TH	Car	24	1728	35596,8	35,60
LS	Car	20	1920	39552	39,55
JA	Car	18	3888	80092,8	80,09
NS	Car	16	3456	71193,6	71,19
UK	Car	36	7776	160185,6	160,19
PW	Car	20	1920	39552	39,55
JE	Car	22	3696	76137,6	76,14
DP	Car	24	4032	83059,2	83,06
MG	Car	24	4032	83059,2	83,06
AK	Car	24	4032	83059,2	83,06
FH	Car	26	4992	102835,2	102,84
LK	Car	22	4224	87014,4	87,01
KV	Car	24	2880	59328	59,33
JH	Train	25	5400	8100	8,10
BA	Train	25	5400	8100	8,10

MB	Train	45	2160	3240	3,24
KJ	Train	22	3696	5544	5,54
DM	Train	20	3360	5040	5,04
JM	Train	30	3360	5040	5,04
FG	Car (electric)	20	4320	60480	60,48
Total					1096.21

8. Air Travel

Total CO2 emission emitted was 82,712 KG.

To	One way/Return	CO2 Amount (KG)	KM
Brisbane	Return	7,1	30900
Dresden	One	0,307	1200
Dusseldorf	One	0,183	500
Helsinki	One	0,351	1500
Madrid	Return	1	5900
Oslo	Return	0,457	1500
Brisbane	Return	7,1	30900
Munich	One	0,359	1600
Dresden	One	0,162	1200
Frankfurt	One	0,166	400
Helsinki	One	0,354	1500
Oslo	Return	0,457	1500
Madrid	Return	1	5900
Oslo	Return	0,457	1500
Oslo	Return	0,457	1500
Oslo	Return	0,457	1500
Oslo	Return	0,457	1500
Oslo	Return	0,457	1500
Oslo	Return	0,457	1500
Oslo	Return	0,457	1500
Oslo	Return	0,457	1500
Oslo	Return	0,457	1500
Bergen	One	0,563	1100
Bergen	One	0,563	1100
Bergen	One	0,563	1100
Helsinki	One	0,563	1100
Helsinki	One	0,563	1100
Oslo	One	0,297	300
Bergen	One	0,563	300
Oslo	One	0,156	300
Oslo	One	0,156	300
Madrid	One	0,51	2900
Helsinki	One	0,51	2900
Helsinki	One	0,51	2900

Malaga	Return	1,2	6700
Madrid	One	0,187	500
Dresden	Return	0,25	300
Berlin	Return	0,578	2300
Brisbane	Return	7,1	30900
Varsova	Return	0,515	1900
Madrid	Return	1	5900
Oslo	Return	0,457	1500
Oslo	Return	31,533	103500 (69-Oslo)
Oslo	One	6,193	3300 (11-Bergen)
Helsinki	Return	0,752	2100
Oslo	One	0,228	800
Billund	One	0,186	500
Copenhagen	One	0,25	900
Oslo	Return	0,457	1500
Naples	Return	3,2	16800
Total		82,712	

9. Total waste

In4mo's share of the total waste amounted to 1.9419 tons, equivalent to 1941.90 kilograms. Subsequently, we computed the CO2 emissions for each waste type, revealing that the overall CO2 emission generated by In4mo's waste was 2113.61 kg

Type of Waste	2023-01	2023-02	2023-03	2023-04	2023-05	2023-06	2023-07	2023-08	2023-09	2023-10	2023-11	2023-12	Yhteensä	In4mo share (t)	KG	CO2 (kg)
Energia	0,01	0,01	0,01	4,04	0,01	0,01	0	0,01	0,01	0,01	6,9	5,67	16,68	0,5004	500,40	350,00
Data protection material	0,67	0,04	0,11	0,36	0,19	0,53	0,07	0,05	0,61	0	0,04	0,61	3,29	0,0987	98,70	52,31
Cardboard	0,92	0,89	1,02	0,83	1,04	0,96	0,96	0,96	1,02	1,02	1	1	11,6	0,348	348,00	327,12
Mixed waste	1,14	0,83	1,43	1,13	1,18	0,85	0,79	0,92	0,66	0,68	0,81	0,59	11,01	0,3303	330,30	231,21
Bio	0,58	0,38	0,72	0,58	0,72	0,58	0,58	0,72	0,58	0,58	0,72	0,53	7,25	0,2175	217,50	231,21
Carton	0,38	0,38	0,45	0,35	0,45	0,42	0,42	0,42	0,42	0,42	0,42	0,42	4,93	0,1479	147,90	139,03
Packaging plastic	0,14	0,07	0,17	0,14	0,17	0,14	0,14	0,17	0,21	0,21	0,41	0,21	2,16	0,0648	64,80	388,80
Collection paper	0,33	0,3	0,33	0,3	0,3	0,38	0,3	0,3	0,63	0,44	0,4	0,42	4,42	0,1326	132,60	70,28
Clear film plastic	0,01	0,01	0,03	0	0,01	0,01	0,02	0,02	0,02	0,01	0,01	0,01	0,14	0,0042	4,20	7,14
Packaging metal	0,09	0	0,18	0,09	0,09	0,09	0,09	0,09	0,09	0,09	0,18	0,09	1,2	0,036	36,00	72,00
Packing glass	0,1	0	0,19	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,29	0,1	1,34	0,0402	40,20	241,20
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,00	0,00
Electrical and electronic waste	0	0	0	0	0	0	0,03	0,05	0,03	0	0	0	0,1	0,003	3,00	3,32
Hazardous waste	0	0	0	0	0	0	0,03	0	0	0	0	0	0,03	0,0009	0,90	0,00
Wooden boxes and packages	0	0	0	0	0	0	0	0	0	0,58	0	0	0,58	0,0174	17,40	0,00
Jätejakeeseen kohdistumaton palvelu	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,00	0,00
Total	4,37	2,91	4,64	7,92	4,26	4,07	3,53	3,81	4,38	4,14	11,18	9,65	64,73	1,9419	1941,90	2113,61

CO2 in Kg
2113.61

10. Total CO2

Energy	kg
Electricity	883.06
District heating	0
Water	41.96
Laptop	330.24
Commute (Car & Train)	1096.21
Air travel	82712
Waste	2113.61

Total CO2 in KG
87,177.08

11. Conclusion

Monitoring and evaluation of energy savings are very relevant and important for assessing the impact of CO2 generation. We compiled the data for 2023 to build confidence and encourage employees to take comparable efforts to reduce the CO2 generation and use energy end-wisely. In 2024, our collective commitment to sustainability will be manifested through ambitious targets aimed at significantly reducing paper and plastic usage, paving the way for a greener and more environmentally conscious future.

12.Reference:

- 1) District Heating is carbon neutral. Confirmation email of 0 emission of CO2 by Fortum Sales Director.

