p\_GFRP b2f Ti takt (1.475%) $(1.6\overline{5}\%)$ p\_Al (4.849%) (3.727%)



d lorry (4.167%)

**lubricant** 

(4.221%)

t app (4.827%)

p inconel (1.71%)paper\_use

(1.801%)

water office

(2.662%)

E office

(4.781%)

p\_Ti

(3.513%)

CTV: freshwater ecotoxicity

maint pol (1.597%)ff climb

t idle

(1.561%)

(1.602%)

maint battery

(2.408%)

new machine (1.105%)p CFRP (1.369%)

maint steel

b2f inconel

(4.744%)

(3.129%)

m lorry

(0.955%)

new factory (0.984%)maint Al (1.194%)

b2f Al

(2.028%)

grid hydro

(0.972%)

ff to

(1.154%)

OEW

(1.921%)

E factory

(2.797%)

test FH

(4.517%)

t idle p inconel maint Al (0.93%)p\_Ti (3.239%) (1.465%)(1.234%)p GFRP maint pol (0.961%)

m lorry

 $(1.\overline{057\%})$ 

(1.368%)

t\_app

(2.736%)

b2f Al

(1.22%)

maint battery

(3.174%)

test FH

(4.145%)

new factory

(0.896%)

ff to

(2.397%)

p CFRP

(1.134%)

flights year

(1.087%)

OEW

(2.287%)

m sea

(3.132%)

d lorry

(4.049%)

CTV: human toxicity

E factory (1.265%)(2.222%)b2f Ti takt (1.274%)(3.552%)water office paper use

> maint steel (3.558%)

> > ff idle

(3.98%)

**lubricant** 

(5.158%)

ff climb (2.777%)new machine (3.187%)

E office

(5.133%)

(2.226%)

takt (1.515%)

t\_app (4.906%)

t\_app (1.686%)

ff climb m lorry

CTV: marine ecotoxicity

(4.900%)		paper_use	ff_climb (1.577%)	m_lorry (0.966%)		
	wastewater_office (4.183%)	(1.807%)	t_idle (1.581%)	new_machine (1.105%)	grid_hydro (0.987%)	new_factory (0.978%)

maint pol

(1.65%)

maint\_battery

(2.413%)

ff to

 $(1.\overline{164\%})$ 

OEW

(1.856%)

E\_factory

(2.813%)

b2f inconel

(4.512%)

maint Al

(1.203%)

b2f Al

(2.202%)

p CFRP

(1.376%)

maint steel

(3.122%)

test FH

(4.543%)

p inconel

 $(\overline{1.817\%})$ 

water\_office

(2.721%)

p\_Al

(4.663%)

p\_Ti (3.531%)

ea	wastewater_office (4.183%)
7%)	

lubricant (4.245%)

d lorry

(4.256%)

E office

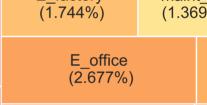
(4.793%)

CTV: terrestrial ecotoxicity m sea p\_CFRP b2f\_inconel (3.703%)  $(1.\overline{4}11\%)$ (1.03%)

b2f steel

(5.231%)	(0.70070)	t_app			
		(1.54570)	(1.039%)	(0.957%)	
lubricant	ff_to (3.898%)	water_office (1.696%)	flights_year (1.088%)	b2f_Ti (1.026%)	d_sea (1.025%)
(5.821%)	maint steel	E_factory (1.744%)	maint_Al (1.369%)	t_idle (1.266%)	p_GFRP (1.197%)





OEW (2.412%)

test FH

(3.004%)

ff\_idle

 $(4.\overline{4}93\%)$ 

lifetime (1.182%)p\_inconel (2.219%) p\_Ti (2.911%)

d\_lorry

(4.475%)

pax\_ap (1.012%)

b2f Ti b2f Al p\_inconel (1.602%) $(1.5\overline{49}\%)$ 

(5.753%)	(3.34 70)
	lubricant
	(0.0040/)

(3.884%)

wastewater office (3.999%)

E office

(4.054%)

test FH

(4.88%)

b2f\_steel (1.58%)p\_CFRP

CTV: metal depletion

t idle

(1.642%)

p\_GFRP (1.871%)

maint battery

(2.146%)

E factory

(3.273%)

d\_lorry

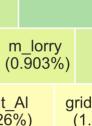
(4.794%)

(0.978%)
ff_climb (1.046%)

ff to

 $(0.9\overline{3}4\%)$ 

fleet



maint steel

(2.888%)

takt

(4.32%)

grid hydro maint Al OEW (1.584%)(1.33%)(1.326%)(1.147%)maint pol b2f inconel paper use (2.132%)(2.031%)(1.874%)

water office

(3.26%)

p\_Ti (4.671%)

maint\_Al (1.084%) new\_machine (1.44%) d lorry

ff idlo	(0.7040()	(1.4470)	,	,			
ff_idle (5.338%)	(3.791%)	t_idle (1.45%)	maint_ (1.236				
	lubricant (4.171%)	p_GFRP (1.463%)	p_inco (1.286	0.1	_hydro .0%)	new_fact (0.942	
p_Ti (5.725%)		paper_use (1.632%)	flights_ye			lifetime (1.308%	
,		(1.00270)	(11011)	(110	(**************************************		(11=0070)
	wastewater_office (4.171%)			<del>_</del>		DEW .198%)	ff_climb (1.952%)
b2f_inconel							
(5.801%)	t_app (4.188%)	takt (3.461%)			_steel 82%)		E_factory (2.688%)

p\_Al (5.089%)

test\_FH (4.19%)

m\_sea (4.413%)

CTV: agricultural land occupation

E\_office (5.226%)

d sea p inconel (1.09%)test FH (2.076%)new factory b2f steel (3.049%)(0.725%)p GFRP lifetime b2f Ti (1.2%)(2.125%)(0.791%)flights ap **OEW** p CFRP m sea paper use (1.209%) $(\overline{1.05\%})$  $(1.\overline{0}42\%)$ (0.898%)(3.196%)pax ap (2.882%)water office m lorry ff idle flights year (1.575%)(1.277%)(1.274%)(1.266%)

d lorry

(4.026%)

E office

(2.033%)

maint battery

(5.14%)

new machine

(3.676%)

E factory

(1.756%)

maint Al

(1.607%)

p\_Ti

(3.658%)

maint steel

(5.014%)

CTV: climate change

(3.196%)

takt
(3.51%)

b2f\_inconel
(3.003%)

ff climb

(4.403%)

p\_Al

(5.312%)

ff\_to (6.612%)

d sea pax ap test FH (1.311%)(2.105%)maint battery  $(2.6\overline{3}2\%)$ b2f Ti (0.719%)E factory (1.419%)new machine m sea

CTV: fossil depletion

**OEW** (3.122%)

p\_Ti

(3.285%)

p\_Al (5.097%)

maint steel

(5.239%)

(2.187%)p inconel (2.413%)

b2f inconel

(2.459%)

water office (1.493%)maint Al (1.627%)

lifetime

(2.078%)

wastewater office

(5.235%)

b2f steel

(4.824%)

 $(0.\overline{7}38\%)$ 

p CFRP

(1.056%)

flights year

(1.253%)

t idle

(1.807%)

takt

(3.624%)

t app

(1.011%)

m lorry

(1.237%)

new factory

p\_GFRP

(1.232%)

E office

(1.758%)

ff climb

(3.468%)

d lorry

(5.228%)

(0.767%)

CTV: freshwater eutrophication p\_inconel (1.286%) p\_GFRP (1.518%) takt

(2 6050/ )

b2f\_inconel (5.267%)

(5.295%)	(3.695%)	p_CFRP grid_hydro							
(0.23070)		maint_pol	(1.32)	8%)	grid_hydro (1.05%)				
	wastewater_office (3.735%)	(1.71%)	b2f_ (1.35	Al 3%)	new_factor				
t_app (5.393%)	(0.1. 00.10)	b2f_Ti (1.839%)	t_idl	le	ff clim		ights_ye	ear	maint_Al
(0.000,0)	d laws.	(1.00070)	t_idle (1.513%)		(1.2859	%)	(1.199%	%)	(1.166%)
	d_lorry (3.79%)	water_office (2.86%)			OEW maint_b (2.279%) (2.24		battery 42%)		paper_use (2.045%)
p_Al									
(5.787%)	E_office (4.109%)	p_Ti (3.226%)			E_facto (2.916%			mair (2.	nt_steel 897%)

test\_FH (4.644%)

b2f\_steel (4.497%)

lubricant (4.122%)

ff idle

E factory b2f inconel p inconel (1.222%)(2.024%)**lubricant** (2.675%)

(5.849%)	(=::::,0)	
	n Ti	
maint_battery	p_Ti (2.974%)	
(5.893%)		
	OEW (3.358%)	

(2	2.254%)
	ifetime 2.421%)

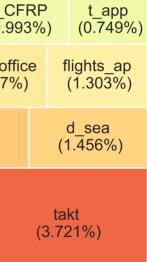
test FH

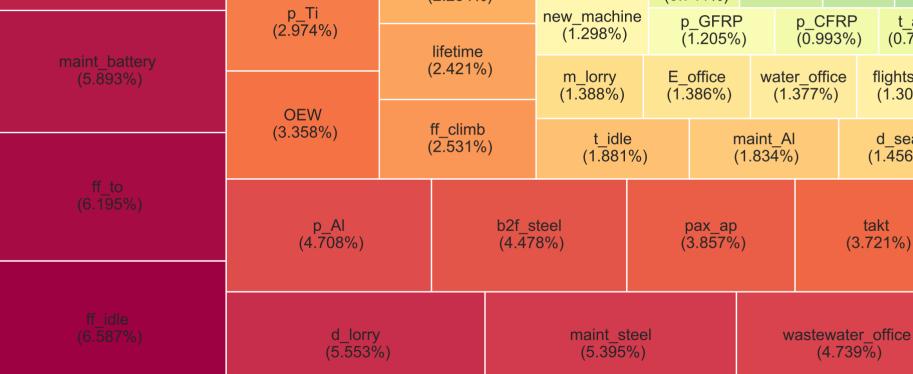
CTV: ionising radiation



flights year

b2f Ti





d sea E office (1.138%)(2.012%)b2f inconel

ρ_Αι (5.615%)	(3.093%)
	05/4/

(3.118%)

new machine

(3.577%)

ff climb

(4.536%)

maint battery

(5.232%)

 $(\overline{2}.168\%)$ pax ap (3.021%)

test FH

(3.046%)

d lorry

(4.117%)

p inconel

CTV: marine eutrophication

flights year (1.211%) water office

(1.554%)

maint steel

(5.144%)

lifetime

(1.814%)

p GFRP

(1.207%)

takt

(3.705%)

new factory (0.718%)

b2f steel

(4.928%)

paper\_use (2.958%)

wastewater office

(3.143%)

**OEW** 

(3.414%)

E factory

(3.572%)

p\_Al (4.242%) fleet (1.796%)

flights year

(2.152%)

maint steel

(2.661%)

**lubricant** 

(3.552%)

takt

(3.832%)

p\_GFRP (1.614%) p\_CFRP (1.626%)

grid hydro

(1.637%)

CTV: natural land transformation

maint pol

(2.458%)

p\_inconel ne (1.206%) (

b2f steel

(1.387%)

d lorry

(3.529%)

water office

(3.745%)

new\_factory (1.182%) t idle

b2f Al

(1.123%)

maint Al

(1.234%)

b2f Ti

(2.174%)

(3.475%)

p\_Ti (3.633%)

(1.281%) (1 E\_office (2.302%) (2.1

p GFRP b2f inconel (1.236%)ff climb (2.152%)

maint_battery (5.76%)	(2.851%)

p\_Ti (3.124%)

**OEW** 

(3.271%)

p\_Al (4.844%)

d lorry

(5.548%)

lifetime (2.298%)test FH (2.331%)

p\_inconel

(2.599%)

CTV: ozone depletion

flights year (1.273%)E factory (1.294%)E office (1.481%)

b2f\_steel

(4.47%)

new factory (0.742%)flights ap (1.094%)d sea  $(1.\overline{4}52\%)$ 

t idle

(1.866%)

maint steel

(5.385%)

d air

(0.722%)

takt

p CFRP (1.029%)water office (1.404%)maint Al (1.803%)(3.689%)

pax\_ap (3.274%)wastewater office

(4.859%)

t\_app

(0.828%)

m lorry

(1.353%)

new machine

(1.544%)

p\_GFRP E factory (1.219%)test\_FH (1.707%)n Al

p\_Ti

(3.579%)

ff climb

(4.549%)

b2f steel

(5.162%)

(5.396%)	(3.139%)	
		DC - Co.
		lifetim (1.724
	b2f inconel	(1.724

(3.443%)ff idle

(1.227%)ne 4%)

**OEW** 

(2.961%)

new\_machine

(4.231%)

(1.757%)

CTV: particulate matter formation

maint Al  $(1.53\overline{3}\%)$ water office

maint battery

(4.901%)

flights\_year

(1.655%)

p\_CFRP (1.035%)m lorry (1.195%)

E office

(2.275%)

b2f Ti

(0.825%)

paper use

(0.918%)

d\_lorry

(4.198%)

new\_factoryflights\_ap (0.749%) (0.725%)

m sea

 $(1.\overline{191\%})$ 

p inconel

(2.177%)

d sea

 $(1.\overline{0}65\%)$ 

pax ap

(1.909%)

takt

(3.676%)

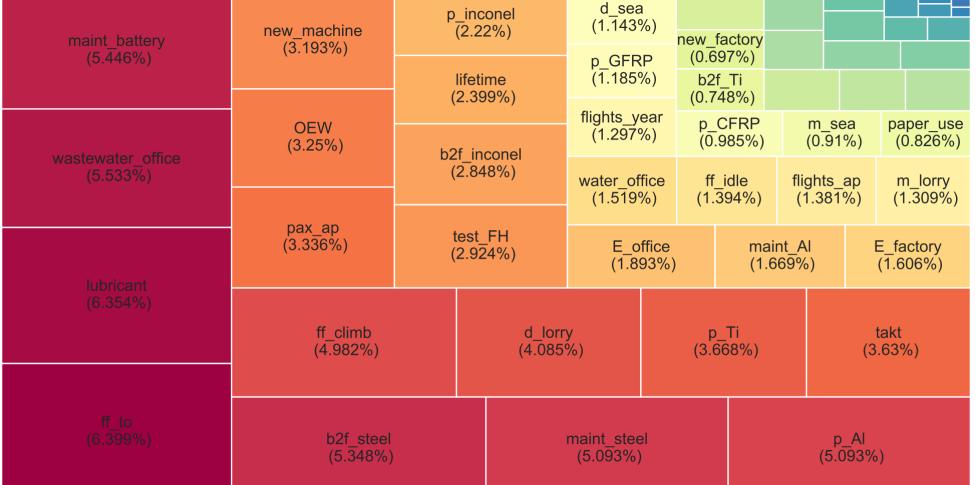
maint steel

(4.836%)

CTV: photochemical oxidant formation

p\_inconel

d\_sea



flights ap m sea (0.93%)p inconel (1.187%)OEW p\_Al  $(\overline{2}.428\%)$ (3.066%)p\_CFRP

CTV: terrestrial acidification

test FH b2f inconel

(2.928%)(3.114%)

new machine

(3.159%)

maint steel

 $(5.0\overline{27}\%)$ 

ff climb

(5.288%)

pax ap

(3.036%)

flights year (1.217%)maint Al

(1.646%)

d lorry

(4.236%)

lifetime

(1.924%)

maint battery

(5.224%)

p GFRP

 $\overline{(}1.2\%)$ 

d\_sea (1.161%)E factory

takt

(3.655%)

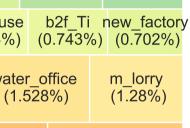
(1.573%)

(0.978%)

paper\_use (0.784%)water office

E office

(1.902%)



b2f steel

(5.162%)

m lorry

(1.28%)

ff idle

(1.703%)

p\_Ti (3.652%)

CTV: urban land occupation t idle maint pol (1.31%)lifetime (2.22%)b2f inconel (3.059%)

**OEW** 

(3.292%)

wastewater office

(3.421%)

p Ti (3.623%)

p\_Al (4.083%)

maint steel (2.75%)paper use

(2.785%)

E office

(2.842%)

d lorry

(3.573%)

m sea (3.998%)

(1.442%)p steel (1.478%)

grid hydro

p GFRP

(1.58%)

flights year

(2.105%)

m lorry (1.07%)p inconel  $(\overline{1}.204\%)$ b2f steel

(1.535%)

water office

(3.563%)

**lubricant** 

(3.769%)

new factory

(1.2%)

fleet

(1.51%)

b2f Ti

(2.002%)

maint Al

(1.194%)

p CFRP

(1.51%)

maint battery

(1.963%)

E factory

(3.447%)

takt

(3.749%)

p steel p GFRP p inconel (0.676%)test FH (1.155%)(2.319%)b2f Ti (2.864%)(0.7%)d sea  $(1.\overline{2}08\%)$ m sea b2f inconel (0.81%)(2.613%)

lifetime (2.685%)

new machine

(2.752%)

ff climb

(4.466%)

maint steel

(5.226%)

CTV: water depletion

OEW (3.439%)

takt

(3.684%)

p\_Al (4.916%)

b2f steel

(5.271%)

fligl (1

flights\_year (1.343%) E factory

(1.576%)

flights ap

(2.303%)

d lorry

(3.906%)

ff idle

(0.877%)

maint Al

(1.787%)

paper\_use

(0.812%)

m lorry

(1.405%)

E office

(1.675%)

p\_Ti (3.812%)

pax ap

(5.202%)