

2021

Calculation model for environmental savings when reusing.

– How have we made the calculation?



INREGO

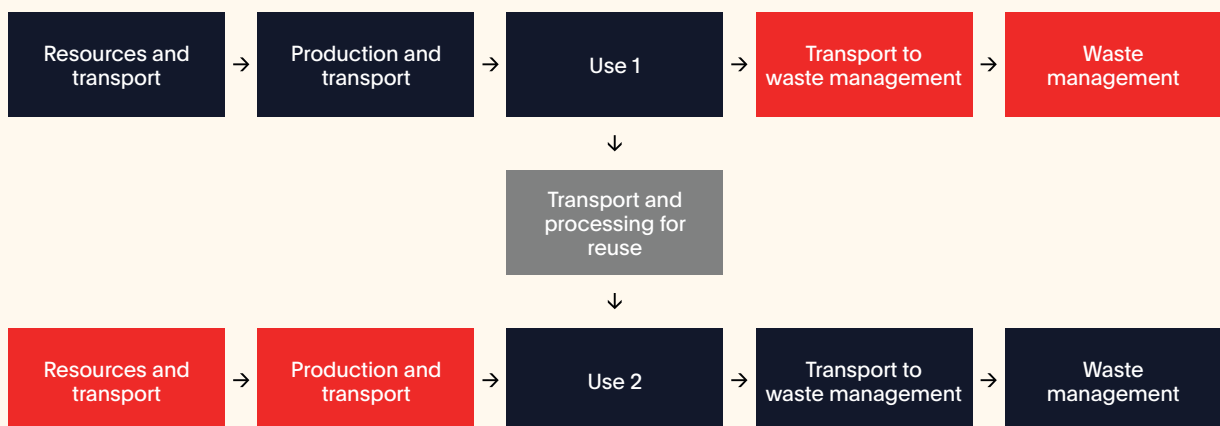


Environmental savings

New production of IT products requires large amounts of natural resources. In addition to the consumption of materials, chemicals, water and energy, greenhouse gases are also released into the atmosphere. Emissions caused during production are the dominant aspect over the lifetime of the product.

Reuse saves emissions from production, as well as distribution and waste management, see figure. This then provides a calculation formula for emission savings, including emissions from the reusing process.

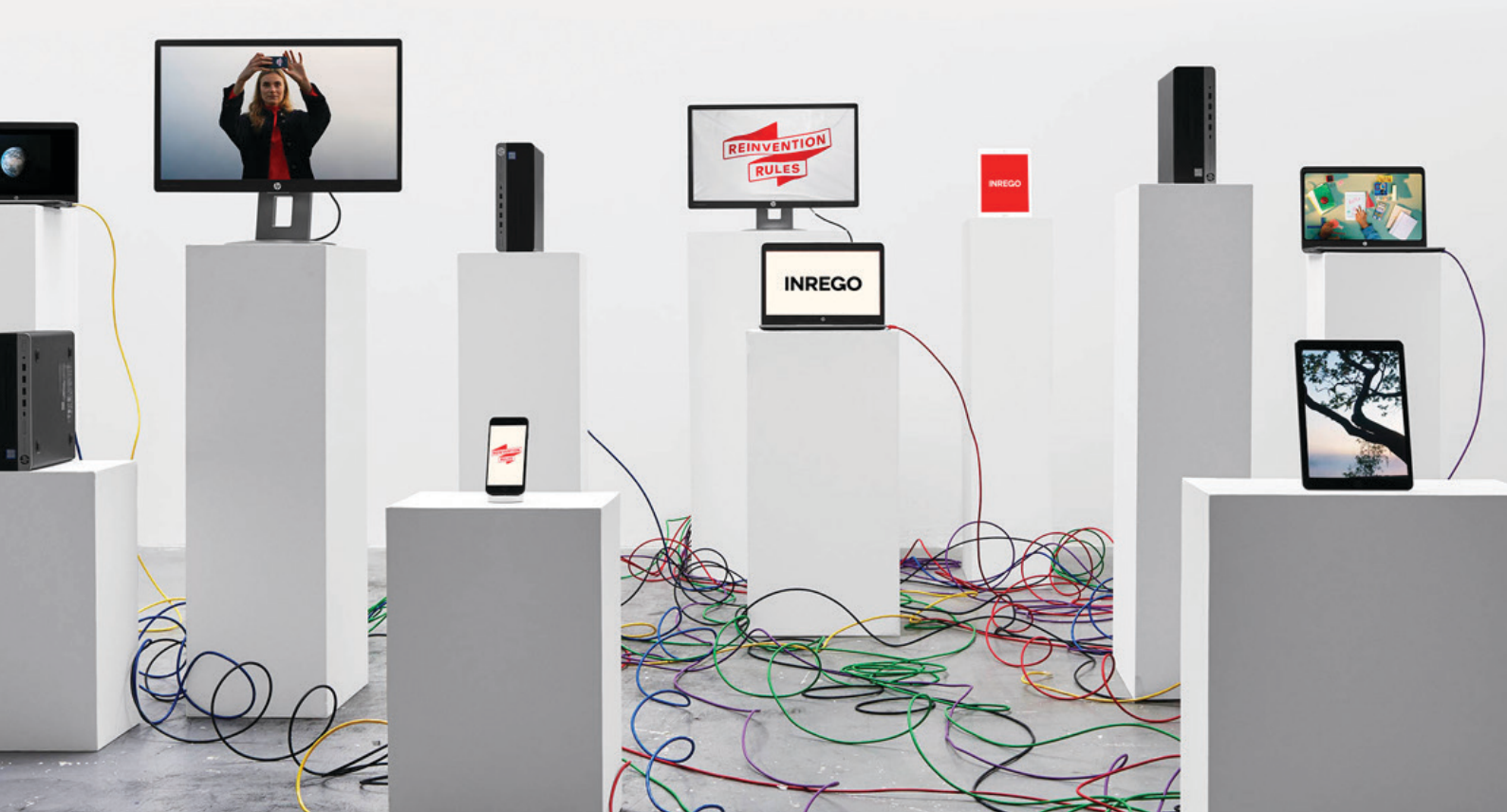
$$\text{Miljöfördel} = \text{PROD}_u + \text{TRP}_{up} + \text{AVF}_u + \text{TRP}_{ua} - \text{TRP}_{re} - \text{REKOND}$$



■ Process regardless of reuse

■ Process replaced by reuse

■ Process added by reuse



A new standard

The IT industry needs to be able to communicate these environmental savings in a common and globally standardised way. Together with the IVL Swedish Environmental Research Institute, Inrego has published a scientifically produced calculation model for the industry to use.

The report: www.inrego.com/co2

Approach and assumptions:

1. Emission data for the various processes in the life cycle have been collected from the manufacturers' published environmental data, after which average values have been calculated per product type and subcategory.
2. The values for components have been calculated according to specially produced models based on material and component content.
3. If a product requires a replacement part to be reused, the component's manufacturing emissions are deducted from the savings.
4. The emission savings are distributed equally between the first and second user, as both are necessary for reusing to take place. This avoids double-counting.
5. The saving is indicated in kg CO₂e (carbon dioxide equivalents); a measure of the climate impact of all kinds of greenhouse gas emissions converted to carbon dioxide. In running text, however, the abbreviation CO₂ is sometimes used to make reading easier.

The following data is used for reporting CO₂E-savings.

Category	Subcategory	Potentiell CO ₂ e -besparing
All-in-one Desktop	Screen below 24 inch	420
	Screen 24+ inch	520
Desktop	USDT (Ultra Small Desktop)	290
	SFF (Small Form Factor)	380
	Tower	750
Monitor	Screen below 33 inch	440
	Screen 33+ inch	620
Notebook	Screen below 14 inch	250
	Screen 14+ inch	300
	Hybrid	280
Server		400
Handheld	Smartphone	55
	Tablet-Small	95
	Tablet-big	140
Projectors		21
Network equipment	Small	9
	Rack mounted (blade)	200
	Rack mounted (large)	800
Printer		180

Components	CO ₂ e saving
SSD	94
RAM	5
Processor	50
Laptop battery	8
Laptop screen	61
Tablet screen	32
Smartphone screen	14
Keyboard	4
Power adaptor, laptop	4
Smartphone/tablet charger	1
Docking station	8
Network card	2
DVD	3

The saving calculation per product is shown in the feedback report's downloadable Excel file.

Column header	Meaning
P. "Potential CO ₂ E-saving for product".	The product's maximum saving.
Q. "CO ₂ e savings reduction replaced components".	Replaced parts' manufacturing emissions.
R. "CO ₂ e saving reused product".	Potential savings minus savings reduction.
S. "Your CO ₂ e saving (kg)".	Half the CO ₂ e saving, rounded up. <i>This is your CO₂e saving as reported in summaries and statistics.</i>

Previous calculation model and statistics

This calculation model is an update of the previous calculation model that Inrego has used since 2010. From the 1st June 2021 all emissions savings are reported according to the new model and with the new values. Statistics compiled over the period before 1st June 2021 and after that date will thus contain both the previous and the new values.

Areas of use

Reported saving is that of the report recipient. The saving can be communicated both internally and externally to show how we save the environment by reusing IT products and are included in the organisation's carbon footprint.

