

Energy

Change

Food



Change

Food



**Nitrates in
groundwater**

Change

Food



Poisonous
control
chemistry

Change

Social



Shannon Badiee

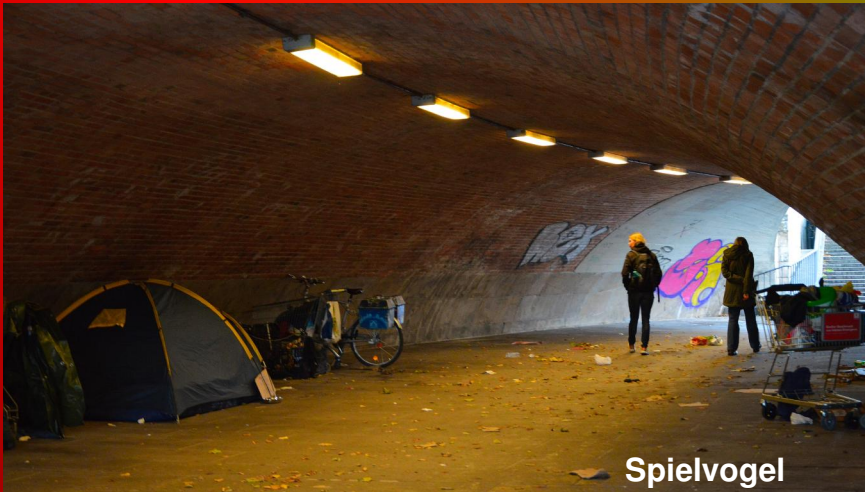
Change

Social



Change

Social



Spielvogel

Change

**More land
for less land
consumption!**

**More land
for less land
consumption!**

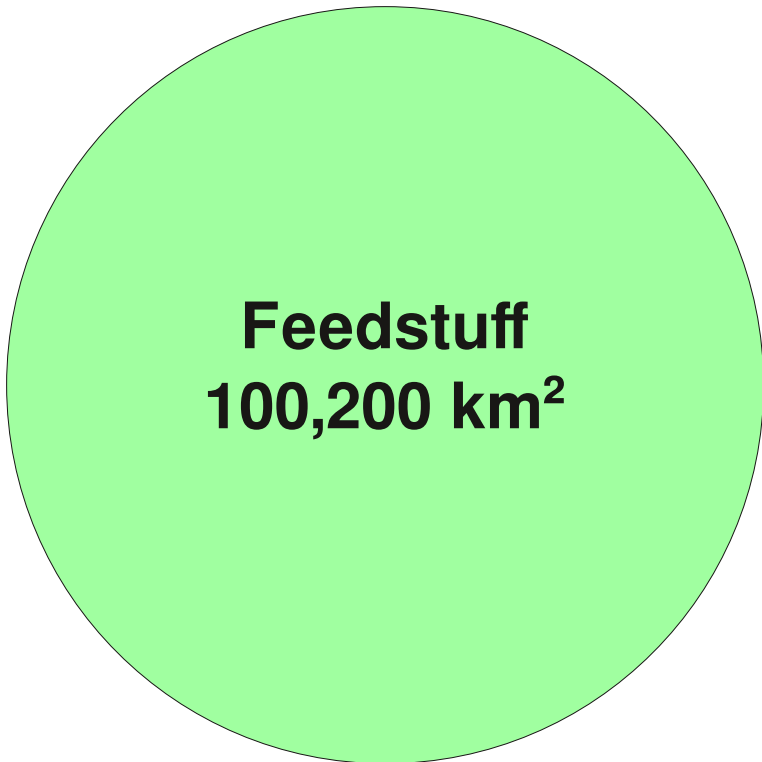
Paradox?

No!

**It depends on
how you count.**



Germany 2020



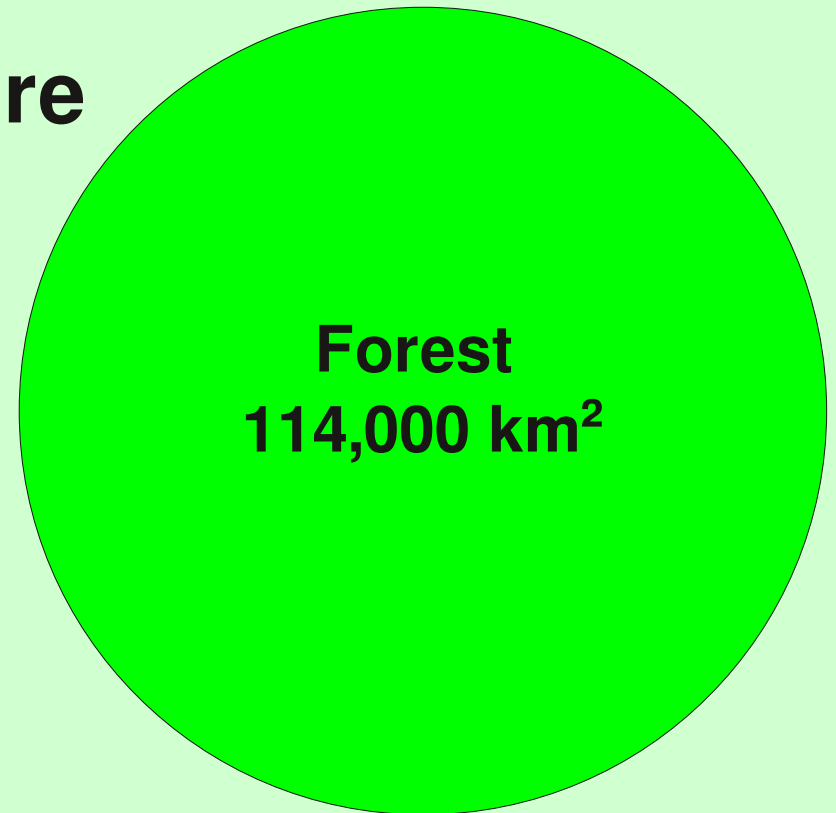
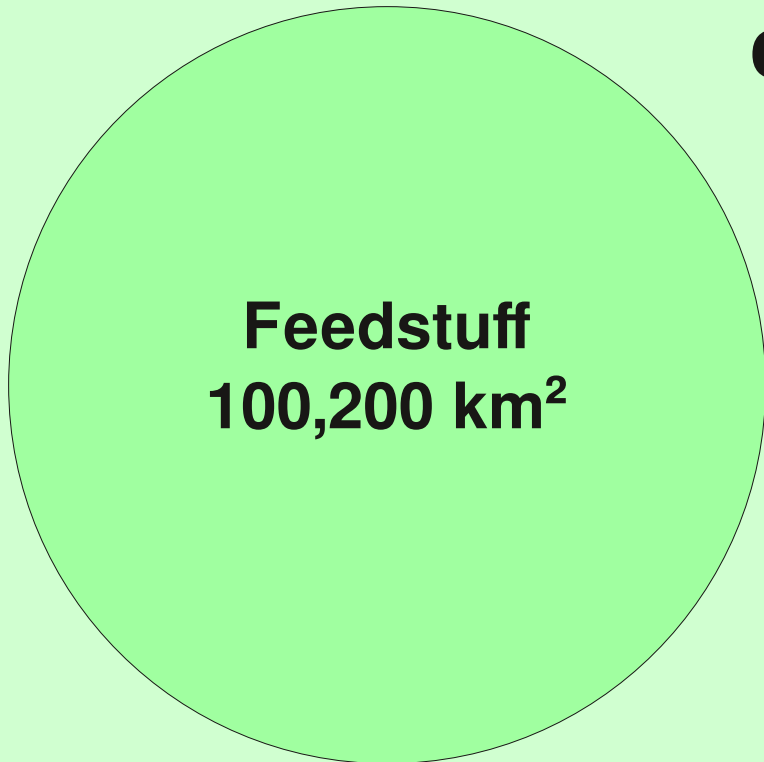


covered



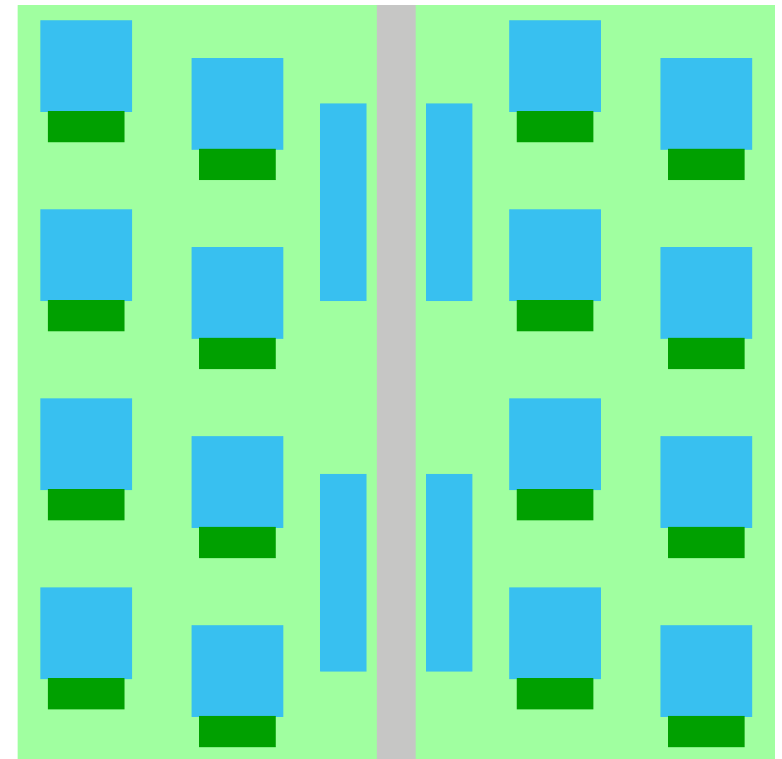
100 % used

close to nature

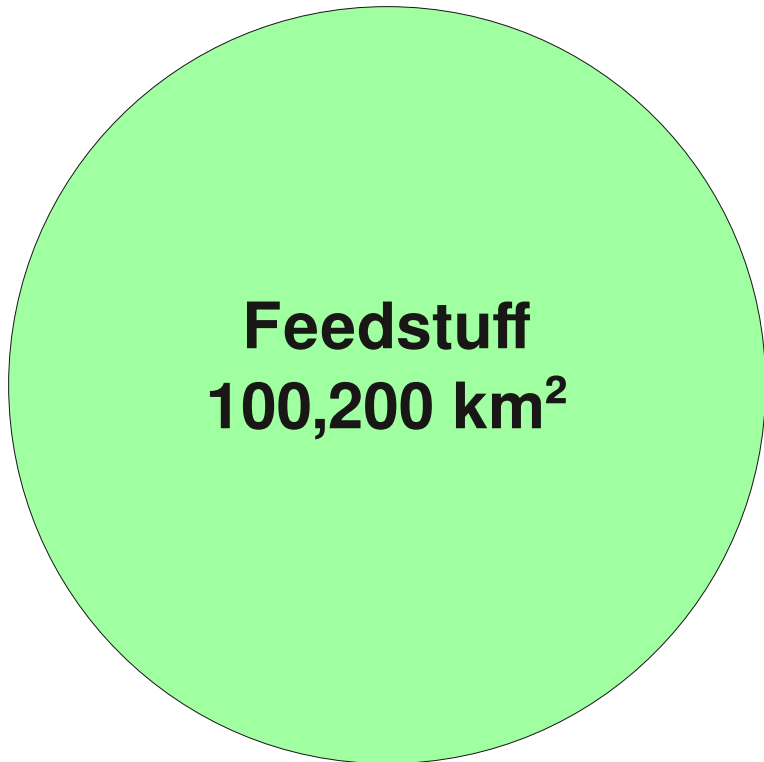


Yield per hectare compare

Maize for “biogas”



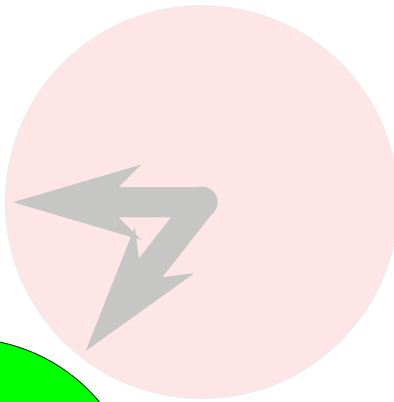
Electricity yield	16 MWh	512 MWh
Electricity production	Continuously 2 kW	Demand-based up to 272 kW
Electricity price / kWh	EEG compensation ~ 16 Cent	free market prices only
Sales	only via EEG	EEX to grid frequency market
Equipment	Share 2 kW gas engine	640 kW PV 1600 kWh batteries
Food production	none	Vertical Gardening 800 m ²
Living space	none	1,440 m ²



Streets
18,047
km²

Buildings
26,195 km²

5,000
km²



Food
36,740 km²

22,000
km²

Feedstuff
100,200 km²

Forest
114,000 km²

ClimateProtectionSuperiorityHouses as

ClimateProtectionSuperiorityHouses	12,500,000
Photovoltaic	500 GW
Electricity yield	400 TWh
Batteries	1,250 GWh
New building land “Land for Energy”	5,000 km²
New buildings on existing building land	4,000 km²
Discontinuation of biogas	-40 TWh

Core of the energy transition around 2040

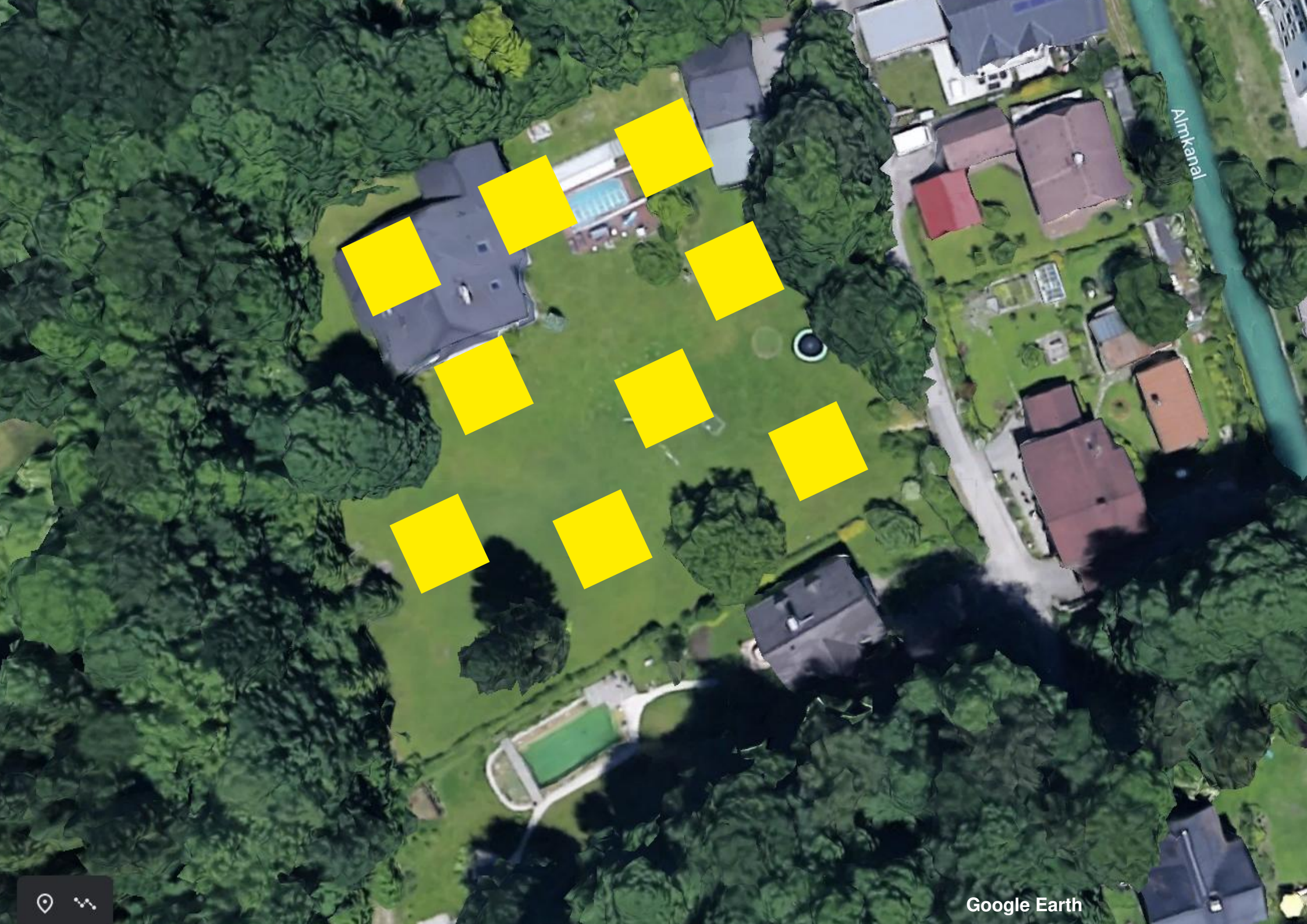
A few % return is not enough for a fast energy turnaround,

400 m² building ground in “land for energy” zone	12.000 €
Electricity, water, sewerage connection	12.000 €
“GEMINI next Generation” DIY 66 m², 24 kW PV, 84 kWh batteries	98.000 €
Double garage with additional 6 kW PV, other on the property	15.000 €
30 m² Glass House with Vertical Gardening Aeroponic	10.000 €
Total	147.000 €
Monthly installment for a 30-year loan term	513 €

we have to promise the people paradise already!



Almakkamal



Almkanal

This motivates drivers to buy newer cars or retrofit catalytic converters

Schadstoffklasse	Motor	Steuersatz (je 100 cm ³ Hubraum) bei Erstzulassung bis 30. Juni 2009					Steuersatz bei Erstzulassung ab 1. Juli 2009	Freigrenze bis zu der der CO ₂ -Ausstoß unberücksichtigt bleibt (Datum der Erstzulassung)	Bemerkungen
		bis 30.6.1997	1.7.1997 – 31.12.2000	1.1.2000 – 31.12.2003	1.1.2004 – 31.12.2004	ab 1.1.2005			
Euro 4	Otto			5,11 €	6,75 €	6,75 €			
	Diesel			13,80 €	15,44 €	15,44 €			
Euro 3 D3 und besser	Otto	13,20 DM (6,75 €)	10,00 DM (5,11 €)	5,11 €	5,11 €	6,75 €	2,00 € je 100 cm ³ + CO ₂ -Zuschlag (2,00 € je g/km oberhalb der Freigrenze)	1. Juli 2009 – 31. Dezember 2011: 120 g/km 1. Januar 2012 – 31. Dezember 2013: 110 g/km seit 1. Januar 2014: 95 g/km	
	Diesel	37,10 DM	27,00 DM (13,80 €)	13,80 €	15,44 €	15,44 €	9,50 € je 100 cm ³ + CO ₂ -Zuschlag (2,00 € je g/km oberhalb der Freigrenze)	Zuschlag von 1,20 € pro 100 cm ³ für Fahrzeuge ohne Rußfilter der Stufe PM5 (1. April 2007 – 31. März 2011)	
Euro 2	Otto	13,20 DM		6,14 €	7,36 €	7,36 €			
	Diesel			14,83 €	16,05 €	16,05 €		seit 1. April 2007	
Euro 1	Otto	13,20 DM	13,20 DM	10,84 €		15,13 €		seit 1. Januar 2005	
	Diesel	37,10 DM		23,06 €	23,06 €	27,35 €		seit 1. April 2007	
nicht schadstoffarm (Fahren bei Ozonalarm erlaubt)	Otto	21,60 DM	21,60 DM			21,07 €		seit 1. Januar 2005	
	Diesel	45,50 DM	45,50 DM			33,29 €		seit 1. Januar 2005	
schadstoffarm (Fahren bei Ozonalarm nicht erlaubt)	Otto	13,20 DM	33,20 DM (16,98 €)	21,07 €	25,36 €	25,36 €		seit 1. Januar 2005	
	Diesel	37,10 DM	57,10 DM (29,20 €)	25,36 €	33,29 €	37,58 €		seit 1. Januar 2005	
übrige	Otto	18,80 DM / 21,60 DM				25,36 €			
	Diesel	42,70 DM / 45,50 DM	72,50 DM (37,58 €)	37,58 €	37,58 €	37,58 €			

Shouldn't California be a paradise?

	Germany	California
Population	83.02 million	39.54 million
Area	357,582 km ²	423,970 km ²
Area per inhabitant	4,307 m ²	10,723 m ²
GDP	\$3,863 billion	\$3,200 billion
GDP per inhabitant	US\$ 46,653	US\$ 80,563
Electricity consumption	558 TWh	260 TWh
Electricity consumption per inhabitant	6,721 kWh	6,576 kWh

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No! It became a country of emigration!

California is like living on a high wire,

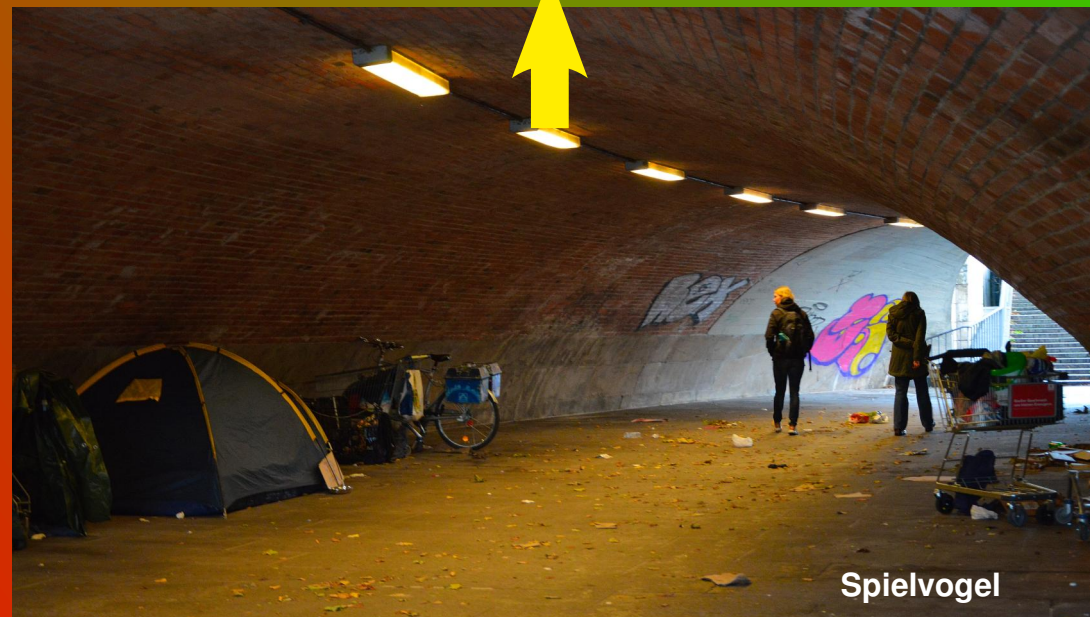
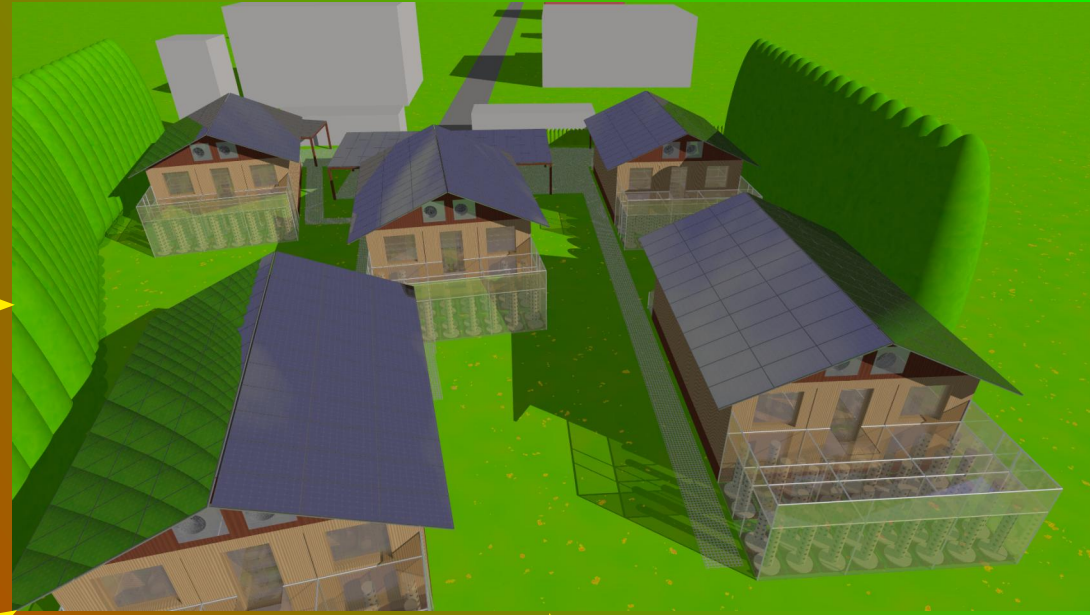


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any mistake can end here.

Energy

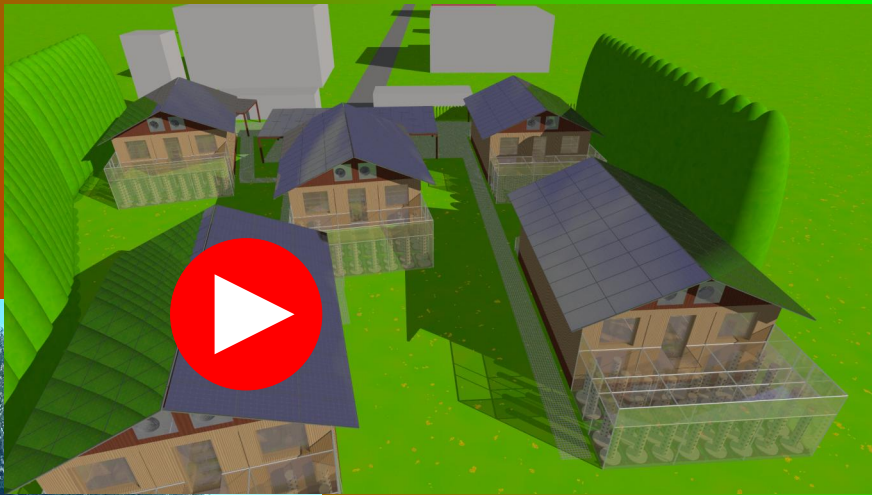
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