

**ALPSTAR: Towards Carbon Neutral Alps – Make Best Practice
Minimum Standard, Chambéry, 27th October 2011**

Climate protection or perspectives for a good live?

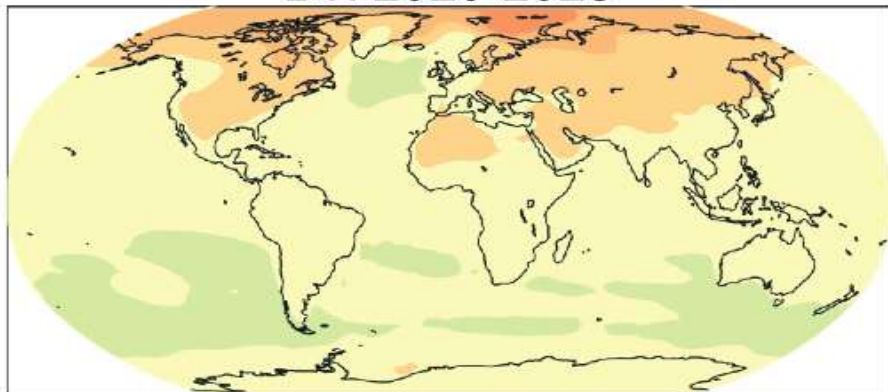
Adolf Gross

**Head of department for Energy, climate protection and efficient resource use
Vorarlberg provincial government, Austria**

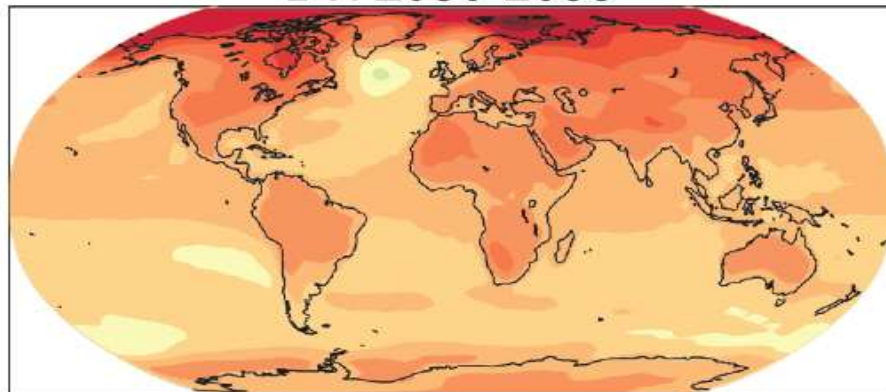
Why thinking foresighted

- climate protection – cutting down CO₂ emissions by 2050 in correspondence to IPCC-recommendations
- peak oil, resource shortages
- dependency and security of supply
- risk reduction
- development and peacekeeping
- ensuring flourishing of future generations

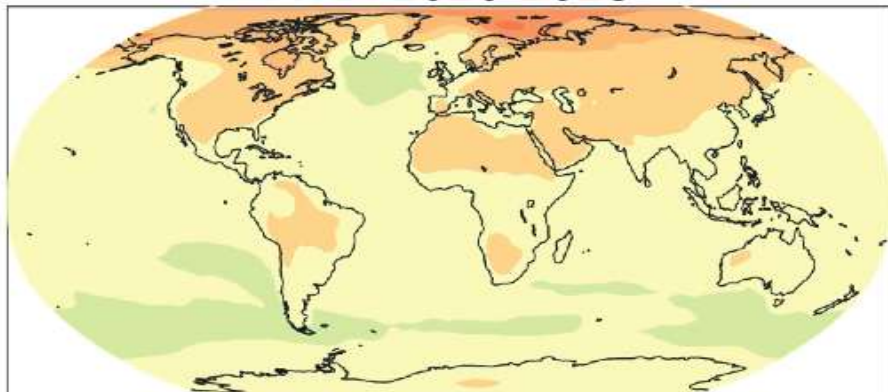
B1: 2020-2029



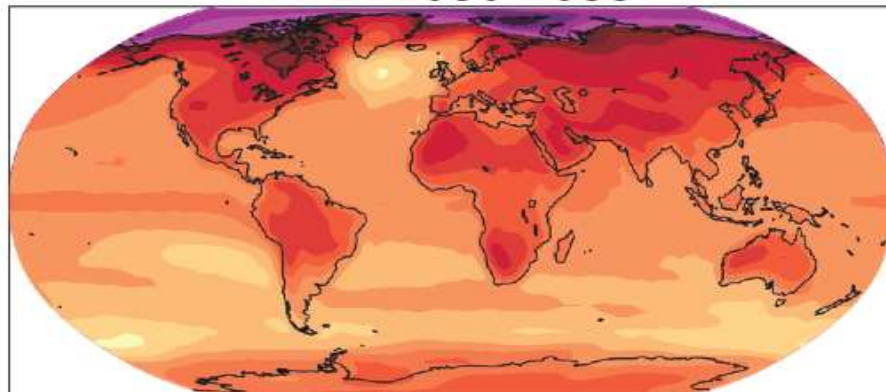
B1: 2090-2099



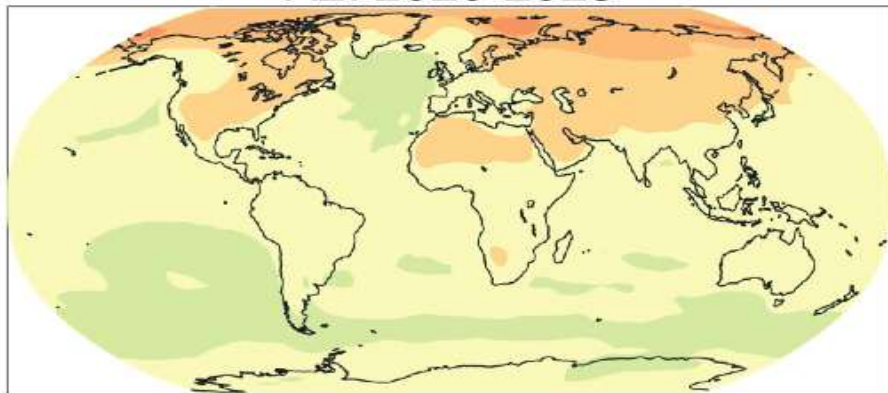
A1B: 2020-2029



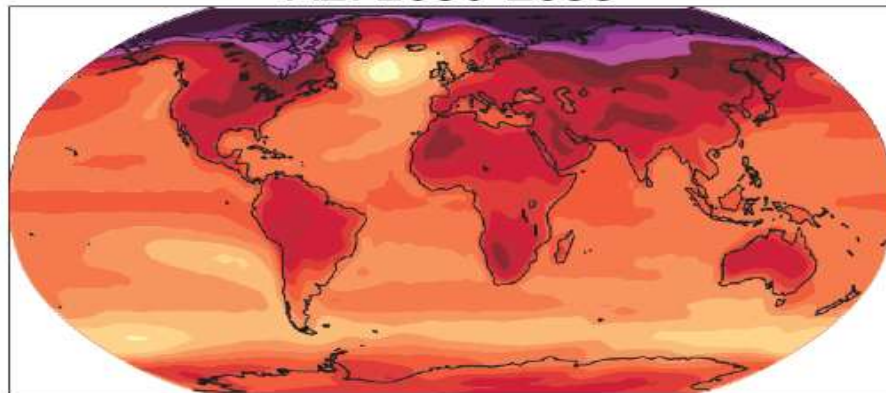
A1B: 2090-2099



A2: 2020-2029



A2: 2090-2099

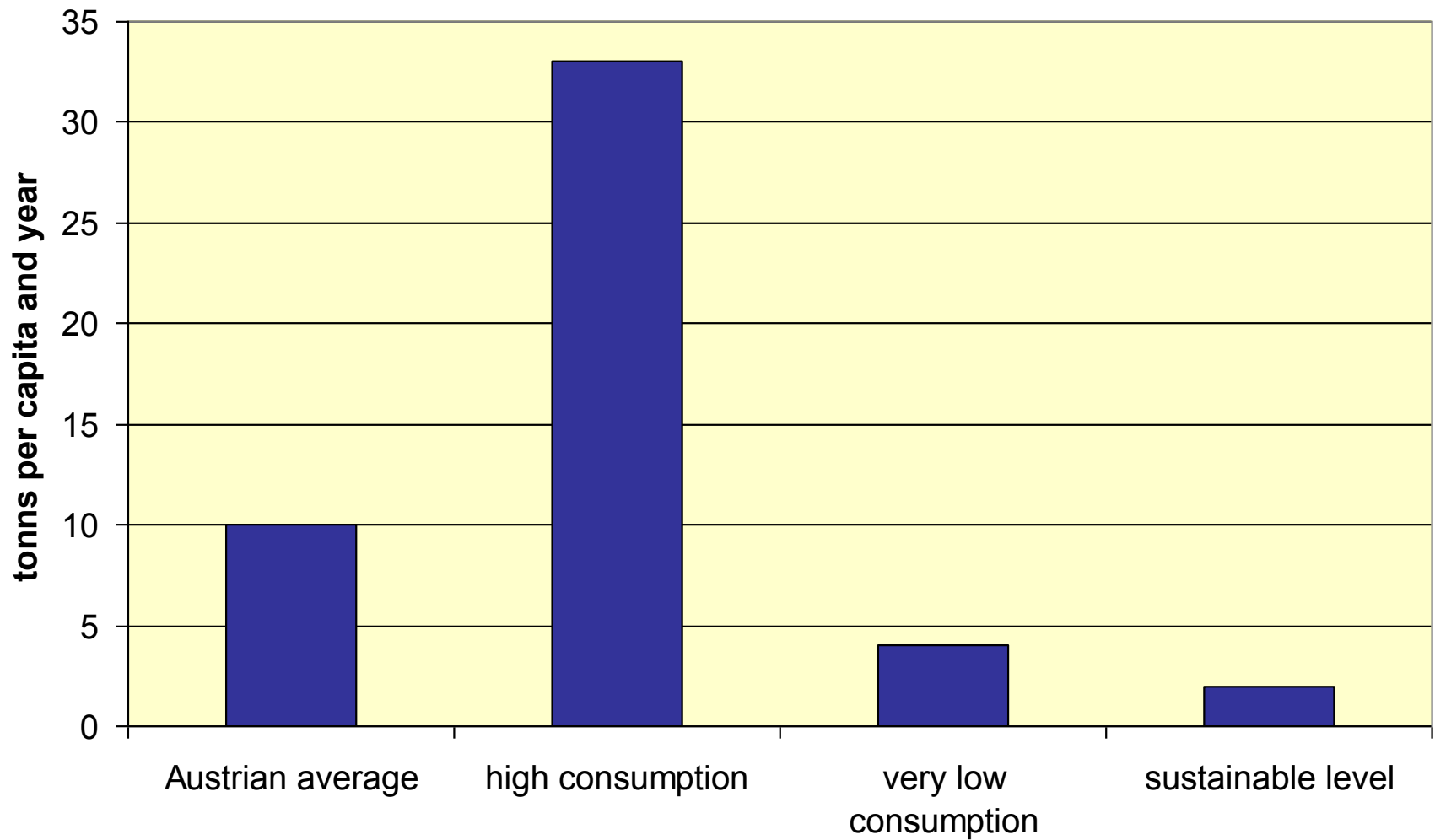


Where to go – the 2°C limit

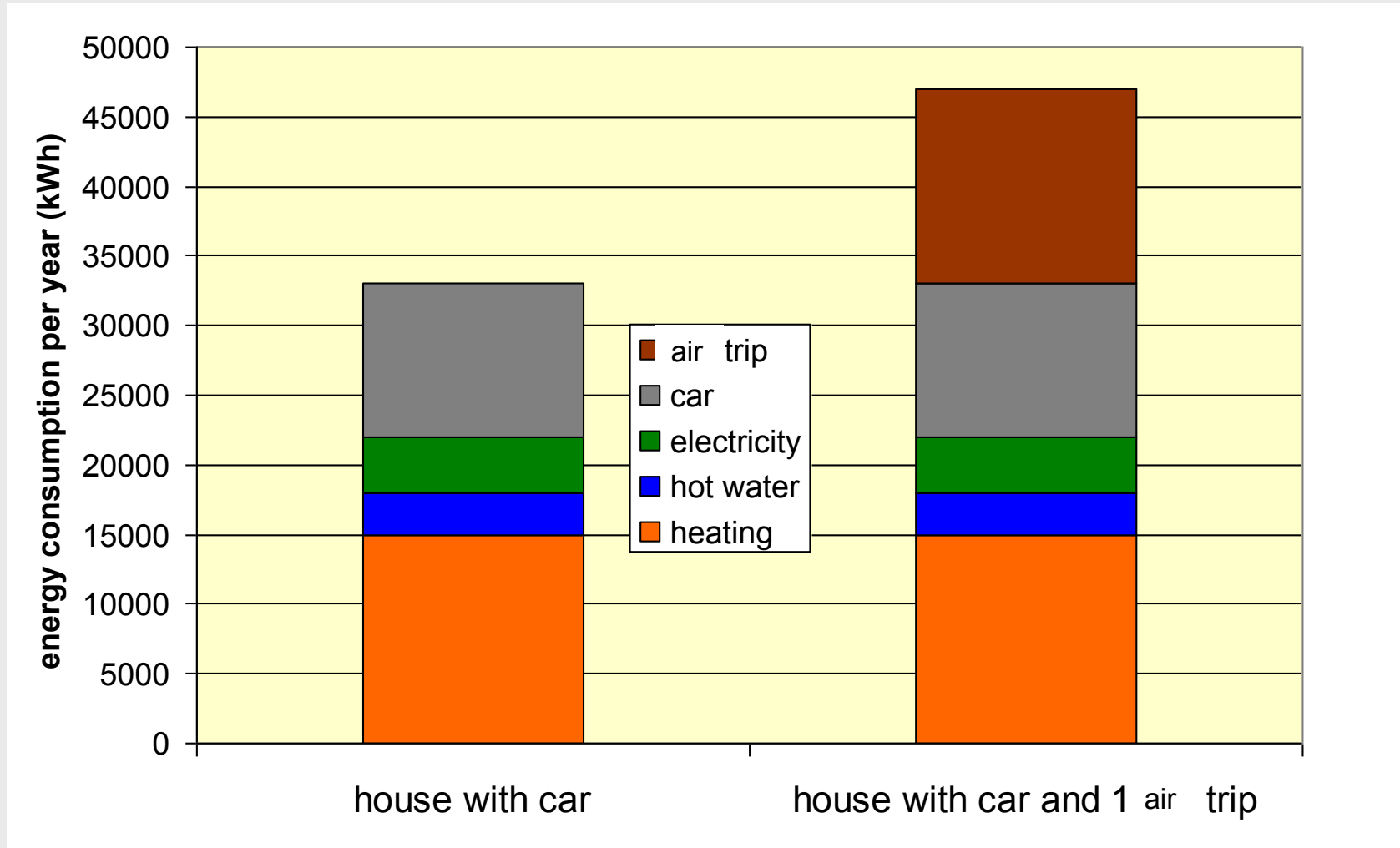
Tabelle SPM.5: Kenndaten von nach dem TAR entstandenen Stabilisierungsszenarien [Tabelle TS2, 3.10]^{a)}

Kategorie	Strahlungsantrieb (W/m ²)	CO ₂ Konzentration ^{c)} (ppm)	CO ₂ -Äq.-Konzentration ^{c)} (ppm)	Mittlerer globaler Gleichgewichtstemperaturanstieg über die vorindustriellen Werte unter der Verwendung einer „bestmöglichen Abschätzung“ der Klimasensitivität ^{b), c)} (°C)	Jahr maximaler CO ₂ -Emissionen ^{d)} (Jahr)	Änderung der globalen CO ₂ -Emissionen im Jahr 2050 (% der 2000er Emissionen) ^{d)} (Prozent)
I	2.5–3.0	350–400	445–490	2.0–2.4	2000–2015	-85 to -50
II	3.0–3.5	400–440	490–535	2.4–2.8	2000–2020	-60 to -30
III	3.5–4.0	440–485	535–590	2.8–3.2	2010–2030	-30 to +5
IV	4.0–5.0	485–570	590–710	3.2–4.0	2020–2060	+10 to +60
V	5.0–6.0	570–660	710–855	4.0–4.9	2050–2080	+25 to +85
VI	6.0–7.5	660–790	855–1130	4.9–6.1	2060–2090	+90 to +140
Gesamt						

CO₂ emissions per capita



How do we live?



there is help for it

old building
250 kWh/(m²a)



energy saving building
50 kWh/(m²a)



passive house
15 kWh/(m²a)



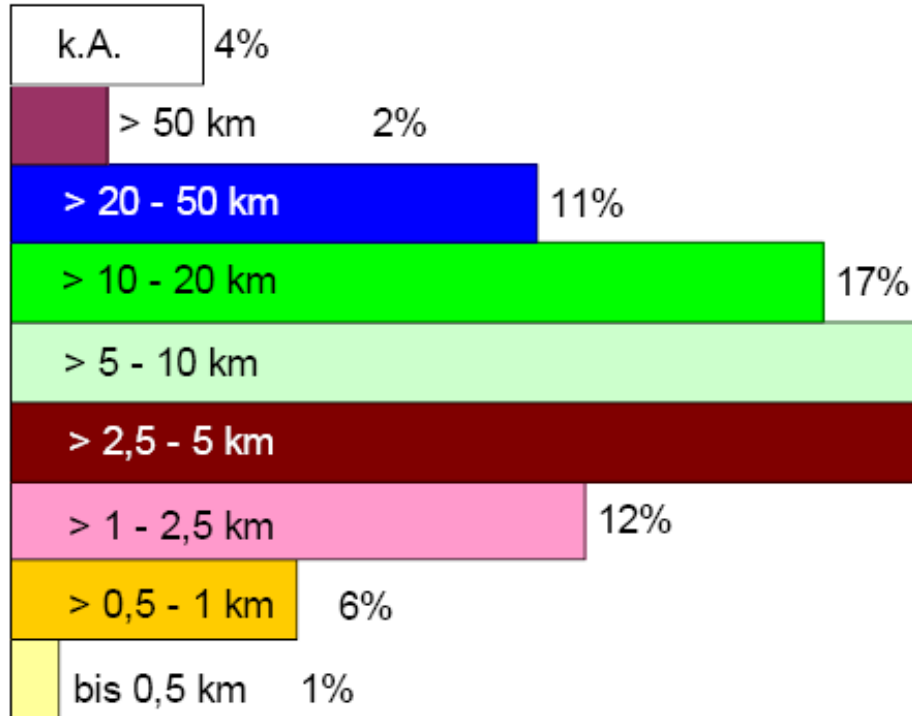
how are we mobile?

like this?

or like that?



distances by car

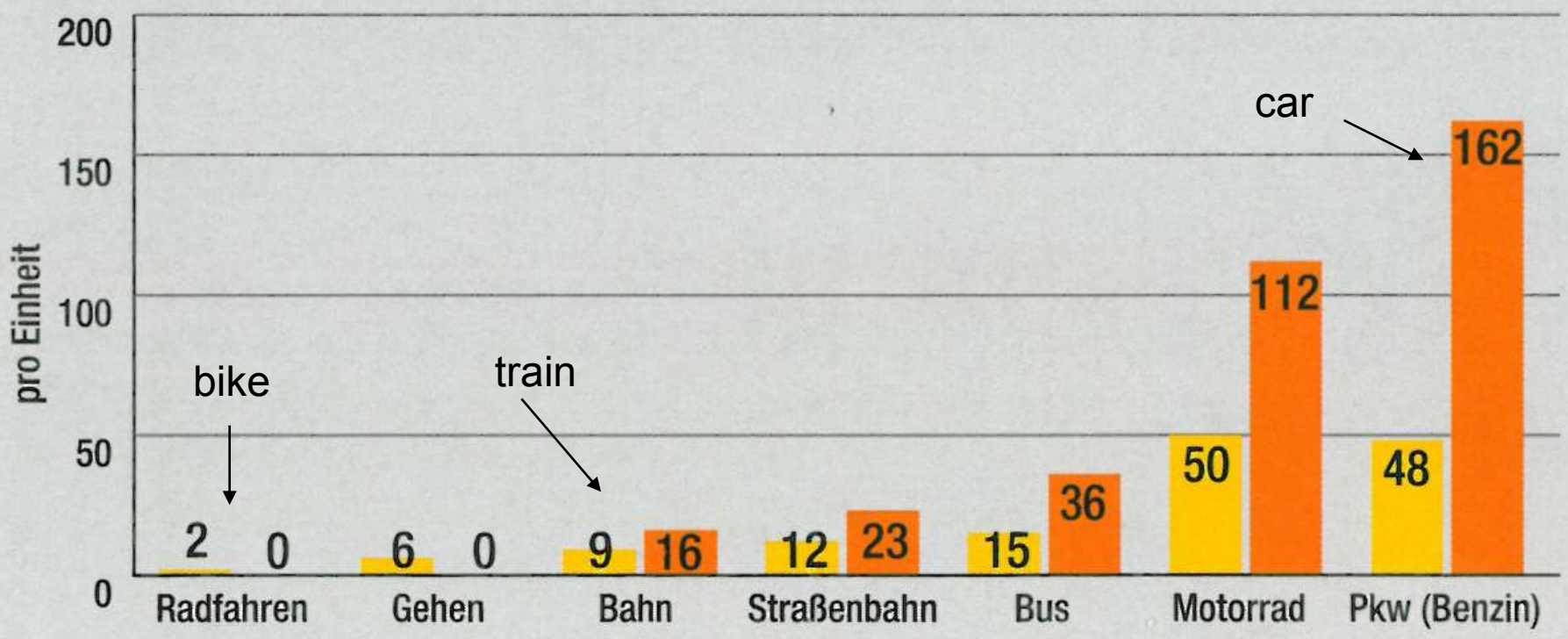


Quelle: Herry Consult (2004)

comparison of energy consumption

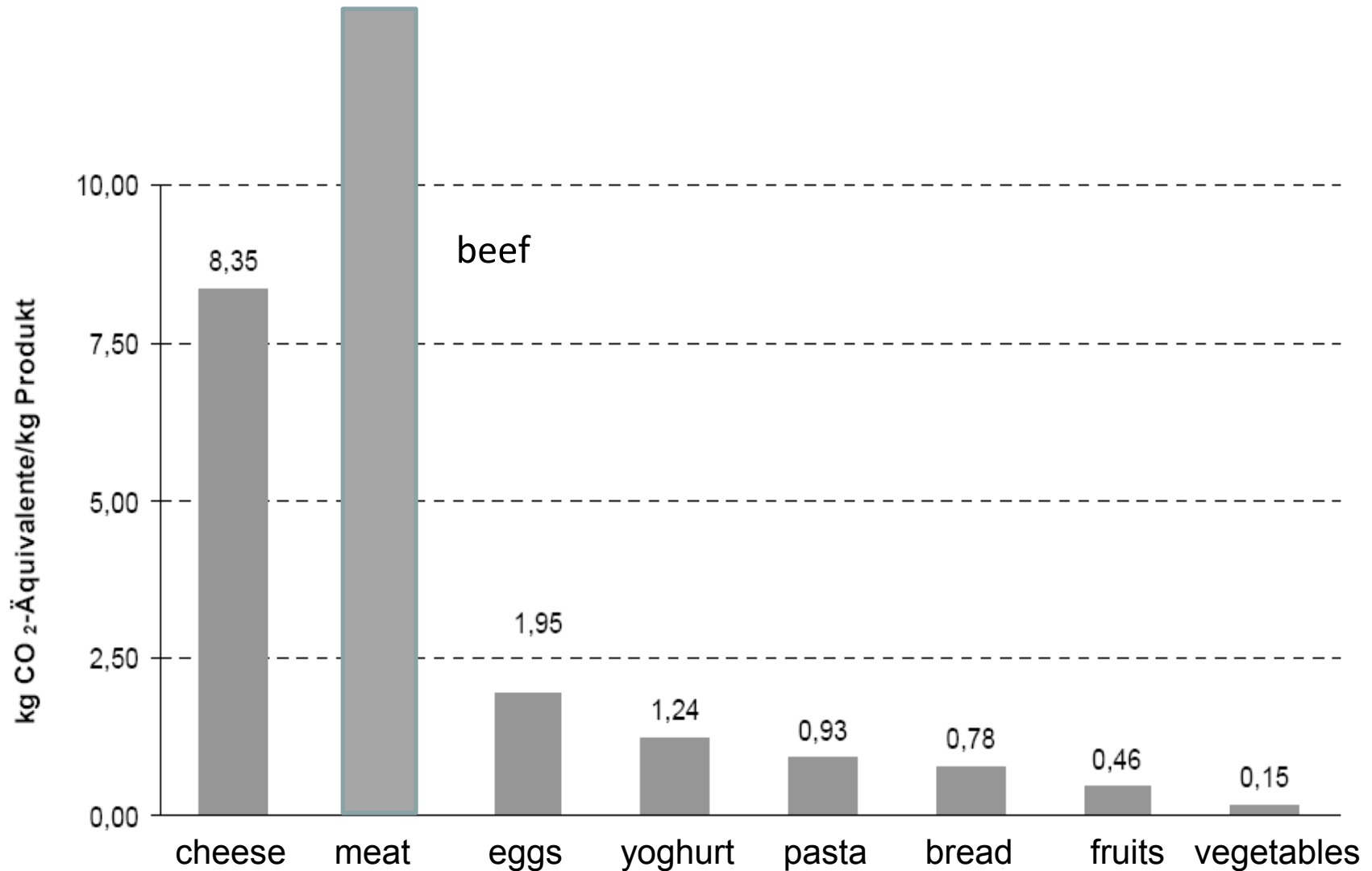
Gute Energiebilanz des Öffentlichen Verkehrs **VCO**

■ Energieverbrauch in kWh/100 Personenkilometer
■ CO₂-Emissionen in g/Personenkilometer

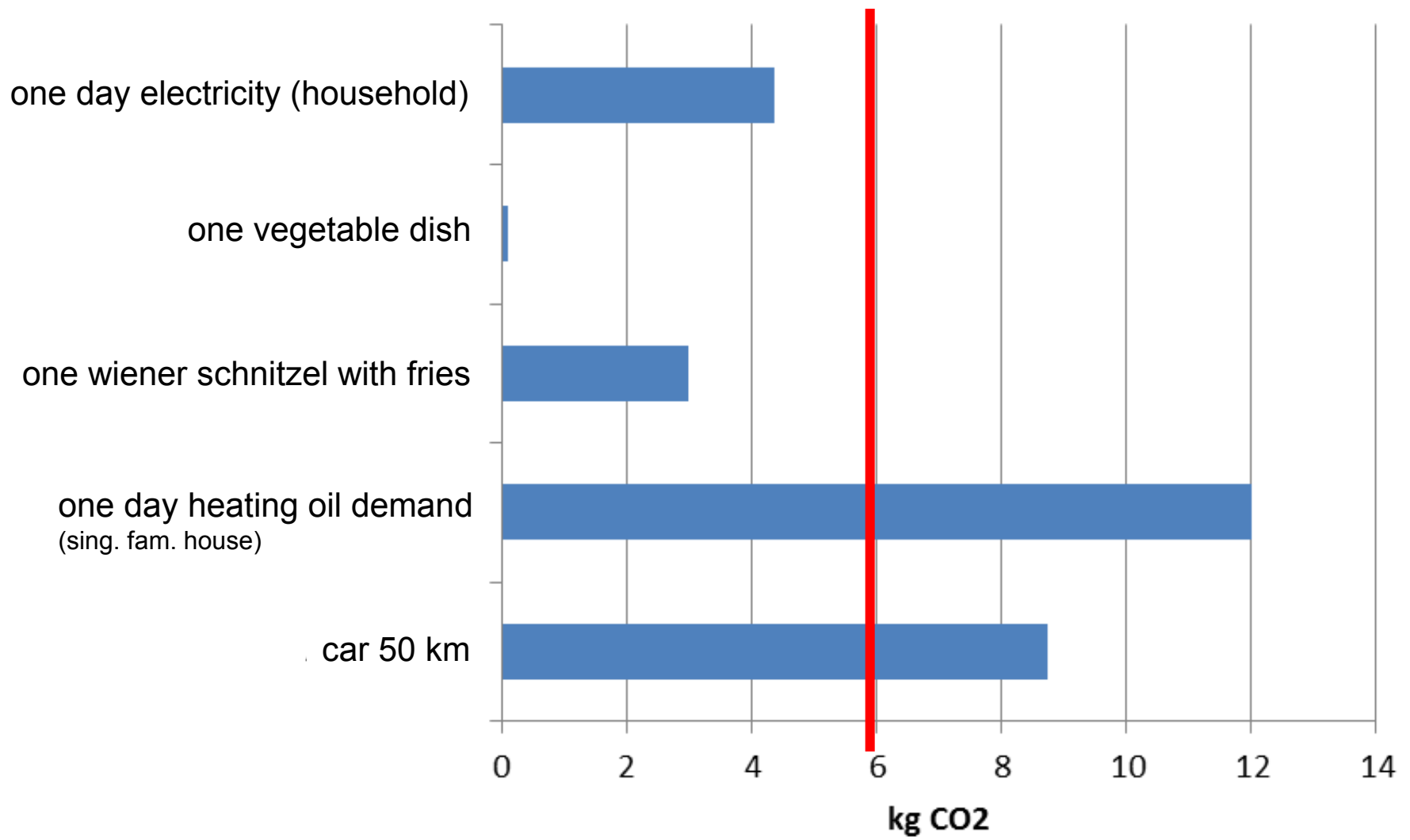


Quelle: Österreichische Energieagentur 2008/96,180
 Grafik: VCO 2010

what do we eat?



CO₂ emissions per day and the sustainable one day limit



no business as usual anymore

- the 2°C – aim is only possible when energy and resource consumption is decoupled from economic growth
- the 2°C – aim is not feasible only by improving technology
- the 2°C – aim is interlocked with other fundamental questions (like north-south justice, nutrition, biodiversity, chances of flourishing for all)

Please note that climate protection isn't primarily a technological debate, but rather a cultural task. Basic questions like how we deal with other peoples, how do we live and last but not least how do we treat our blue marble, arise. Do we foster the options of future generations? Do we hamper or even destroy them? Finally it's about the question what life we want to live.

The big transformation process

Transformation applies to a good part of living and economic areas. This task affects the society as a whole and is not delegable. It can only be overcome by involving those who are concerned, just everybody.

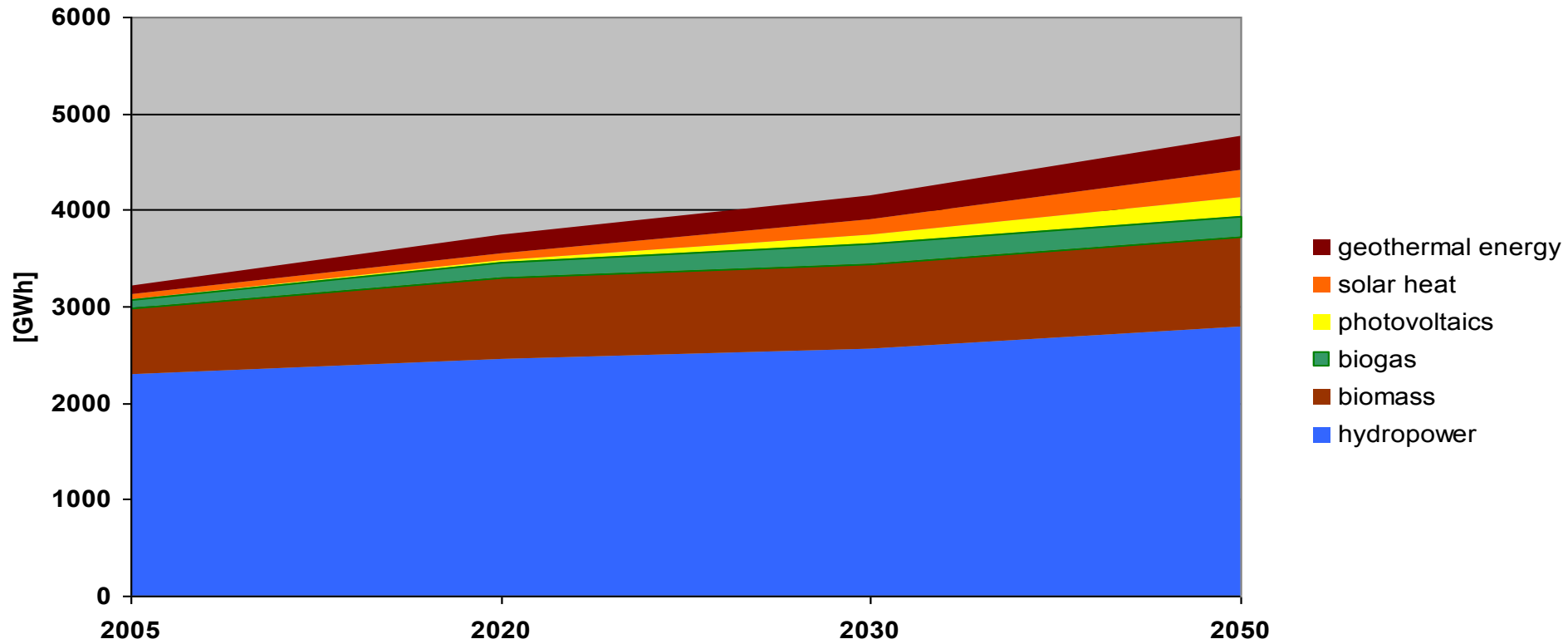
At the end of this process are the citizens who not bring to the surrender, but cause and support – through cultural participation – a society which they consider to be good.

(Harald Welzer “Das Ende der Welt wie wir sie kannten”)

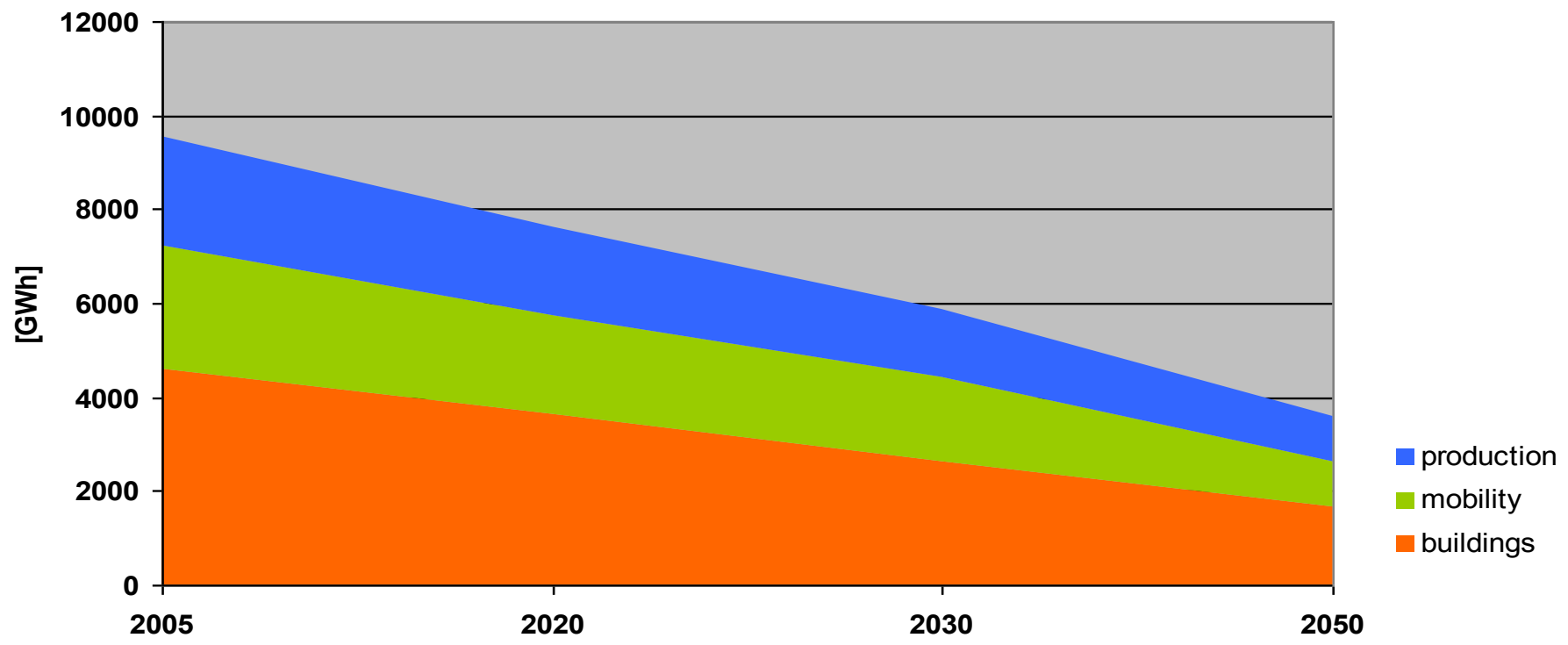
The „Energy Future Vorarlberg“ process – key questions

- Is a sustainable energy supply possible and in which time scales?
- Which level of improvement in efficiency is realistic based on current knowledge?
- Which potentials of renewable energy sources are still deducible?
- What are the basic principles in all relevant areas?
- What are the most important recommended actions?
- How does a concrete implementation program until 2020 look like?
- How do we guarantee the widest possible participation and acceptance?

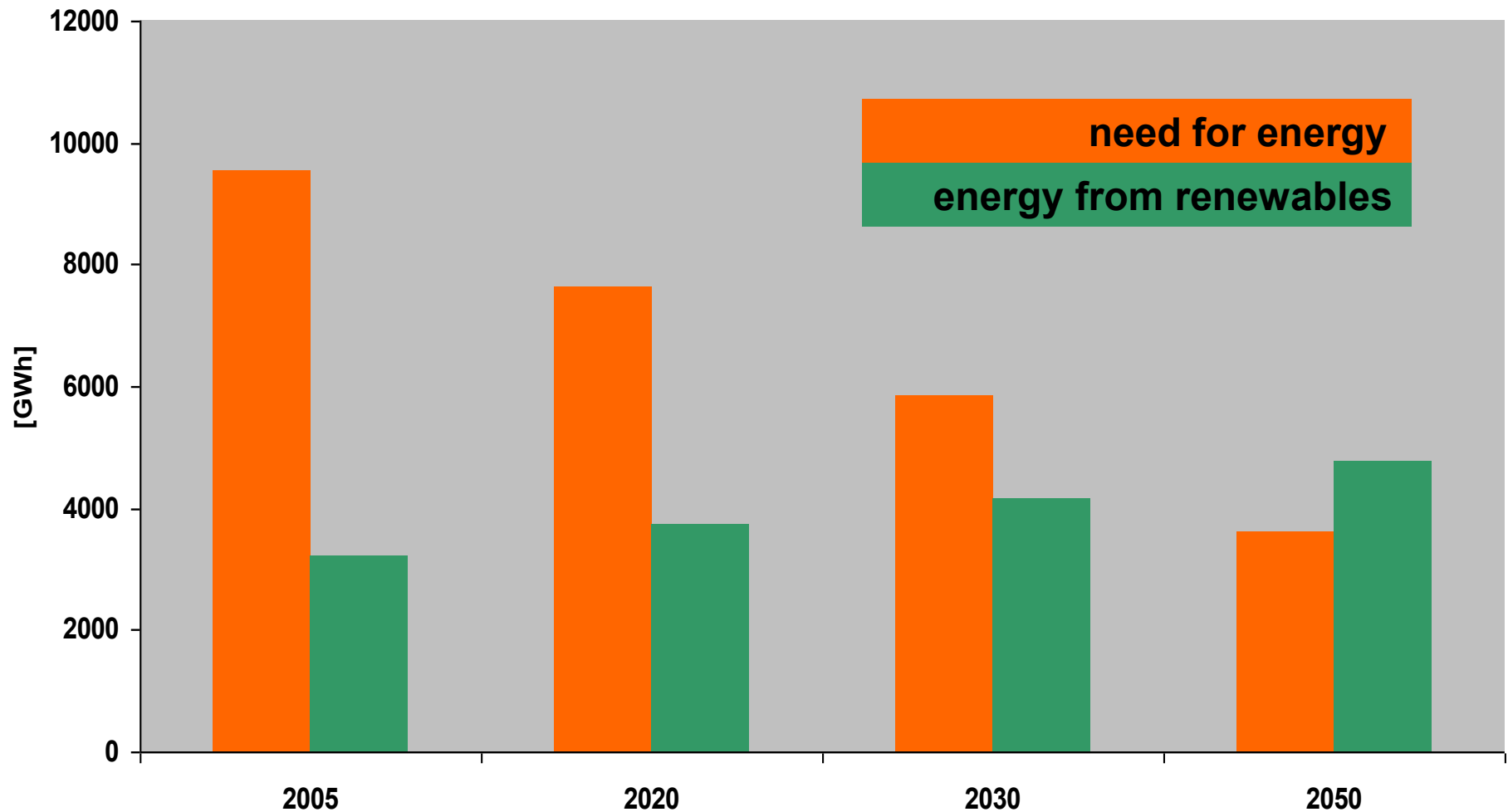
Use of renewable energy sources



Realization of efficiency potentials



The goal – autonomy in energy



climate protection is a spring for wellbeing

imaging



**... you live in a flat with high comfort, bright and warm
and, of course, fresh air all along**



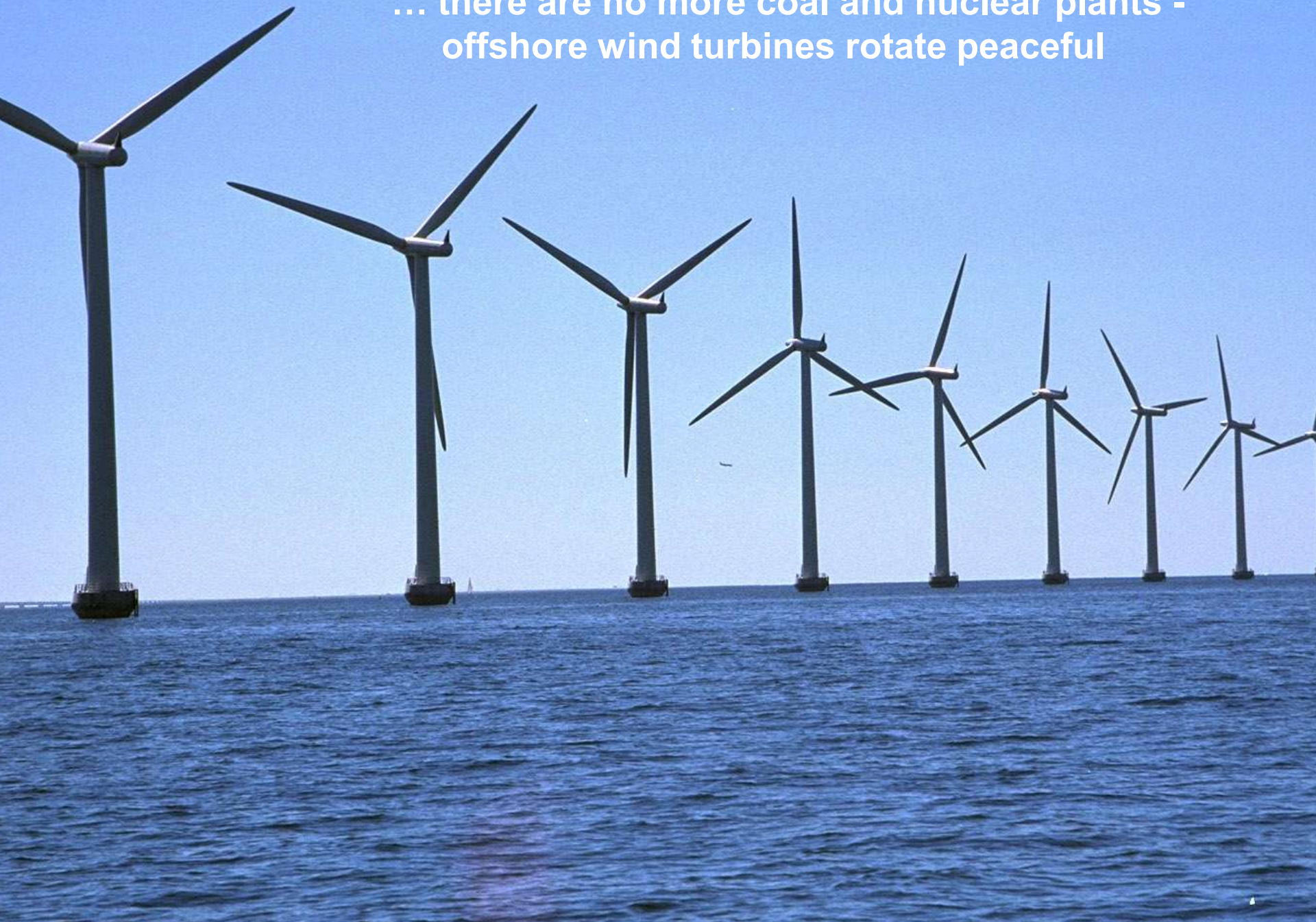
... when you leave the house it is silent, you breath salubrios air



... the building surfaces produce energy mute and emission-free



... there are no more coal and nuclear plants -
offshore wind turbines rotate peaceful



... sun power delivers energy reliable and for free



... daily needs are available around the corner



... streets are venues



... bikes are the most important vehicles for short distances





... public transportation picks you up nearby

... cities are connected with comfortable high speed trains



... the very few cars we still need run electrically





... food is farmed organically

... industry produces emission-free and is part of circular economy



step by step to energy autonomy
it is up to you (and me of course)



www.energiezukunft-vorarlberg.at