SIDE EVENT: 9 Dec. 2023, 15.00-16.30, Dubai. Blue Zone, B6 SE #7, #85 & ONLINE
Organised by INFORSE, Fraunhofer ISI, Association négaWatt, SE
Sustainable Lifestyles, Sufficiency Supporting Just Climate Action, Stronger NDCs

How Europe can reduce GHG emissions faster with emphasis on sufficiency and demand reductions, the CLEVER scenario for EU-27

CLEVER - a Collaborative Low Energy Vision for the European Region

Yves Marignac
Spokesperson and Senior Advisor
Association négaWatt

UNFCCC COP28 Side Event, *9 December 2023*

Clever

A Collaborative Low Energy Vision for the European Region

Collaborative — National contexts & European cohesion

- **"Bottom-up" construct**
  gathering, harmonizing, reinforcing national trajectories
  then integrating them into a European pathway

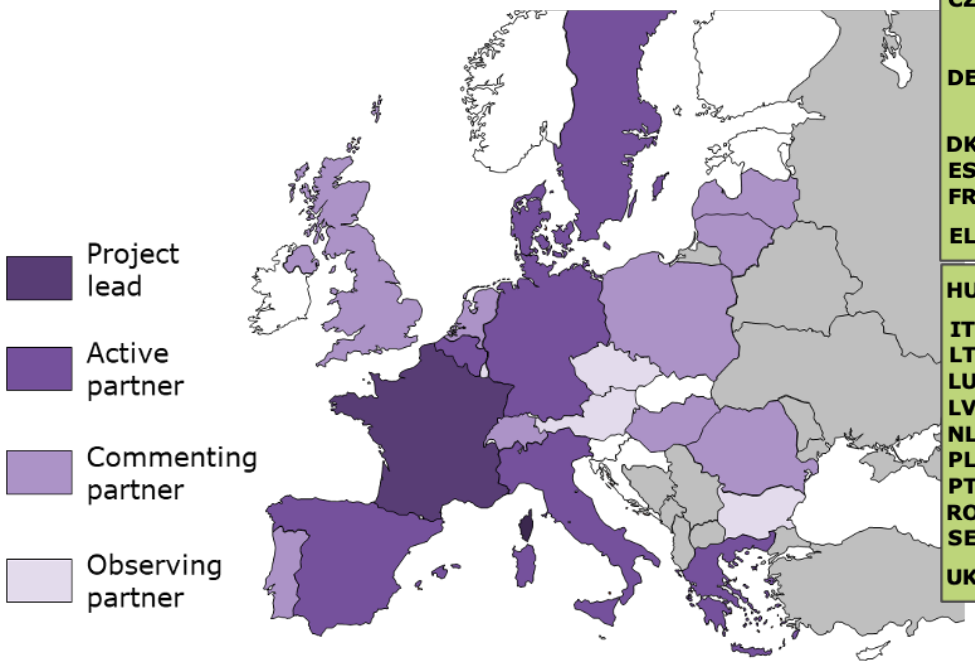
Low energy — Demand-based sustainability approach

- **Sufficiency-Efficiency-Renewables framework**
  taking into account systemic issues
  such as carriers balance or raw materials

Vision — Climate urgency & energy sovereignty

- **Net zero emissions asap**
  and by 2050 at the very latest,
  within a 1.5°C compatible carbon budget
- **100% renewable energy**
  no reliance on risky or less sustainable supply options
- **A fair and robust pathway** in line with UN-SDGs

25 partners
from **20 European countries**



AT	EEG TU Wien
BE	negaWatt Belgium, ICEDD
BG	Za Zemiata; Sofena
CH	negaWatt Switzerland
CZ	Charles University Environment Centre
DE	EnSu (Wuppertal Institut für Klima, Umwelt, Energie; Europa-Universität Flensburg; Öko-Institut)
DK	INFORSE Europe
ES	Ecoserveis Association
FR	negaWatt Association
EL	National Observatory of Athens (NOA)
HU	Environmental Planning and Education Network (EPEN)
IT	Politecnico di Milano
LT	Lithuanian Energy Institute (LEI)
LU	Consortium Cell/List
LV	Green Liberty - Zala Briviba
NL	Possible Worlds
PL	WiseEuropa
PT	ZERO
RO	Energy Policy Group (EPG)
SE	Air Clim Coalition
UK	CREDS, Center for Alternative Technologies (CAT)

Sufficiency is embedded in a global equity framework

Sufficiency means redesigning **collective and individual infrastructures and practices** to **minimise demand** *(energy, materials, land, water and other natural resources)* while delivering **human well-being for all** within **planetary boundaries**.

Adjusting nature and **amount** of **services** to keep demand impact below planetary limits

Fulfilling everyone's needs for **services** to live **a decent life**

A fair and sustainable transition

Doughnuts economics (Raworth, 2018)

Modeling sufficiency : the négaWatt experience

An approach similar to other levers

- **Not different in nature societal vs. technical**

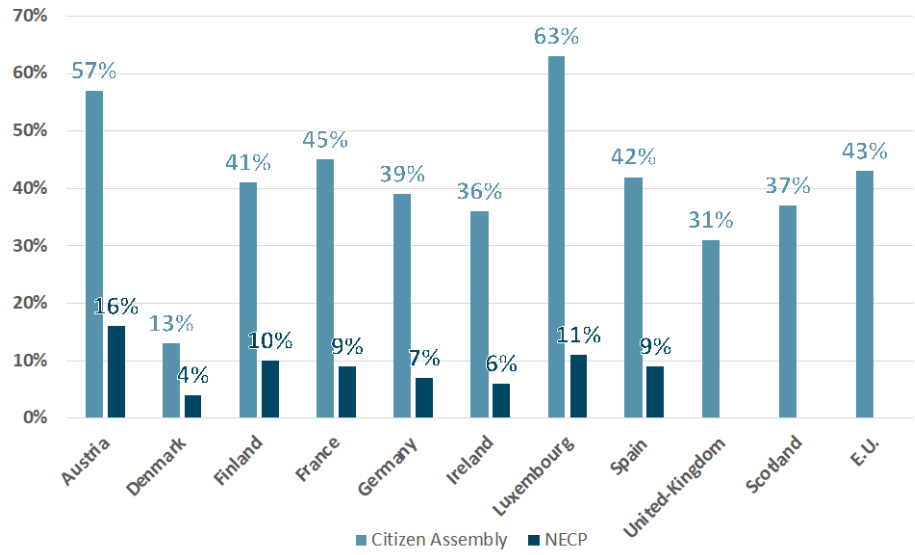
  Penetration rate of equipment in households, size of cars, choice of transport mode Combination of technical availability, consumer decisions

- **Availability of data**
- **Importance of targeted policies, incentives, infrastructure**

Obstacles to lift

- **Lack of statistical data and supporting litterature**
- **Quantifying assumptions and properly modeling them**
- **Challenges for classical techno-economic energy models to quantify energy services**

Share of sufficiency policies in total climate-mitigation policies in citizen assemblies and National Energy and Climate Plans (NECPs)



Source: article *in* Energy Research & Social Science, septembre 2023

Research:

CACTUS | STRENGTHENING CENTRAL AND EASTERN EUROPEAN CLIMATE TARGETS THROUGH ENERGY SUFFICIENCY

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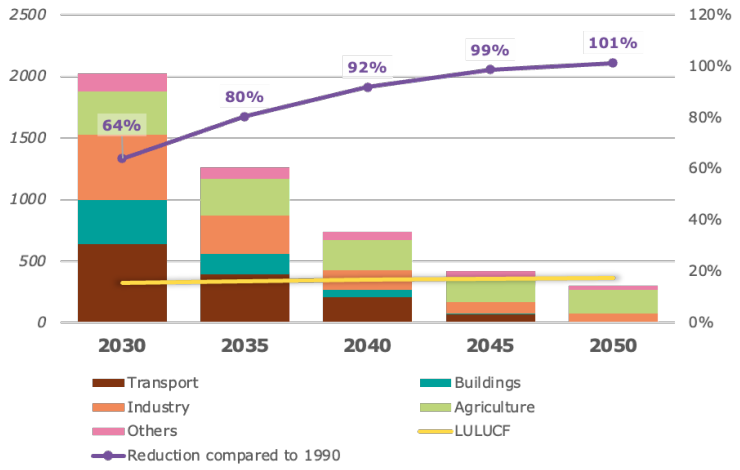
FULFILL — Fundamental decarbonisation through sufficiency by lifestyle changes

EDITS — Energy Demand changes Induced by Technological and Social innovations

enough — International Network for Sufficiency Research & Policy

Main results

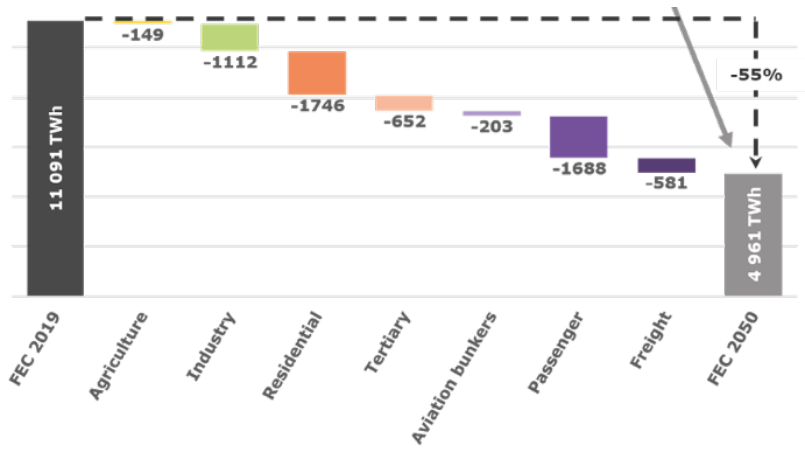
GHG emissions and reduction share / 1990 (GTCO2eq, EU-27)



1. Carbon neutrality by 2045

and a 1,5°C compatible carbon budget,
with a cautious approach of carbon sinks

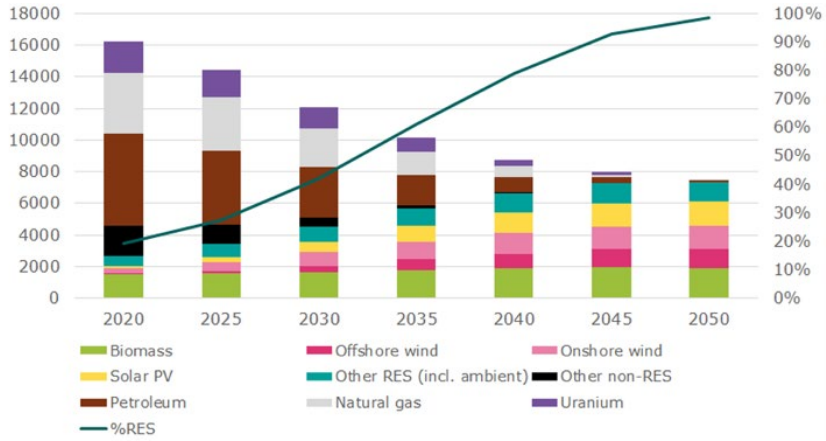
Evolution of final energy consumption (TWh, EU-27)



2. 55% reduction of final consumption

needed in all sectors,
but differentiated between countries

Evolution of primary energy supply and share of renewables (TWh, EU-27)



3. 100% renewables by 2050

phasing out of energy imports,
and based on a solidarity between countries

- Enabled by strong **cross-sectoral sufficiency** through **corridors of convergence** towards convergent level of services
- Supported by **ambitious policies**, including at the national level to support equity within countries (e.g. targeting **most unsustainable patterns of consumption**)

Sufficiency's impact in CLEVER

CLEVER EU27 trajectory:

-55% of final energy consumption

Partners trajectory:

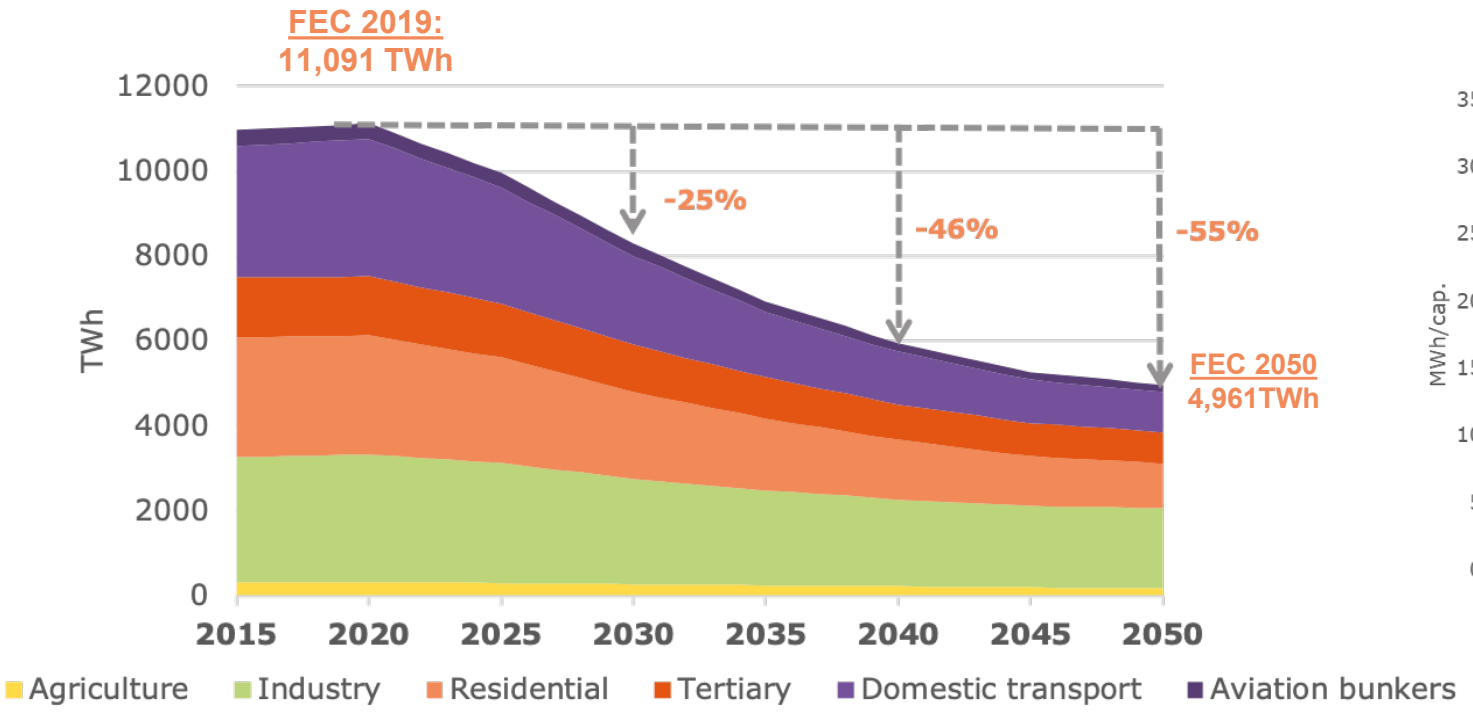
-20% to -30% due to sufficiency

Energy Consumption reductions: 2019 vs 2050

	Total FEC reduction	FEC reduction due to sufficiency
Total	-50 to -55%	-20 to -30%
Buildings *(residential and tertiary)*	-50%	-13 to -25%
Transports *(passenger mobility and freight)*	-65 to -70%	-20 to -39%
Industry	-25 to -45%	-13 to -36%

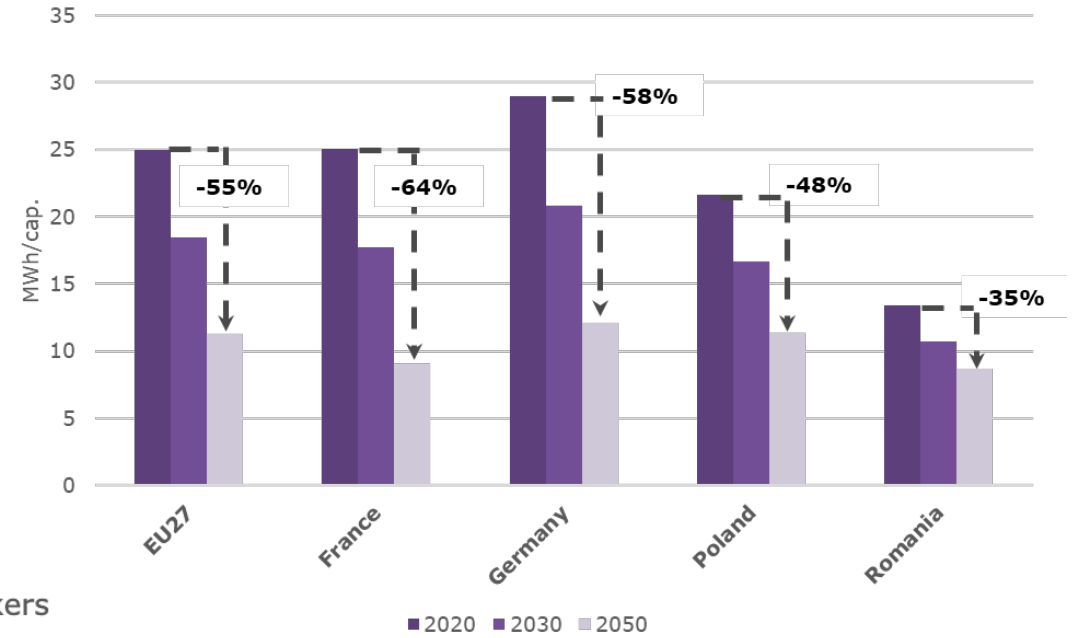
300 sufficiency policy ideas: https://energysufficiency.de/policy-database/

Europe can reduce its energy demand by -55% by 2050



EU27 Final Energy Consumption (FEC) reduction by sector and EU statistics and objectives (TWh)

Final energy consumption per capita



- Convergence of **consumption per capita**

- -55% in line with other major Global North **demand-focused scenarios**
- Official EU ambition for 2030 may fall short of setting Europe on a **Paris-compatible pathway**
- **Sufficiency is responsible for about half of the reduction**

Housing

Main sufficiency-related assumptions – Residential sector

Emergency sufficiency

- **Reduce consumption** → **Optimal settings** for heating, hot water and electrical appliances (where decent energy access allows)
- **Living space** → **Stabilise m²/p in countries** currently above 40 m²/p, minimum of 32 m²/p

Structural sufficiency

- **Appliances calibration** → **Improve appliance** size to match actual needs and uses

Evolution of floor area per capita 2020-2050 and convergence corridor (m2/hab)

Buildings

- **Land-take** limitation
- **Fiscal incentives** for small-sized living space
- Energy suppliers to propose **offers favouring low consumption**
- **Products regulation**

Mobility

Main sufficiency-related assumptions – Mobility sector

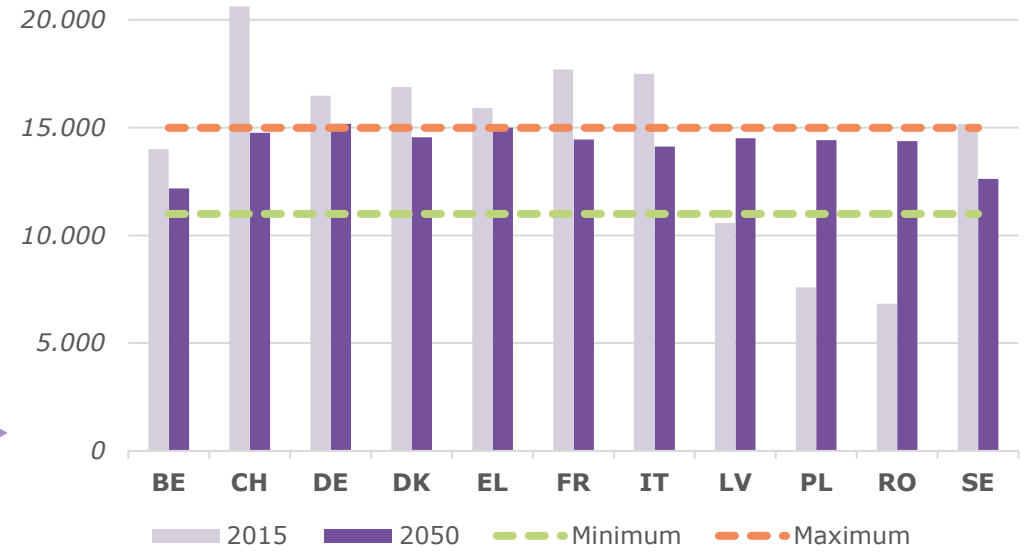
Emergency sufficiency

- **Speed limits** (30 / 110) → **110 km/h speed limit on highways in the EU27 by 2023**
  80 km/h speed limit on country roads
- **Car occupancy** → Convergence to **1.7 person/car by 2025** and **1.9 persons/car by 2050**

Structural sufficiency

- **Modal shift** → **Active mobility**: convergence to **10% of land km/cap by 2050**
  Collective transport: convergence to **35% of land km/cap by 2050**
- **Distance travelled** → **Overall passenger mobility:** convergence within the corridor **11 000 to 15 000 km/cap by 2050.**
  Specifically for **air**: convergence within **600 to 2500 km/cap by 2040**

Evolution of passenger traffic and convergence corridor (km/cap)



Transports

- Frequent **flyer levy** + **flight bans** vs. ↗ **rail services**
- **15' city**
- **Cycling and rail** infrastructure
- **Car -pooling** and **-sharing** infrastructure

Recommendations

Sufficiency first principle
can lead Europe's way
out of the crisis
and towards sustainability

- meeting 1.5°C objective
- reducing by half
  its final energy consumption
- getting independent
  of energy imports
- reaching 100% renewables
- through more equity
  and solidarity

Europe must raise its ambition and reinforce its strategy

EU 2030

- Swift and ambitious **national FitFor55 implementation and NECPs**
- **Consistency of approach**
  (ED, EPBD, RED, REPower EU…)

EU 2040

- **-90% net as minimum 2040 GHG target**, including -85% gross reductions
- **-45% FEC** and **80% RES**

Demand first and mainstreaming sufficiency

- **EC scenario building**
- **EU Governance** and **NECPs**
- **Sectoral legislation**

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Thank you!

...and more CLEVER information there

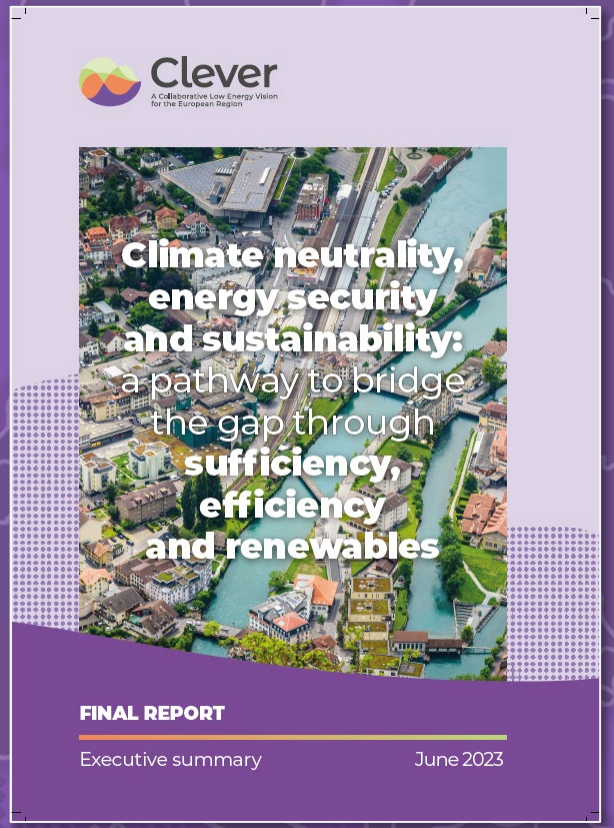
#CleverScenario

contact@clever-energy-scenario.eu

https://clever-energy-scenario.eu/

- **Final report inc. Exec Summary**
- **Scenario results at EU27, EU30 and national level**
- **Open data**
- **Technical notes**

residential, mobility, industry, AFOLUB



ADEME AGENCE DE LA TRANSITION ÉCOLOGIQUE

2050 PATHWAYS PLATFORM

WATT FOR CHANGE FONDATION VALOREM

fph

ECODOTA