



#### Paris Agreement Compatible (PAC) scenario

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# Building a civil society scenario compatible with Paris

- Collective research process of >150 members & experts
- Starting point: IPCC 1.5°C and UNEP Emission Gap Report
- Scrutinise existing studies and models







# Building a civil society scenario compatible with Paris

#### We are not the first or only ones.







### How we built our scenario

Analysis of energy demand of each sector
 Matching the yearly demand with supply
 Checking targets (GHG, EE, RES)

✓ Hourly modelling (Öko-Institut PowerFlex)

iterative approach





#### In a nutshell...

#### What we can offer...

A collective exercise that matches NGOs' demands
 An up-to-date review of climate and energy literature
 A balanced EU energy supply / demand scenario

#### ...and what we can learn from

XA global / partial equilibrium energy model
XA national / local optimisation of supply / demand
XA grid modelling exercise





## Energy demand: how much will we consume?







# Energy demand: where does the energy come from?







### Industry sector









### **Residential sector**





CAN



## **Tertiary sector**







# **Agriculture sector**









#### **Transport sector**







# Uptake of solar and wind is key







# Flexibility options: How to keep the lights on







Illustration: AEE

# The PAC scenario is a learning document

#### **Open questions**

?Country-specific results?Macro-economic effects?Detailed emission reduction pathways







### Thank you!





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https://www.pac-scenarios.eu/scenario-development.html





### **Backup slides**





# Non-fossil gases and fuels: how much, for whom?

#### Non-fossil gases + fuels demand EU28 [TWh]







#### **Biomass demand**







# Primary energy supply slumps with fossil fuels phase-out

#### 18,000 solar thermal heat (including CSP) geothermal energy 16,000 ambient heat captured by heat pumps ocean energy 14,000 hydro nuclear 12,000 solar PV wind 10,000 municipal solid waste (renewable) fossil gas solar thermal 8,000 bioenergy ambient heat nuclear hydro 6,000 municipal waste (non-renewable) solar ■ industrial waste (solid fuel in industry) fossil oil products 4,000 fossil gas wind 2,000 ■ fossil oil products coal bioenergy coal 0 2015 2020 2025 2030 2035 2040 2045 2050

#### Primary energy supply EU28 [TWh]



