

ENERGY  
Week  
2024

7. NOVEMBER

**PATHFINDER CONFERENCE**

**THE POWER SHIFT: WILL FLEXIBILITY AND  
SECTOR COUPLING LEAD THE WAY?**

ENERGY  
Week  
2024  
PATHFINDER CONFERENCE



Welcome

**Prof. André Bardow, ETH Zurich**

## SWEET Call 1-2020: Integration of renewables

**PATHFNDR**

2021-2027

**EDGE**

**DeCarbCH**

**SURE**

This work was performed by the PATHFNDR consortium, which is sponsored by the Swiss Federal Office of Energy's SWEET programme for **SWiss Energy** research for the **Energy Transition**.

# PATHFNR

Analyze energy transition pathways for **renewable energy integration** in Switzerland while considering **flexibility and sector coupling** options from national to local scale.

**Energy transition pathways  
for Switzerland**

**Policy requirements and  
business strategies**

**Uses cases to enable  
flexibility and sector coupling**

**Pilot and demonstration  
projects**

**Technologies from supply  
and demand sectors**

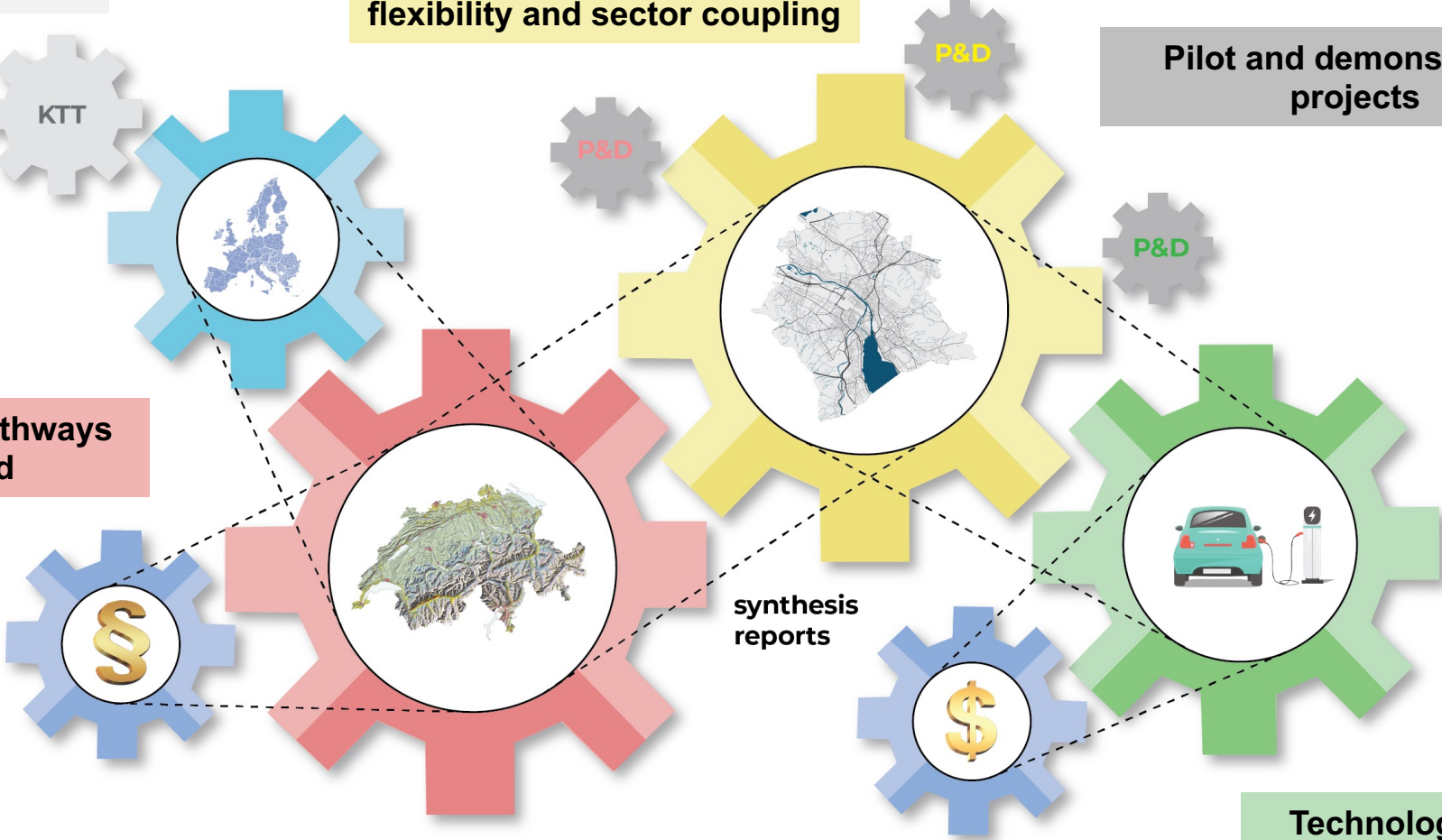
**Knowledge and  
technology transfer**

**Knowledge and technology transfer**

**Uses cases to enable flexibility and sector coupling**

**Pilot and demonstration projects**

**Energy transition pathways for Switzerland**



**Policy requirements and business strategies**

**Technologies from supply and demand sectors**

## Consortium



## Industry partners



# 68.7% of voters accepted the electricity supply act

From electricity produced in Switzerland came from...

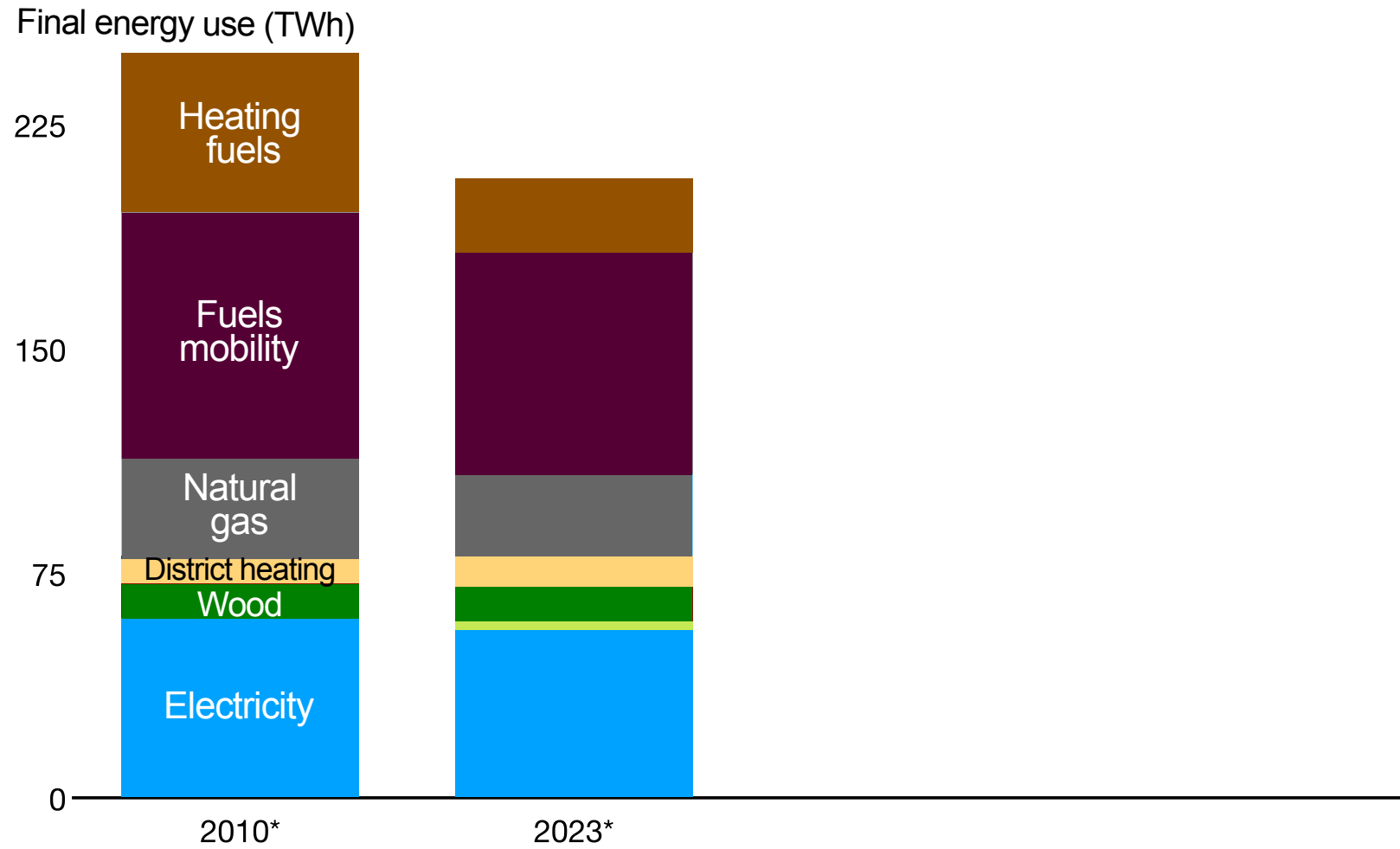
**2022** 53% hydropower plants  
36% nuclear power plants  
3% thermal power plants  
**8% “new” renewables: wind and solar**

The act supports the generation of electricity from renewable energy sources – **solar, wind and hydro!**



# Today

Mainly **fossil fuels** are used for transport and heating



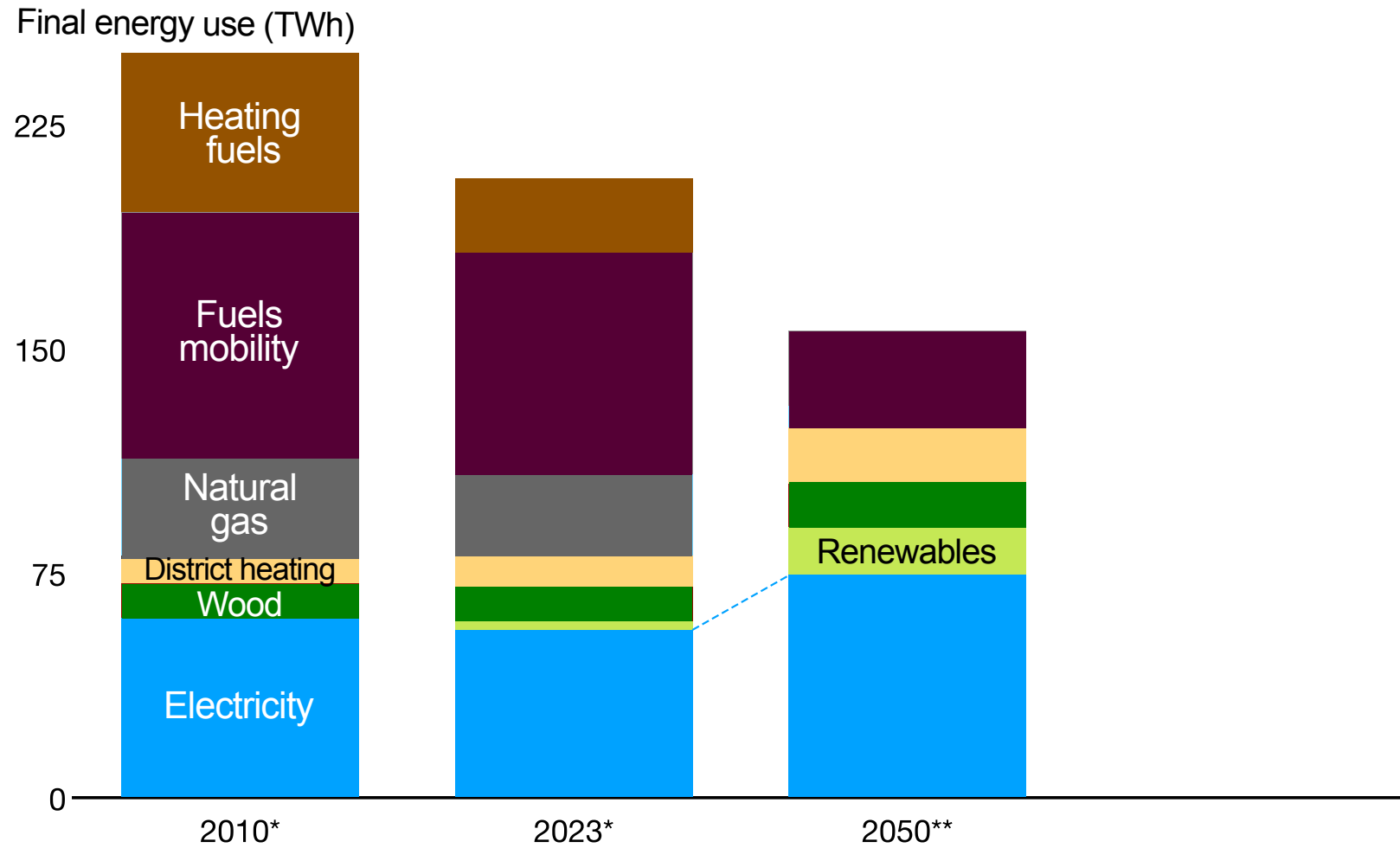
Source: \*Schweizerische Gesamtenergiestatistik 2023, Bundesamt für Energie, \*\*SWEET-CROSS Scenario (sweet-cross.ch)  
\*\*\* ohne Umweltwärme



# 2050

Fossil fuels for transport and heating may be mainly replaced with electricity.

Sector coupling!



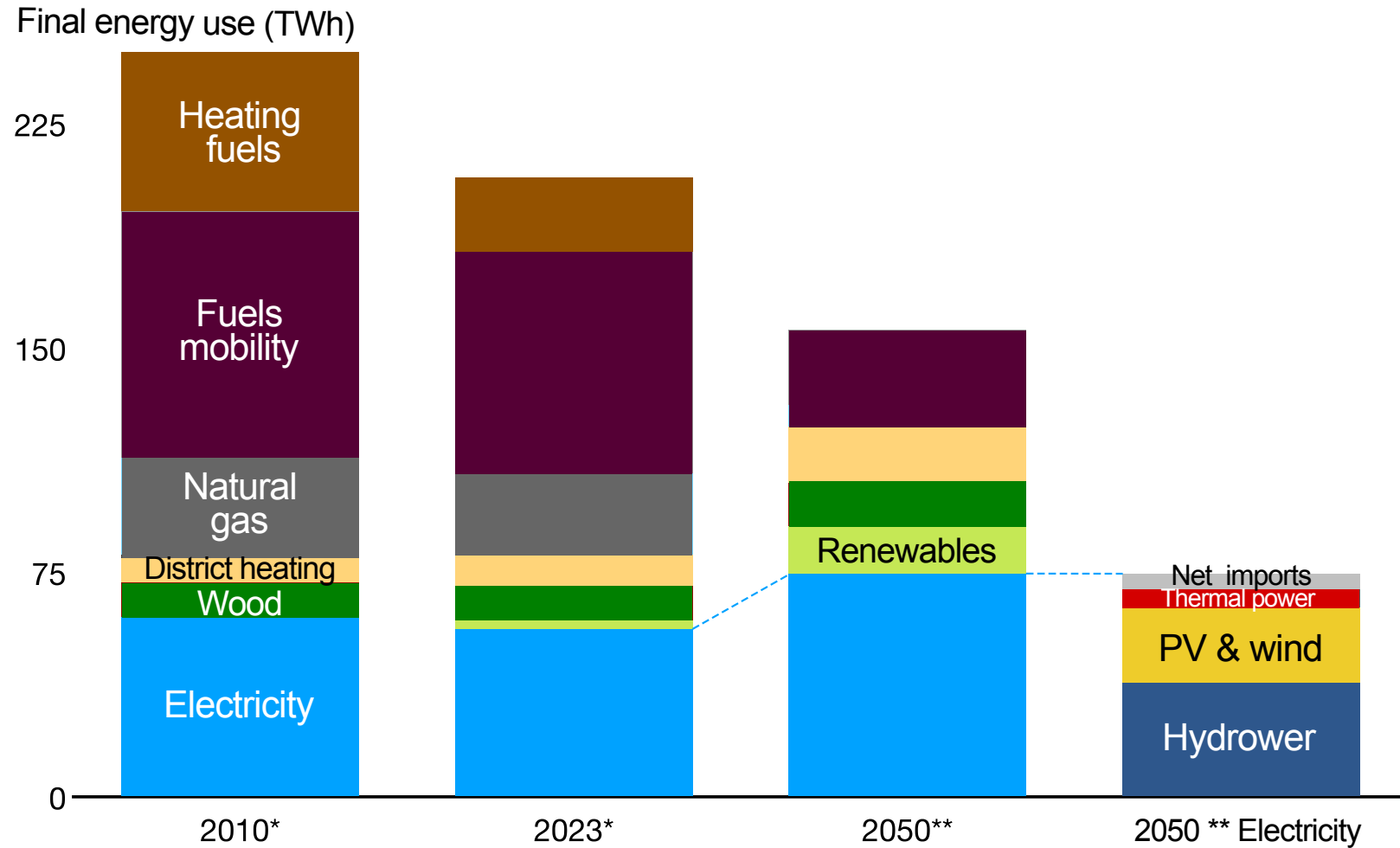
Source: \*Schweizerische Gesamtenergiestatistik 2023, Bundesamt für Energie, \*\*SWEET-CROSS Scenario (sweet-cross.ch)  
\*\*\* ohne Umweltwärme

# 2050

Fossil fuels for transport and heating may be mainly replaced with electricity.

30-50% of the electricity may be produced with intermittent photovoltaics

Flexibility!

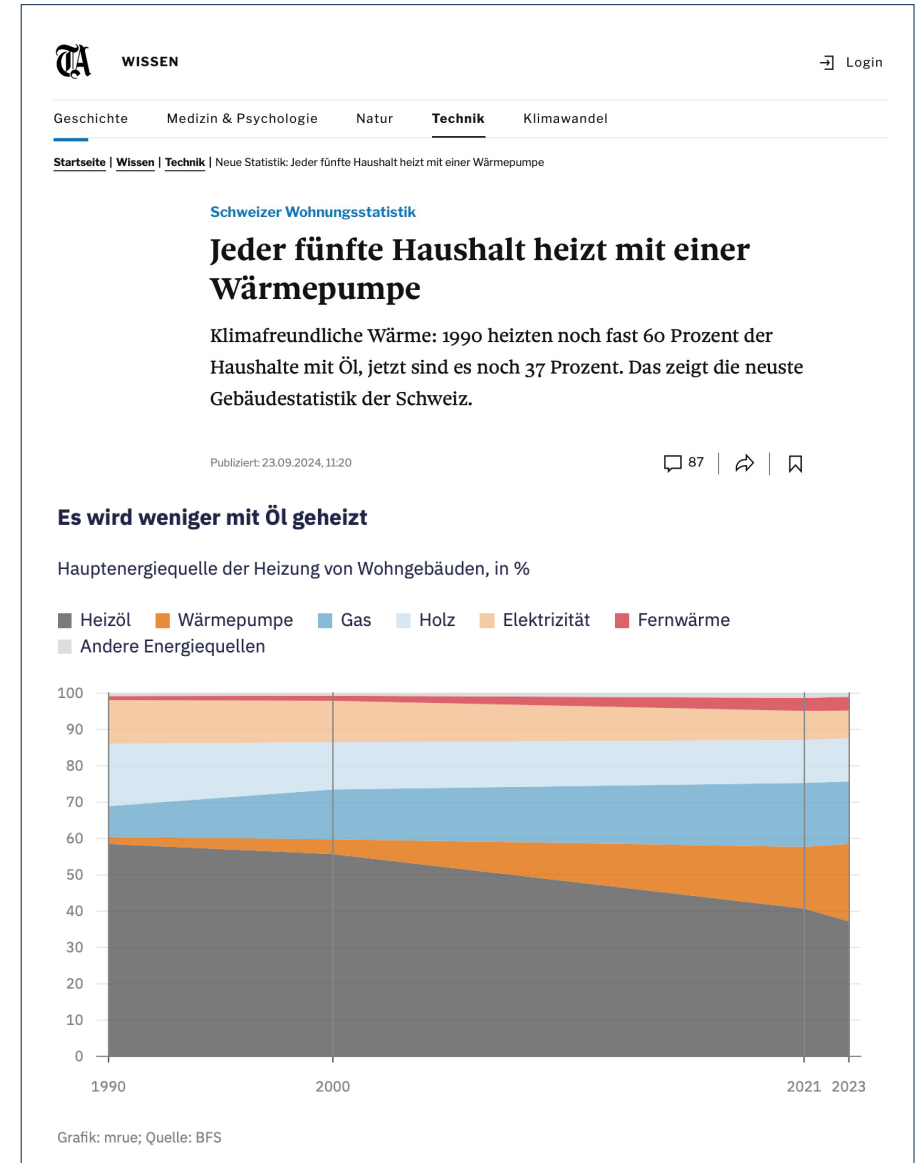


Source: \*Schweizerische Gesamtenergiestatistik 2023, Bundesamt für Energie, \*\*SWEET-CROSS Scenario (sweet-cross.ch)  
\*\*\* ohne Umweltwärme

# 21% heat their household with heat pumps

**1990**      **2% heat with heat pump**  
60% heat with oil

**2023**      **21% with heat pump**  
37% heat with oil  
17% with gas  
12% with wood  
8% with electricity  
5% with district heating



# 23% want to buy an electric car

**2023** 34% want an electric car  
31% want a hybrid car  
35% want a combustion engine

**2024** 23% want an electric car  
24% want a hybrid car  
53% want a combustion engine

The screenshot shows a news article from the website 'Blick'. The title is 'Schweizer haben keine Lust auf E-Autos' (Swiss people have no desire for electric cars). The subtitle reads 'Die Schweiz setzt auf Verbrenner: Der Wille, ein E-Auto zu kaufen, hat in der Bevölkerung massiv abgenommen, wie eine neue Umfrage zeigt.' (Switzerland bets on internal combustion engines: The willingness to buy an electric car has dropped significantly in the population, as a new survey shows). The article is dated 01.09.2024. Below the text is a bar chart titled 'Art des nächsten Autos' (Type of next car) showing the percentage of respondents who plan to buy an electric car, hybrid, or combustion engine in the next 2 years for 2023 and 2024. A second bar chart titled 'Zugang zu E-Auto-Ladestationen nach Wohnsituation' (Access to electric car charging stations by living situation) shows the percentage of respondents who have access to charging stations at home, categorized by living situation: single-family home owner, multi-story apartment owner, and tenant/partner.

☰ 🔍 📷 🌤️ 5° **Blick**

**Energiewende auf der Strasse gefährdet**

## Schweizer haben keine Lust auf E-Autos

Die Schweiz setzt auf Verbrenner: Der Wille, ein E-Auto zu kaufen, hat in der Bevölkerung massiv abgenommen, wie eine neue Umfrage zeigt.

Publiziert: 01.09.2024 um 15:11 Uhr | Aktualisiert: 01.09.2024 um 15:27 Uhr

### Art des nächsten Autos

Welche Art Auto werden Sie voraussichtlich als Nächstes anschaffen?\*

■ E-Auto ■ Hybrid/Plug-in-Hybrid ■ Verbrenner

2023 Autokauf in weniger als 2 Jahren

|        |     |                       |     |            |     |
|--------|-----|-----------------------|-----|------------|-----|
| E-Auto | 34% | Hybrid/Plug-in-Hybrid | 31% | Verbrenner | 35% |
|--------|-----|-----------------------|-----|------------|-----|

2024 Autokauf in weniger als 2 Jahren

|        |     |                       |     |            |     |
|--------|-----|-----------------------|-----|------------|-----|
| E-Auto | 23% | Hybrid/Plug-in-Hybrid | 24% | Verbrenner | 53% |
|--------|-----|-----------------------|-----|------------|-----|

\* Ohne Personen, die kein Auto (mehr) anschaffen wollen

Quelle: Umfrage Sotomo für Axa, n=1861 © Blick Grafik

### Zugang zu E-Auto-Ladestationen nach Wohnsituation

Haben Sie in Ihrer jetzigen Wohnsituation zuhause Zugang zu Parkplätzen mit Ladestationen für E-Autos?

■ Ja ■ Nein, aber ist in Planung ■ Weiss nicht ■ Nein

Eigentümer Einfamilienhaus

|    |     |                           |     |             |    |      |     |
|----|-----|---------------------------|-----|-------------|----|------|-----|
| Ja | 28% | Nein, aber ist in Planung | 16% | Weiss nicht | 5% | Nein | 55% |
|----|-----|---------------------------|-----|-------------|----|------|-----|

Eigentümer Stockwerkeigentum

|    |     |                           |     |             |    |      |     |
|----|-----|---------------------------|-----|-------------|----|------|-----|
| Ja | 33% | Nein, aber ist in Planung | 16% | Weiss nicht | 5% | Nein | 50% |
|----|-----|---------------------------|-----|-------------|----|------|-----|

Mieter, Genossenschafter

|    |     |                           |    |             |    |      |     |
|----|-----|---------------------------|----|-------------|----|------|-----|
| Ja | 15% | Nein, aber ist in Planung | 5% | Weiss nicht | 5% | Nein | 75% |
|----|-----|---------------------------|----|-------------|----|------|-----|

Quelle: Umfrage Sotomo für Axa, n=1861 © Blick Grafik

# Will flexibility and sector coupling lead the way?