

# Information and public education: key factors for a sustainable energy transition

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- In a democratic society major energy transition options need public support
- Weak knowledge about energy in the population (media!)
- Efficiency indicators often misleading (with First Law being used, boilers have the best grades → 105% efficiency !!)
- In general lack of confidence in experts “optimized” solutions with non transparent aggregated factors
- Even in university multi-disciplinary common basic knowledge is needed across sections

# Hence our new open platform: energyscope.ch



CONTACTEN

ABOUTCALCULATORCOURSE FOR ALLQUESTIONS/ANSWERS

## WHICH ENERGY FOR SWITZERLAND? Understand to choose

Switzerland must find solutions to secure its energy future, without affecting its quality of life and its prosperity. This website gives the keys to comparing different options, and helps to understand the challenges of the energy transition.

READ MORE



ENERGY CALCULATOR

Elaborate your own energy strategy

COURSE FOR ALL

Understand at your own pace

100 QUESTIONS/ANSWERS

Clear answers to your questions



Hence the need for a calculator that can be both

- informative (understand the government scenarios, ...) and
- gives the possibility to built one's own scenario and to assess the consequences.

- inspired by Mackay in UK (DECC) but adapted:

- to Swiss situation
- to be sequential (avoid the black box negative effect)
- to account for the seasonal asymmetry (average monthly representation)

- Avoid commercial sponsors
- Avoid emotional and stick to facts
- Provide a transparent and adaptable model
  - Use Ecoinvent for environmental data
- User friendly: 2 levels (simplified and advanced versions)
- Reduce to 6 indicators (final energy +waste heat, electricity, part of renewable, CO<sub>2</sub> equ., long term wastes, and cost)
- Target: decision makers, voters

# Electricity, Gas, Diesel and Wood ?



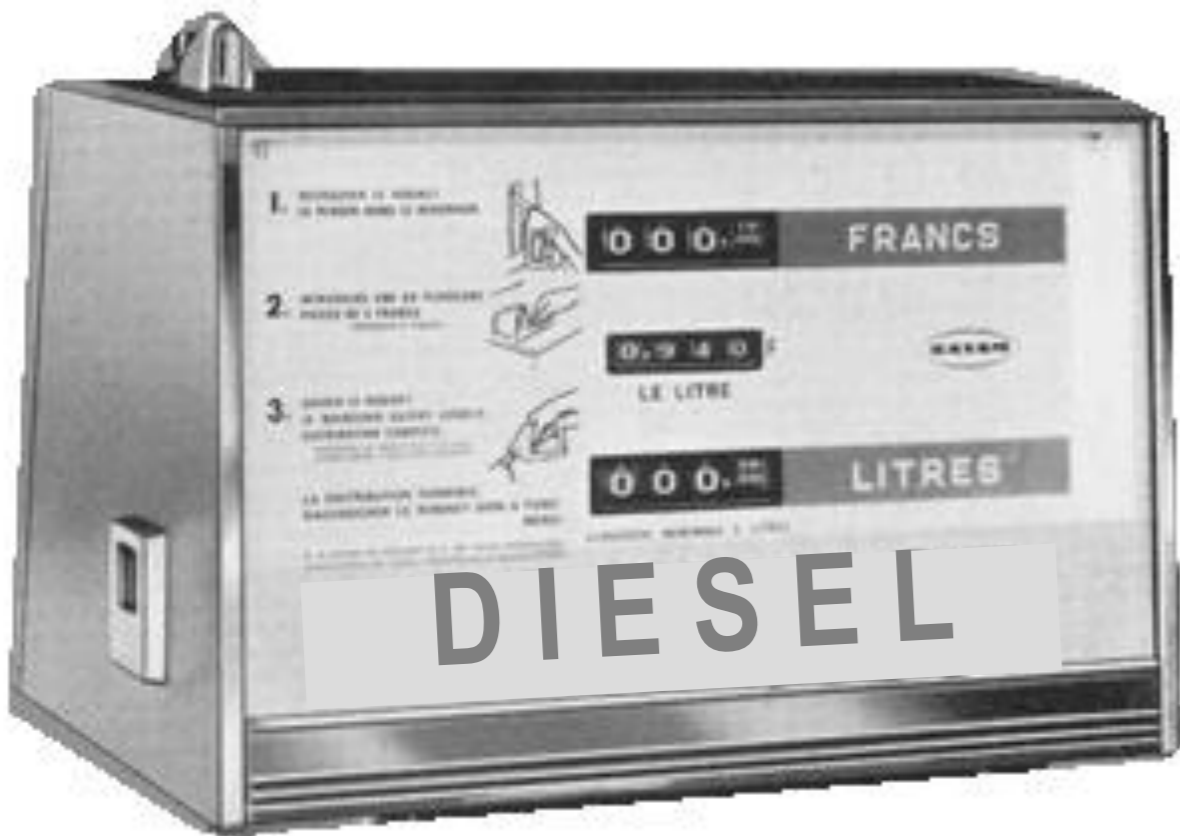
Electricity

1 kWh



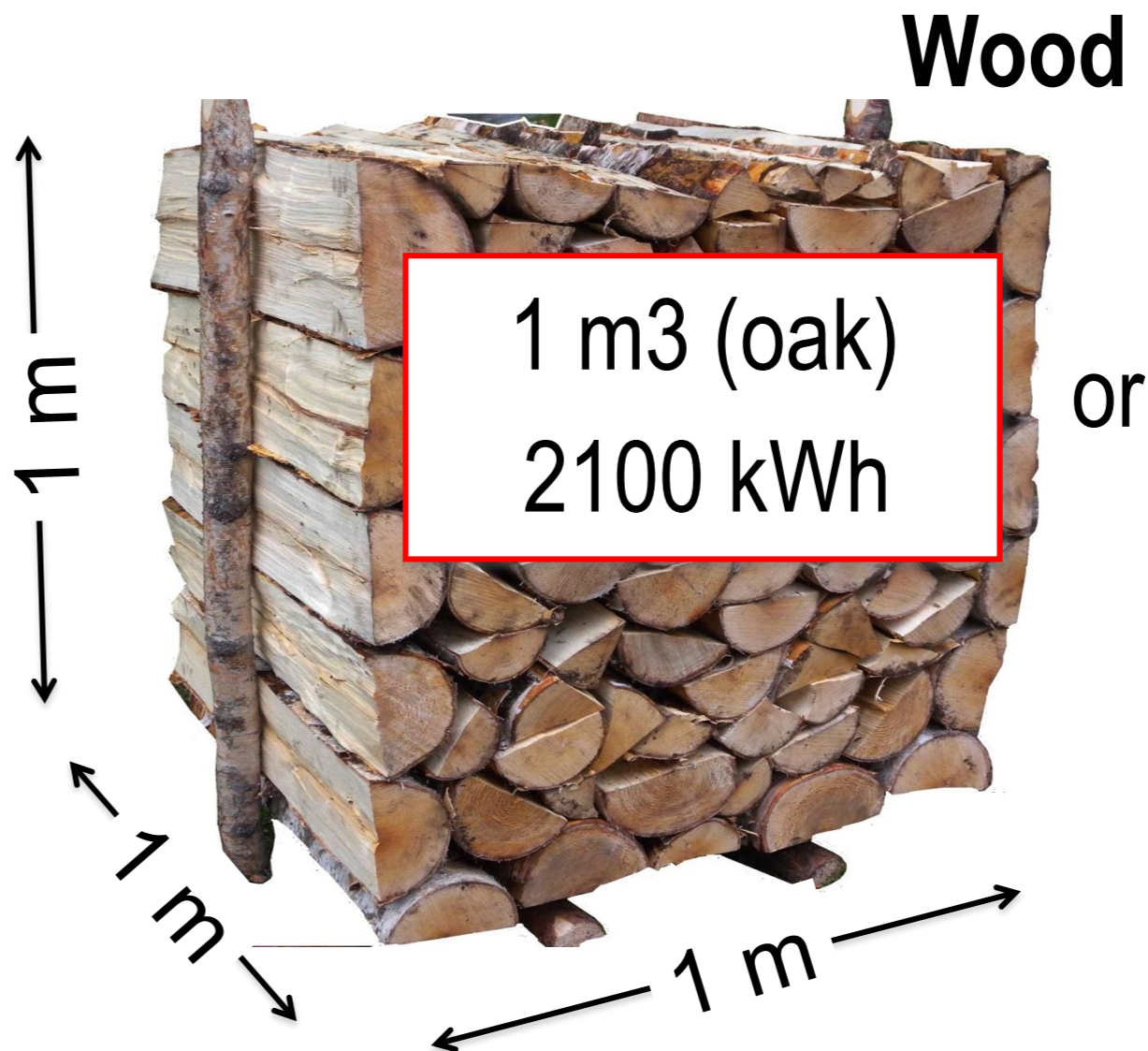
Natural Gas

1 m³  
11.2 kWh



Diesel

1 litre  
10 kWh



# Yearly, seasonal, monthly

ios for Switzerland

Advanced version ▾

QUIZ

VIDEO

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Language ▾

2011

TO

CHOOSE

More actions ▾

Final energy

Electricity

Renewables

CO<sub>2</sub>

Waste

Cost

All

GWh

Final energy consumption per application (GWh)

2011

monthly

40'000

35'000

30'000

25'000

20'000

15'000

10'000

5'000

0

J

F

M

A

M

J

J

A

S

O

N

D



Fixed scale



Show all colors

**Legend**

Click an entry to show/hide

2011

Waste heat

Transport

Industry (th.)

Hot water (th.)

Space heating (th.)

Transport (el.)

Industry (el.)

Hot water (el.)

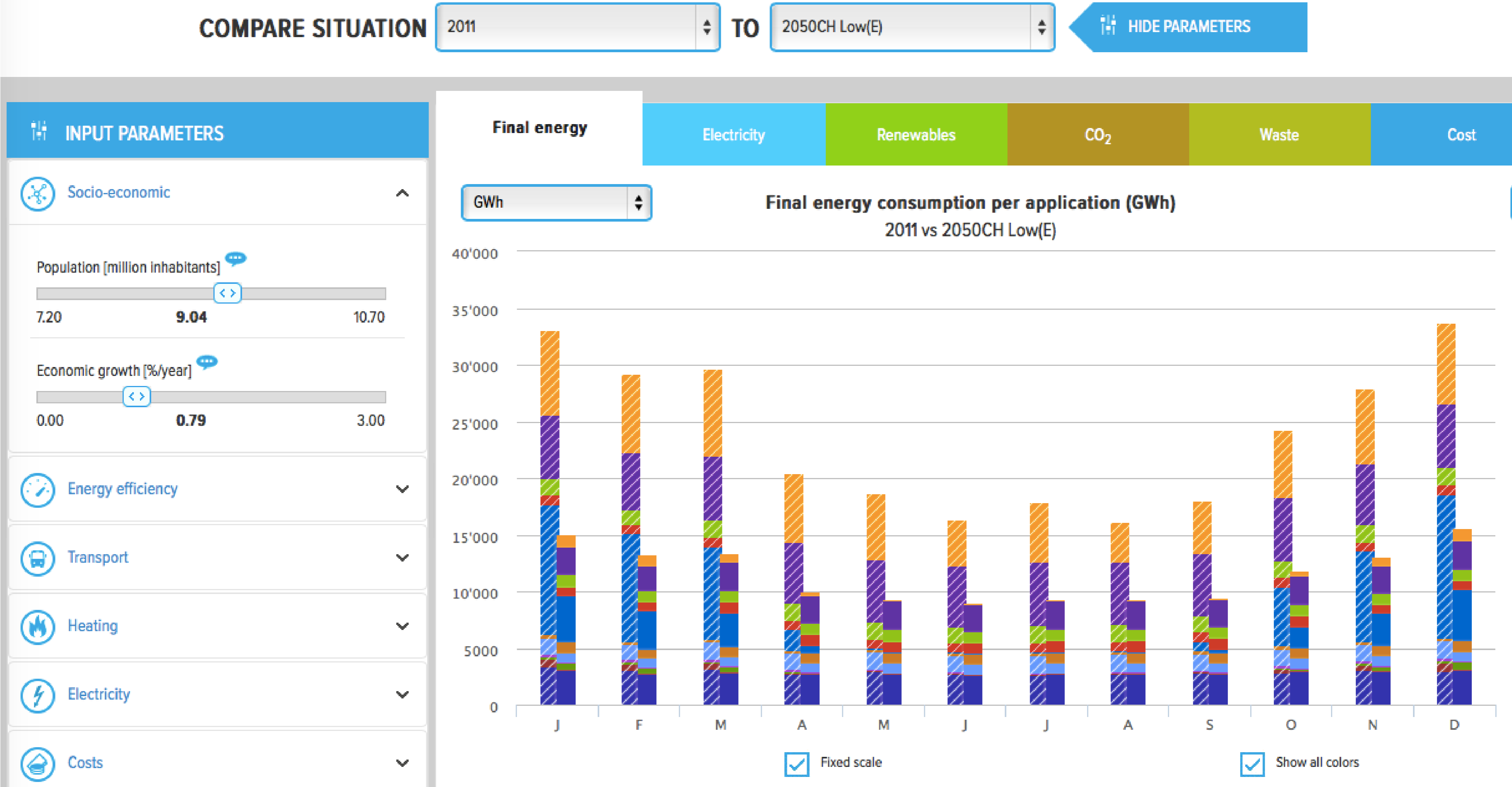
Heat pump (el.)

Space heating (el.)

Other (el.)

? Legend description

# Comparison with 2050 low



# Comparison with 2050 low



# A summary: all indicators at once

2011

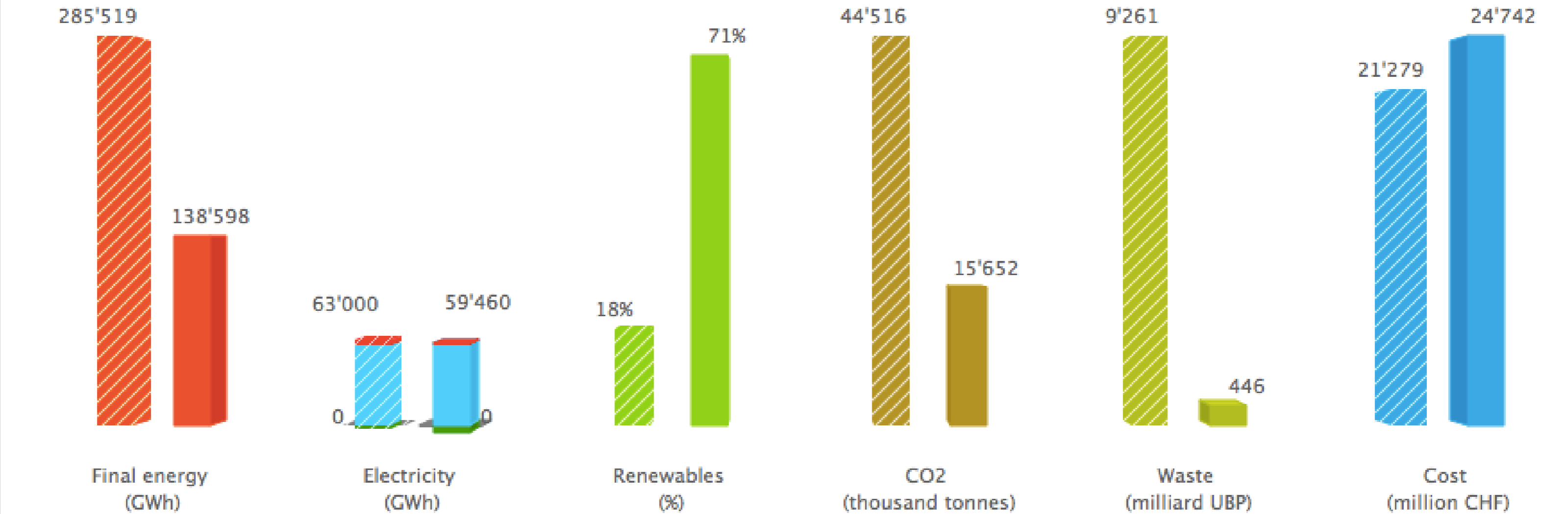
TO

2050CH Low(E)

VIEW PARAMETERS



Comparison of the 6 impact indicators  
2011 vs 2050CH Low(E)



- A general information platform is proposed to understand the scenarios proposed by SFOE and adapt them according to simple parameters:
  - Generally positive comments including from abroad but too early to judge on impact
  - Early negative reactions from “emotionally sensitive” groups (global warming deniers, anti-wind mills, ultra-pro-nuclear)
    - *Facts are not always welcomed !!*
- **Need for better indicators:**

Nowerdays we just put a box around it  
and name it a boiler with close to 100% efficiency  
**Is this First Law efficiency the right indicator????**

FAVRAT D., MARECHAL F., EPELLEY O. *The challenge of introducing an exergy indicator in a local law on energy.* Energy, 33, No2, (2008)



# To remember !



Que de choses il faut ignorer pour agir !

So many things we have to ignore, to act  
(Valéry)

consciously