

ENERGY AND INDUSTRY

How to benefit from taking an integrated production and consumption approach

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ENERGY EFFICIENCY

in Mediterranean companies

**A KEY NECESSITY WITH
UNEXPLOITED POTENTIAL
IN THE MEDITERRANEAN REGION**

ENERGY EFFICIENCY



- ❖ Launched by CP/RAC in 2008 to raise awareness among Med companies → **business opportunities** by introducing CP
- ❖ It seeks to boost **“green competitiveness”** among Med SMEs → visibility financial opportunities obtained when investing in the environment

BASED ON:

- ❖ Med Clean success stories of Med companies
- ❖ 176 techniques / GHPs
- ❖ Compiled in a report for enhancing visibility



IMPROVING PROFITABILITY + INCREASING ENVIRONMENTAL BENEFITS

MED CLEAN CASE STUDIES – ENERGY SAVING MEASURES

MED CLEAN:

- ❖ Case studies compiled by CP/RAC
- ❖ Mediterranean companies having introduced cleaner production measures (including energy saving measures)

Some statistics:

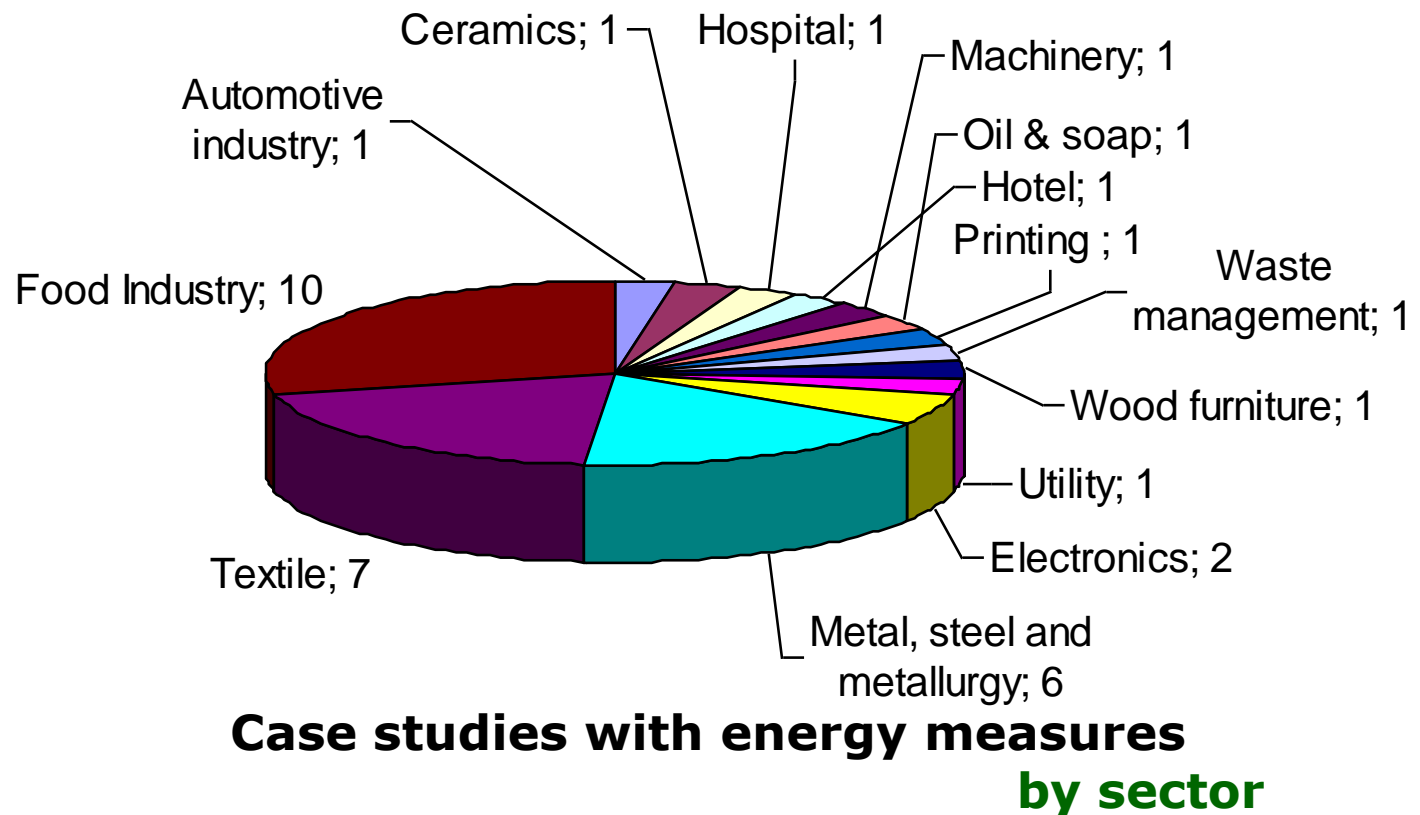
35 case studies with specific energy measures

10 Mediterranean countries: North, South and East

Reduction in CO₂ emissions: 56,467 t CO₂

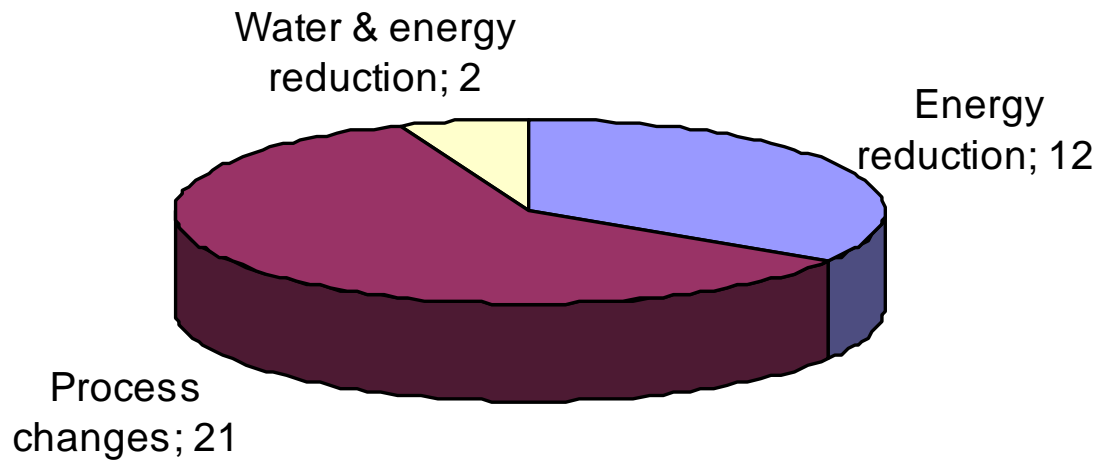
Source: CP/RAC

MED CLEAN CASE STUDIES – ENERGY MEASURES



Source: CP/RAC

MED CLEAN CASE STUDIES – ENERGY MEASURES



**Case studies with energy measures
by type of main measure**

Source: CP/RAC

MED CLEAN CASE STUDIES – ENERGY MEASURES

1) EDFINA

Edfina Company for Preserved Food is a public sector company located at Montazah, Alexandria (Egypt), and it is one of the largest **producers of preserved foods in Egypt** with 2 factories with 1250 staff.

Energy saving measures	Cost (€)	Annual Savings (€)	Payback Period (years)
Insulation of steam pipes	56,965	46,811	1.2
Replacement of leaking steam traps	8,707	15,959	0.5
Replacement of leaking steam valves	26,270	13,190	2
Installation of pressure regulators	27,151	63,604	0.4
Recovery of steam condensate	22,337	37,962	0.6
Improved boiler efficiency		15,337	
TOTAL	141,436	167,863	0.8

TOTAL CO2 Emission Reduction (Tons): 17,036

Source: CP/RAC

MED CLEAN CASE STUDIES – ENERGY MEASURES

2) SILA EDIBLE OIL COMPANY

Sila Edible Oil Company (Fayoum, Egypt) processes and average of 68,000 t/y of seeds, mainly sunflower, corn, soybean and cotton, producing up to 24,000 t/y of **first grade edible oil**.

Energy saving measures	Cost (€)	Annual Savings (€)	Payback Period (years)
Upgrade steam network, Close down of 1 boiler & water consumption reduction due to maintenance costs reduction	9,000	165,888	<0.1
Reduction of steam and warm water losses and process optimization	4,500	9,000	0.5
TOTAL	13,500	174,888	<0,1

TOTAL CO2 Emission Reduction (Tons): 5,346

Source: CP/RAC

MED CLEAN CASE STUDIES – ENERGY MEASURES

3) REDUCTION OF THE LIQUOR RATIO IN A TEXTILE COMPANY

The company is located in the region of Denizli (Turkey). It is a relatively modern company, which operates as a commission dyer. Its main activity is **cotton textile wet processing**. The main type of fabric processed is mostly cotton (up to 80-85% of its total production), although processes of man-made fabrics also take place.

Energy saving measures	OLD PROCESS (MJ)	NEW PROCESS (MJ)	Annual Savings (MJ)
Energy consumption (MJ/year)	71,692,991	42,116,218	29,576,773
Economic balance	OLD PROCESS (€)	NEW PROCESS (€)	Annual savings (€)
Cost of energy consumption (€/year)	671,014	394,785	276,229
Pay-back period (for all measures)	20 months		

TOTAL CO2 Emission Reduction (Tons): 3,631

ENERGY EFFICIENCY



THE STRATEGY:

- ❖ **Disseminate** CP techniques throughout the Mediterranean and become a real win-win competitiveness strategy for all Med partners
- ❖ How: **report** Med Clean case studies, **national congresses**, **networking events** and an interactive **web portal**

TARGET:

- ❖ **Developing** countries of the Med region
- ❖ How to target the **private** sector: SMEs through associations / federations
- ❖ **Public** authorities: to enable the right environment for widespread of CP techniques

ENERGY EFFICIENCY



GRECO wants the average Med *businessman* (or woman!) to recognise the environment as a **real business opportunity** and **not just a cost**

GOAL:

aiding countries **develop** their **economies**
while decreasing **environmental impacts**

***LEAPFROGGING:** a challenge? A real possibility? How to?*

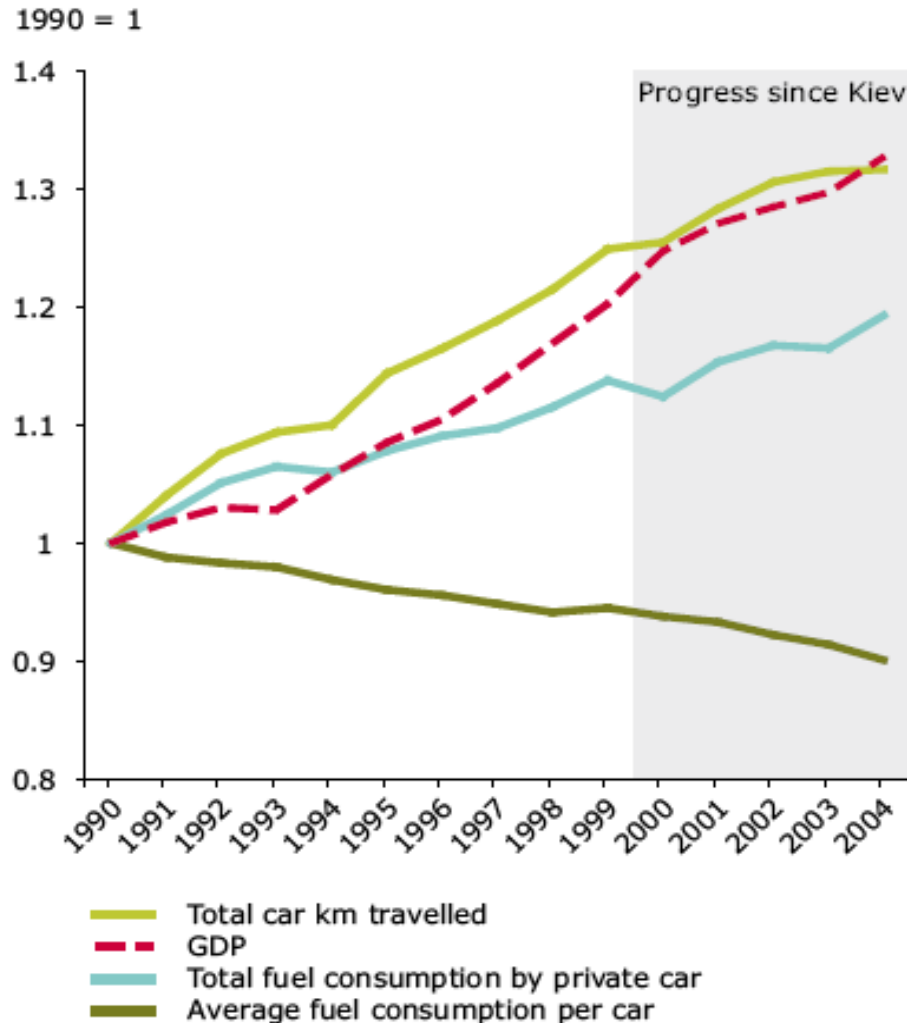
But is efficiency alone enough to reduce energy demand and GHG emissions in the Mediterranean?



Is efficiency and technology the only solution?

An example:

Figure 6.17 Growth in private car travel versus fuel efficiency in EU-15



- Today's cars are much cleaner and more fuel efficient than 15 years ago, (dark green) but...
- the number of cars on the road has more than doubled...
- and people drive more (light green line) because of the lifestyle...
- Hence, much higher impacts from transport (blue line)



**REBOUND
EFFECT!**

Production-related environmental hot spots are already **fairly well** researched / **known** → environmental **policy has mainly focused on production**, with considerable success

Improvement has been achieved through efficiency in production, but **not** thanks to adopting more sustainable consumption patterns

It is therefore open to debate whether policies focusing on efficiency alone will be sufficient in the long term:

consumption growth outstrips efficiency gains

At the European level, domestic emission reductions cannot be achieved through efficiency gains in production alone

changes in lifestyles will be necessary

Challenge: also act in the demand / **consumption side**

The answer is clear:

Energy efficiency in production is key for reducing energy consumption and GHG emissions, but it is unfortunately not the only solution



We need to get the **full picture** – **why** is this taking place? focus on the consumption side as well

And the next question:

- How to take **a consumption perspective**?
- What can we do?

A CONSUMPTION PERSPECTIVE, GHG emissions

All GHG emissions of everything we consume:

- direct and indirect
- domestic and foreign

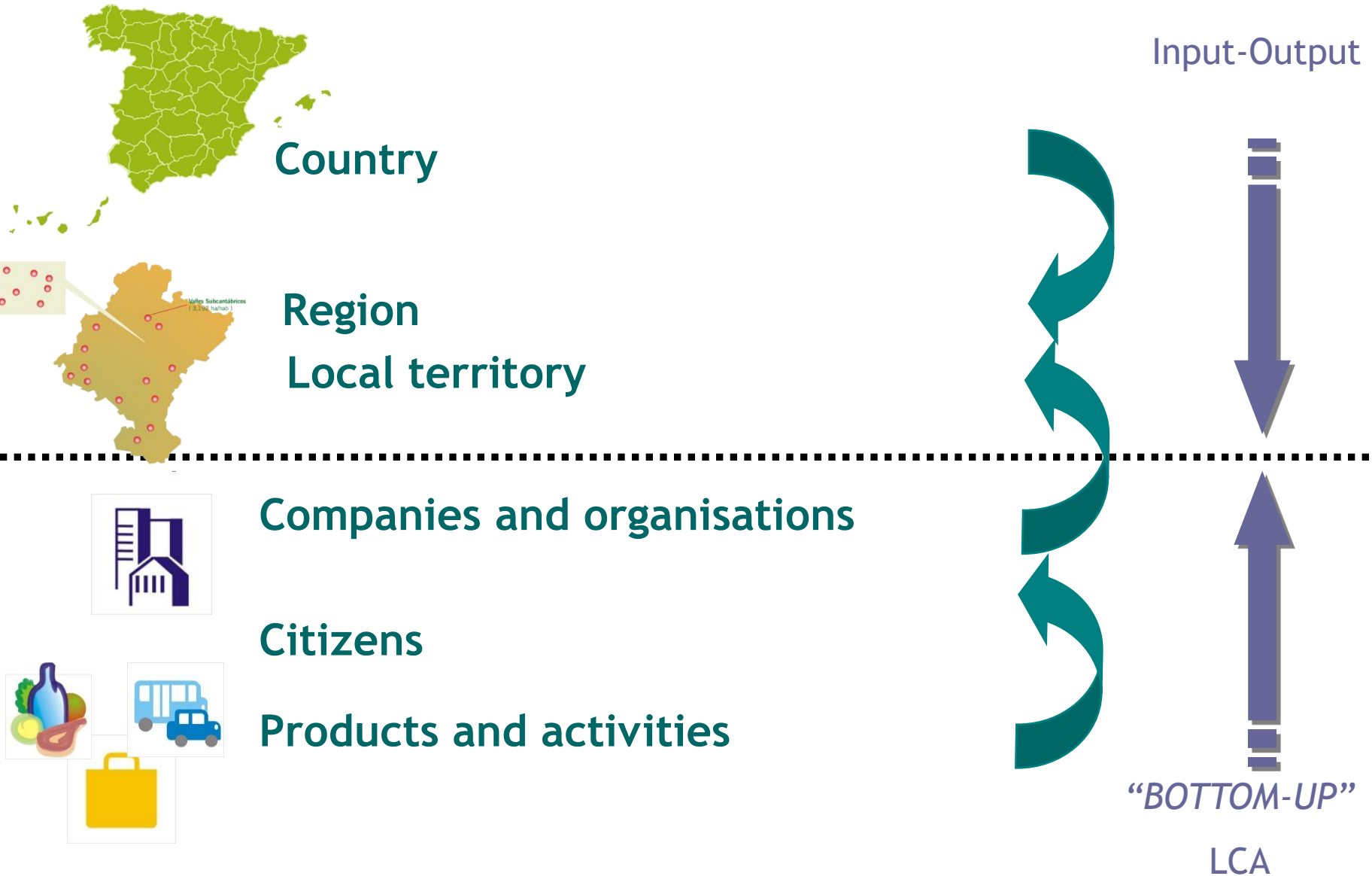
("life cycle" thinking)

But how?

Different levels

“TOP DOWN” AND “BOTTOM-UP” APPROACH CONSUMPTION PERSPECTIVE

depending on what we want to achieve / focus action on



we can calculate emissions
generated by a factory



**BOTH VIEWPOINTS
NEEDED!**



and we can also
calculate emissions
for a t-shirt

We also have global supply chains



Single factory
approach?



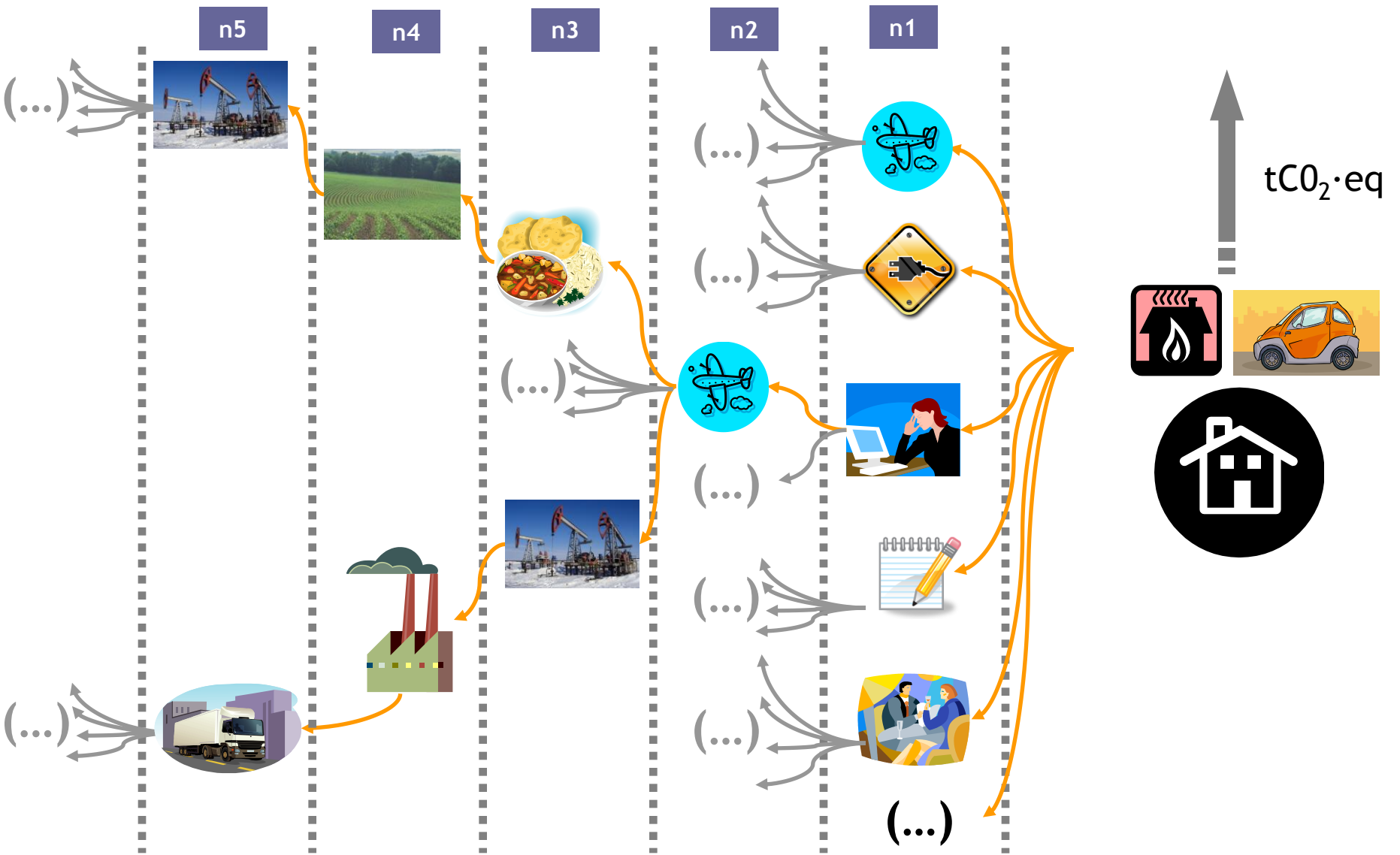
"Global factory"
approach?

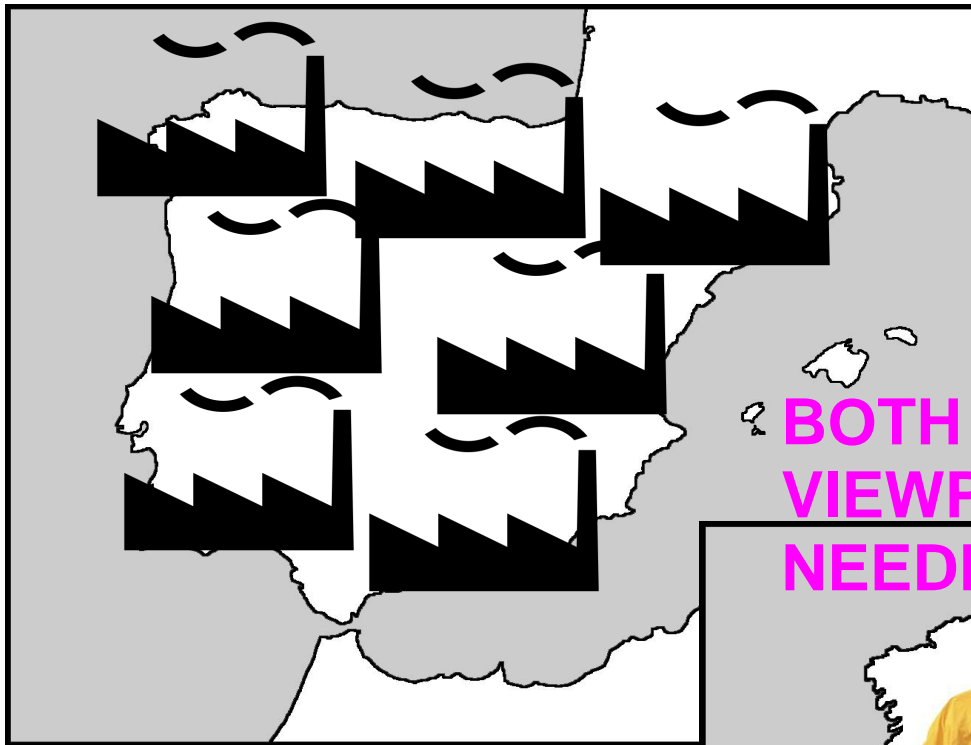
EMISSIONS - CONSUMPTION PERSPECTIVE:

include all the emissions along the supply chain (**global!**)

Indirect GHG emissions (supply chain)

Direct GHG emissions





we can calculate emissions by all factories in a given territory
PRODUCTION PERSPECTIVE

WHERE emissions occur

**BOTH
VIEWPOINTS
NEEDED!**

and we can also calculate emissions by all products and services consumed in that territory
CONSUMPTION
PERSPECTIVE

WHY emissions occur



A CONSUMPTION PERSPECTIVE

Consumption categories



Food

Clothing and footwear

Household energy

Housing, furnishings and household goods

Health

Transport

Communication

Recreation and culture

Education

Restaurants and hotels

Miscellaneous goods and



CONCLUSION:

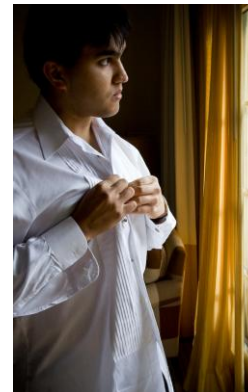
ENERGY EFFICIENCY in production processes still a huge potential in the Mediterranean - essential, ***but not enough*** in itself

To achieve success in lowering energy demand & GHG emissions, there is a NEED for an **INTEGRATED** approach based on taking action both in the **production AND** the **consumption** (demand) side:

the **drivers** must also be taken into account.



where



why



THANK YOU!



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