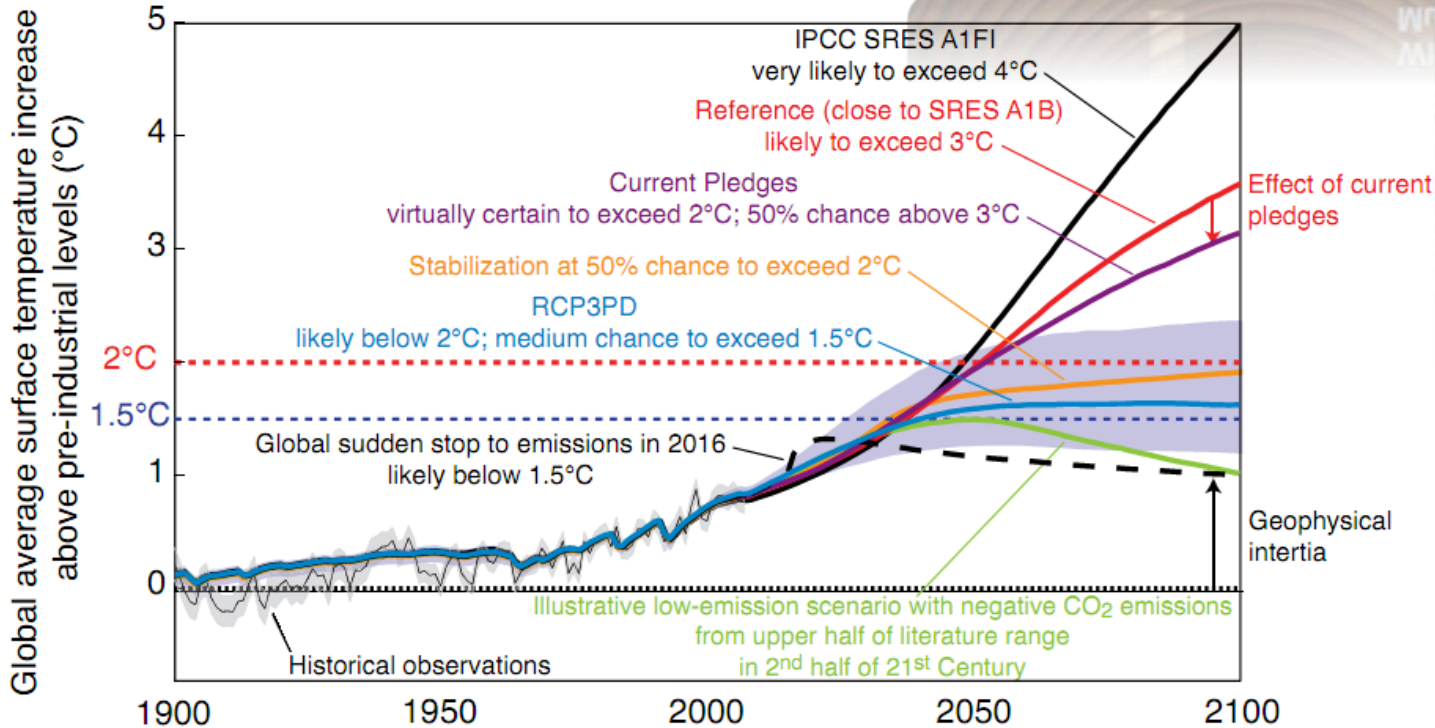


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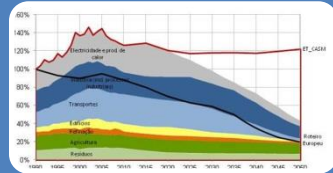
Portugal's Low Carbon Roadmap

Options for a transition to a competitive and low carbon economy by 2050

But first...



Background



Analysis of the implications of possible low carbon trajectories to 2050



Cost-benefit analysis



Framework for policies and measures

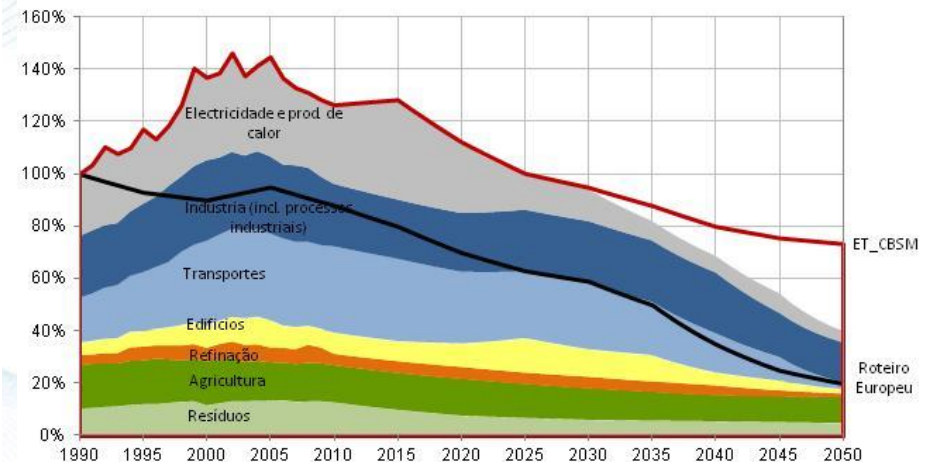
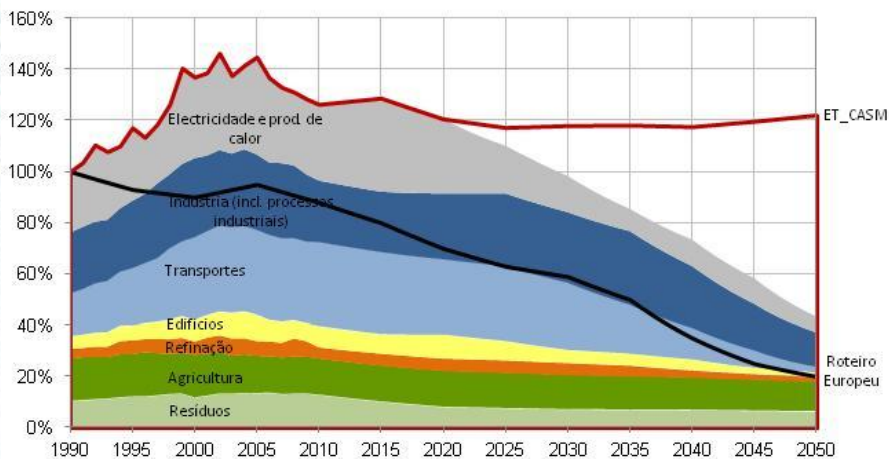


Strategic Guidance

All sectors contribute to the low carbon trajectories

High Scenario

Low Scenario



- Low carbon trajectories achieving 50-60% emission reductions by 2050 compared to 1990 are feasible
- All sectors have emissions reductions potential
- Electricity production, buildings and transports have the highest emissions reduction potential

What are the main drivers for emission reductions?



Electricity is the main low carbon vector, linked to a significant contribution of renewables

- Electricity consumption doubles from 2010 to 2050
- Renewable electricity production reaches 90% by 2050
- Electricity in transport gains relevance



Technology change linked to higher energy efficiency

- In particular in buildings and transport



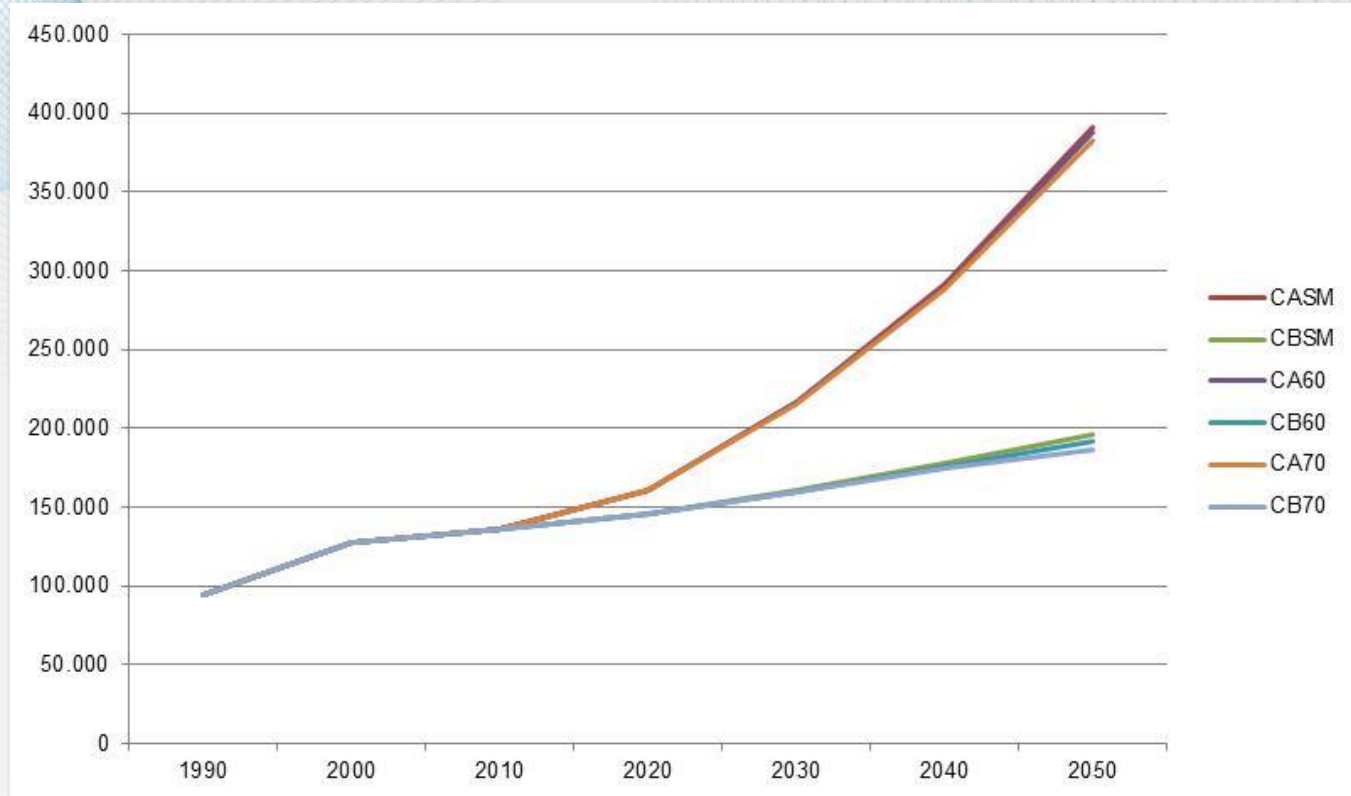
Structural adjustments in agriculture and improvements in energy and resource efficiency



Paradigm changes in waste towards prevention and recovery management models

What are the impacts of a low carbon trajectory in the energy sector?

- Impact on macroeconomic growth (direct and indirect impacts in the different economic sectors)
- Slight reduction in the GDP growth in a low carbon trajectory:
 - -2,4%|-1% GDP in 2050 (60% energy sector reduction)
 - -5,1%|-2,2% GDP in 2050 (70% energy sector reduction)



Evolution of the national GDP 1990-2050 in high and low scenarios ,in the different trajectories.

Co-benefits for the economy?



**500-1200 M€
savings in the
trade balance
of energy
products**



**Creation of
green jobs,
particularly in
Renewables**



**Reductions of
acidifying
emissions**



**Reduction of
damage costs
that reach 240
M€ in 2050**

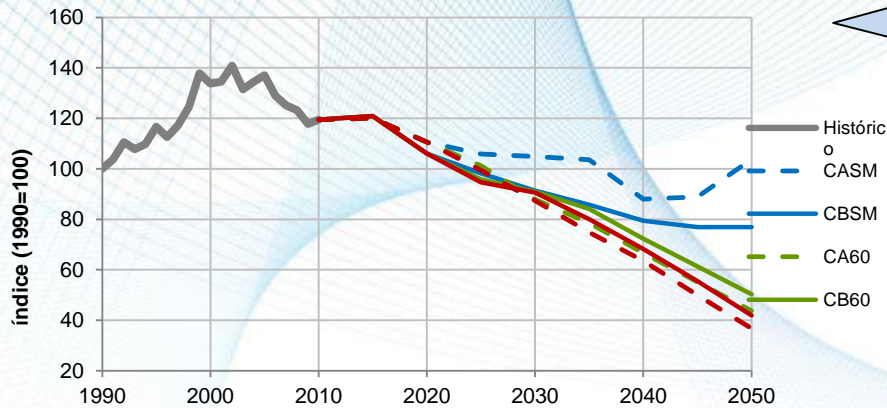


**Benefits for
public health**



Convergence of Portuguese and European low carbon scenarios

Trends in GHG per capita emissions in the period 1990 to 2050



By 2050 emissions of 2-3 t CO₂ per capita are in line with European objectives and with a long term global convergence around 2 tCO₂e/hab.

Carbon intensity of GDP is reduced even in the absence of emission restrictions. The trend is bigger in low carbon trajectories

Trends in Carbon Intensity of GDP in the period 1990 to 2050

