



ΣΥΝΕΔΡΙΟ

Επενδύοντας στην Ενεργειακή
Αποδοτικότητα

24.5



CONFERENCE

Investing in Energy Efficiency

24.5

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Glaciers are melting away worldwide



**Agassiz Glacier,
Montana, in
1913...**

...and in 2005



**Pasterze Glacier,
Austria, in
1875...**

...and in 2004

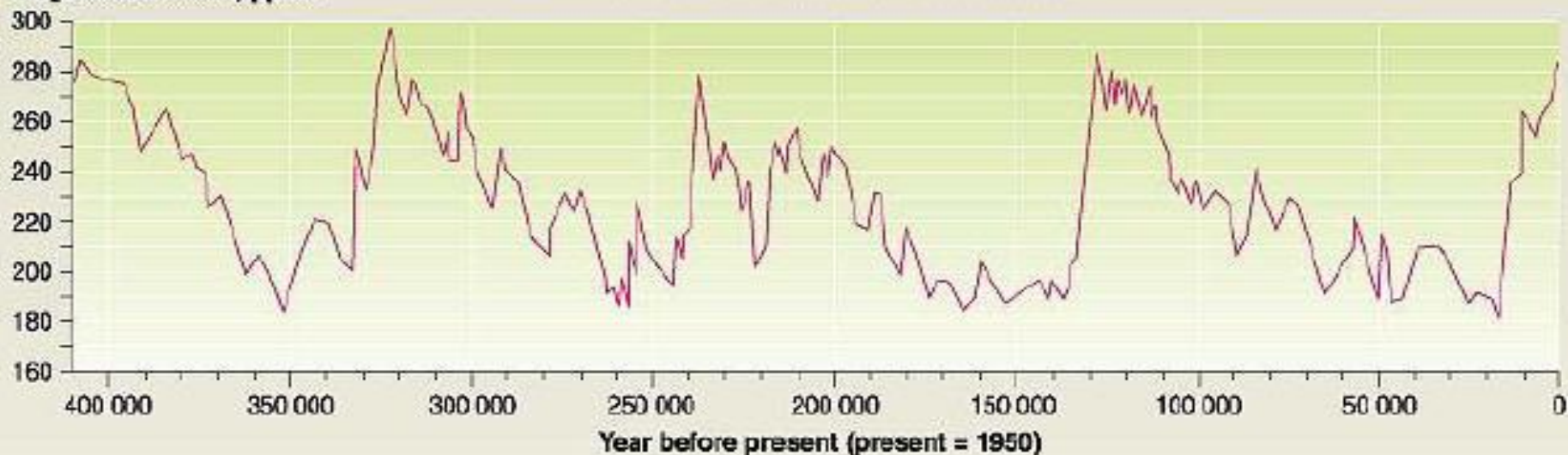


Pasterze Glacier 1875

Pasterze Glacier (left), Austria © 2004 Gary Brauch

Temperature and CO₂ concentration in the atmosphere over the past 400 000 years (from the Vostok ice core)

CO₂ concentration, ppmv



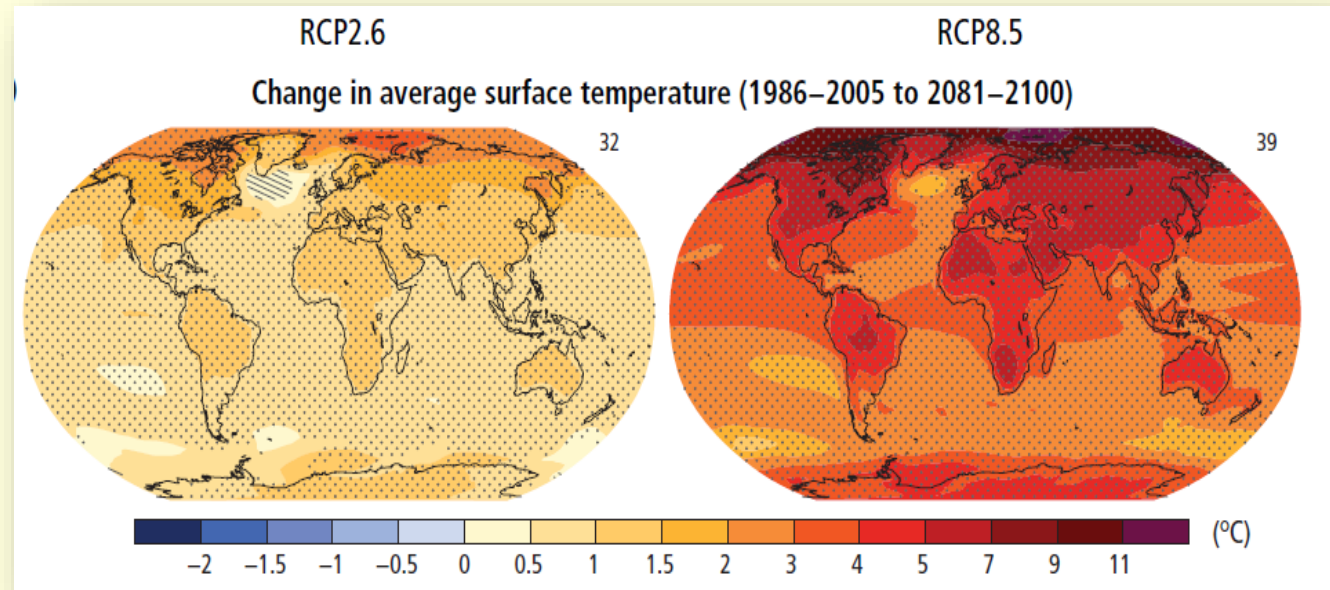
Temperature change from present, °C



COP21

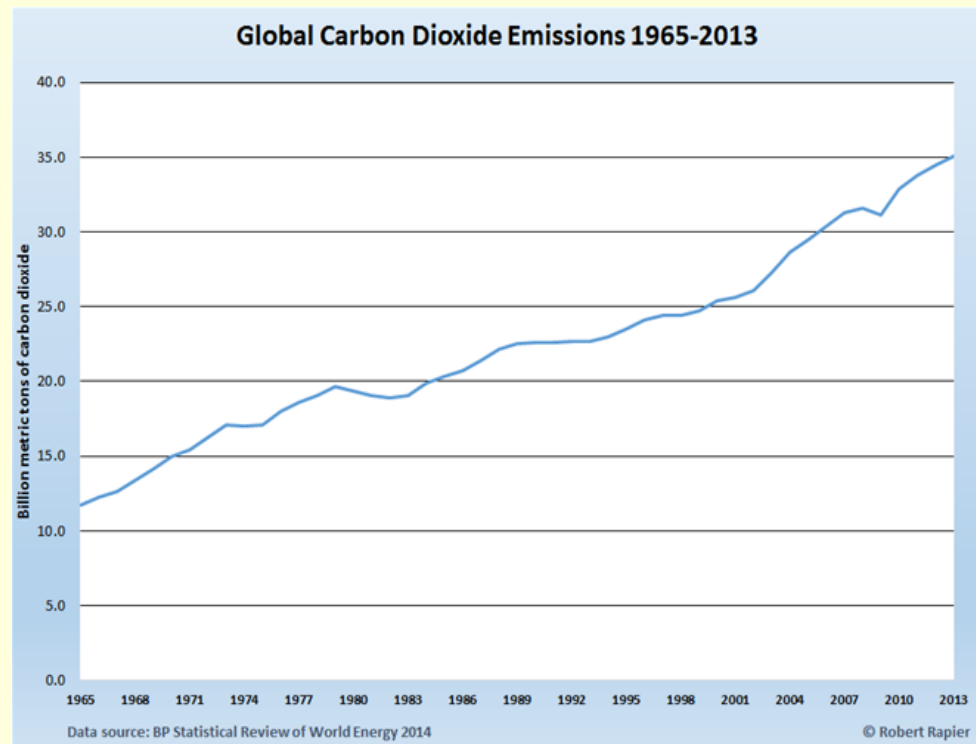
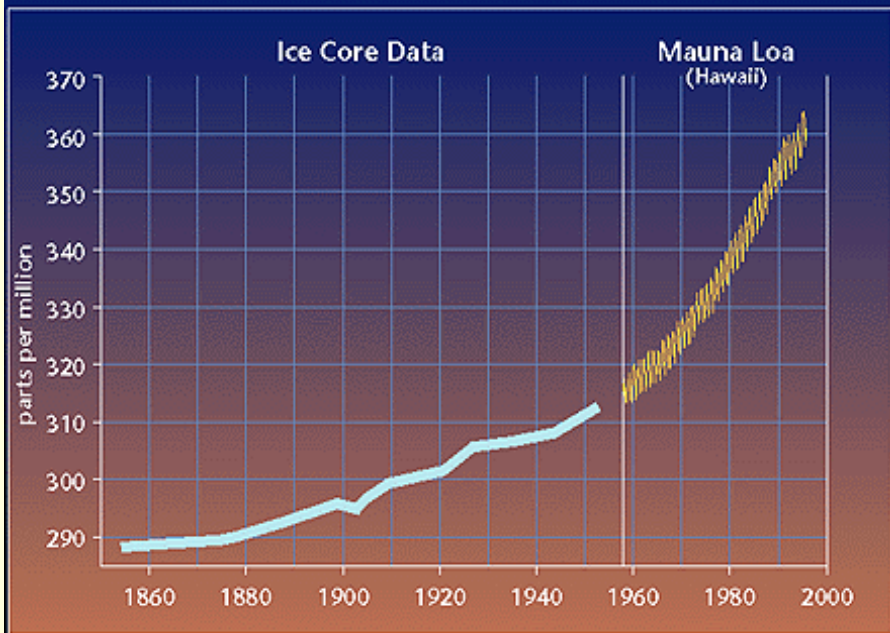
Mitigation, countries agree on:

- a long-term goal of keeping the increase in global average temperature to **well below 2°C** above pre-industrial levels;
- to aim to limit the increase to **1.5°C**, since this would significantly reduce risks and the impacts of climate change;
- on the need for **global emissions to peak as soon as possible**, recognizing that this will take longer for developing countries;
- to undertake **rapid reductions thereafter** in accordance with the best available science.



Source:
http://ec.europa.eu/clima/policies/international/negotiations/paris/index_en.htm

Carbon Dioxide Concentrations



According to the Bloomberg New Energy Outlook 2017*

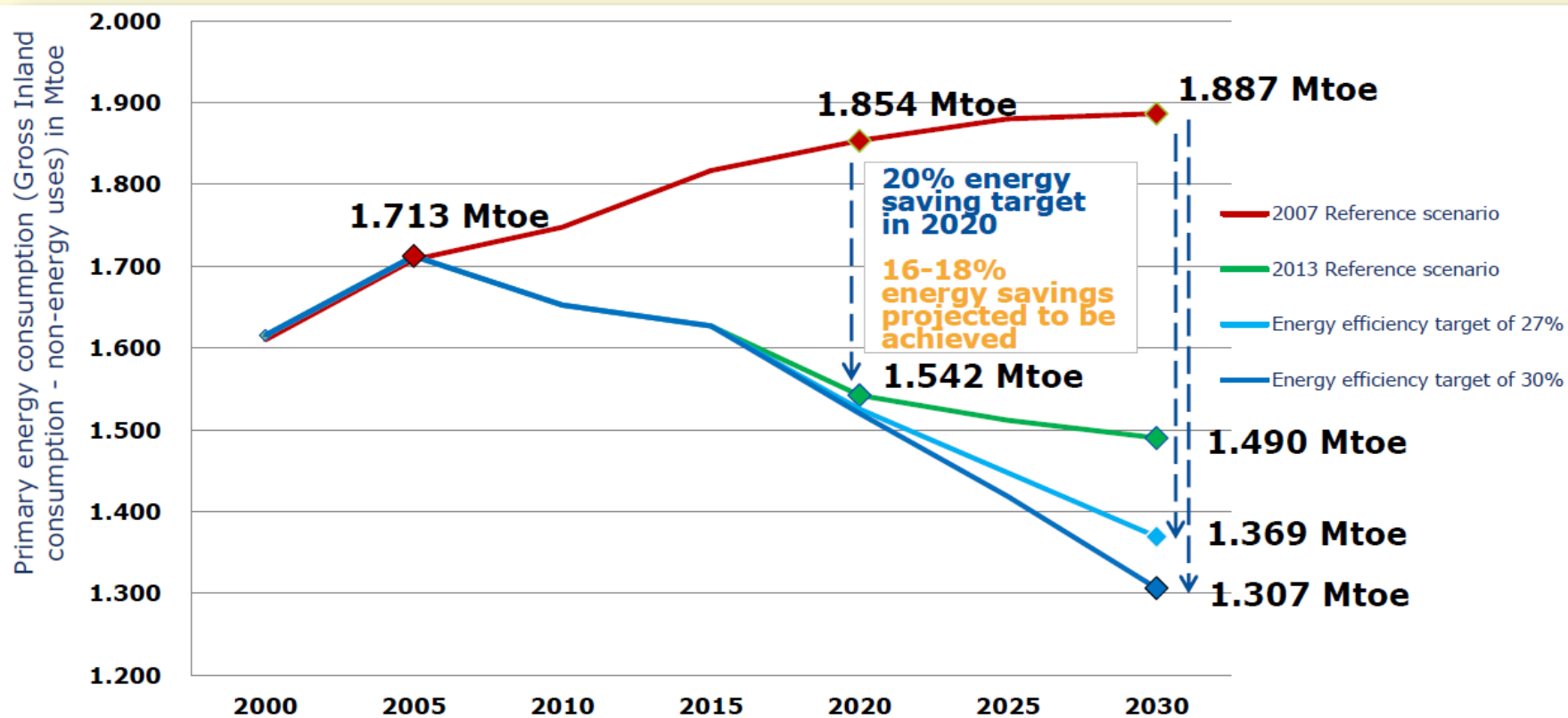
- ❑ Worldwide investments of 5,3 trillion US\$ are needed in Energy sector, of 3900 GW of zero emissions of CO₂ in order to achieve the “1.5 °C” target !!!
- ❑ The most likely scenario at the end of the 21st century is the difference to be 3 – 3,2 °C, according to UN studies.

* <https://about.bnef.com/new-energy-outlook/>

Energy Efficiency

- 1) “Energy efficiency improvements refer to a **reduction in the energy used for a given service or level of activity.**” [World Energy Council]
- 2) “Energy efficiency encompasses all changes that result in decreasing the **amount of energy used to produce one unit of economic activity.** Energy efficiency is associated with economic efficiency and includes technological, behavioral and economic changes.” [World Energy Council]
- 3) “Energy efficiency is **the use of technology that requires less energy to perform the same function.**” [Energy Information Administration]
- 4) “Energy efficiency is the process of **substituting energy by capital, usually to generate profit after a certain amount of time.**” [M. Pehnt, Energieeffizienz]
- 5) Energy efficiency’ means the ratio of output of performance, service, goods or energy, to input of energy “EC Directive 27/2012/EC”
- 6) “Energy efficiency is the fuel of the future“ [Unknown]

EU-path to 2030 EE target



Source: EC

Energocredit Guide

ENERGY EFFICIENCY & RENEWABLE ENERGY

BEST PRACTICE GUIDE
FOR BUSINESSES
IN GEORGIA

CHECKLIST

The Figure below ranks alternative energy-saving measures in terms of their effectiveness in reducing energy consumption.

Heat recovery (ESR: up to 30%; CAPEX: €3,000-€6,000 for a small site)

Use of high efficiency motors (ESR: up to 20%)

Use of automatic leak detection systems (ESR: up to 15%)

Load reduction (ESR: up to 10%; CAPEX: about €1,000 per evaporator for intelligent defrost controls; about €35,000 for door insulation and dehumidification)

Multi-stage refrigeration systems (ESR: increase of COP by up to 10%)

Chilled water storage (ESR: mostly reflected in cost savings; Energy efficient if combined with system replacement / expansion, thereby allowing fewer, smaller, and/or more energy efficient chillers)

Good housekeeping (ESR: 5%-15% depending on the condition of the plant)

Absorption cooling (ESR: depends on system being replaced; mostly reflected in cost savings if gas prices are lower than electricity prices; CAPEX: about €300-€500/kWcool)

Improving controls (ESR: 2%-5%)

References : (21), (17), (22), (23)

Ευχαριστώ για την προσοχή σας!