

**The great climate threat especially to Sweden  
and the EU is global cooling and the next ice age**

**High atmospheric levels of carbon dioxide can  
delay cooling particularly at northern latitudes**

**Strong environmental and resource arguments  
remain for lowered emissions of carbon dioxide**

**Balanced environmental progress requires new  
scientifically credible goals and motives**

## **CLIMATE and CARBON DIOXIDE**

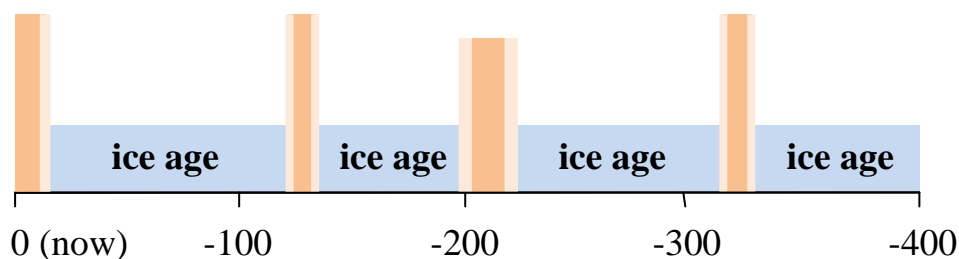
### **New goals for Sweden and the EU**

The article follows up the previous Swedish reports

[Klimatfrågan](#)

[Koldioxid och Klimat](#)

[Klimatpolitik och Växthusgaser](#)



Rough time scale for [interglacials](#) and ice ages during 400 000 years

## A new ice age threatens Sweden and the EU

A colder climate as we approach the next ice age is worst for Sweden and the northern half of the EU but strikes hard also against North America and Russia.

**Time for ice age:** Long ice ages of about 100 000 years have followed regularly after shorter warm periods of around 10 000 years. Presently we face the end of a warm period and can expect initial cooling before the next ice age.

**Ice over Sweden and the EU:** Glacial ice sheets tend to develop mainly over the land regions in the north. [The previous glacial ice covered northern Europe.](#) During earlier ice ages about the same regions were covered. The south border reached approximately London, Berlin and Moscow. If the next ice age extends similarly it erases not only Scandinavia but major parts of the EU.

**Heating and cooling mainly in the north:** Reported differences in temperature between ice ages and interglacials are much smaller globally than in northern regions. Both global warming and global cooling are more marked in the north. Ice sheets develop over the large northern land areas. Therefore global cooling is a serious threat also to Russia, Canada and the USA.

**Long-term temperature goals:** For Sweden and the EU global cooling is much worse than global warming. Cooling will be severe long before the next ice age. Warming results in a better northern climate with improved conditions for life and increased biological diversity. Maybe the next ice age can also be delayed.

- 1,2 %

- 0,27 %

+ 0,47 %

[Arctic ice September](#) [Arctic ice March](#) [Antarctic ice March](#)

*Change in average sea ice cover per year the past 30 years*

## Climate of Sweden, the EU and the Arctic region

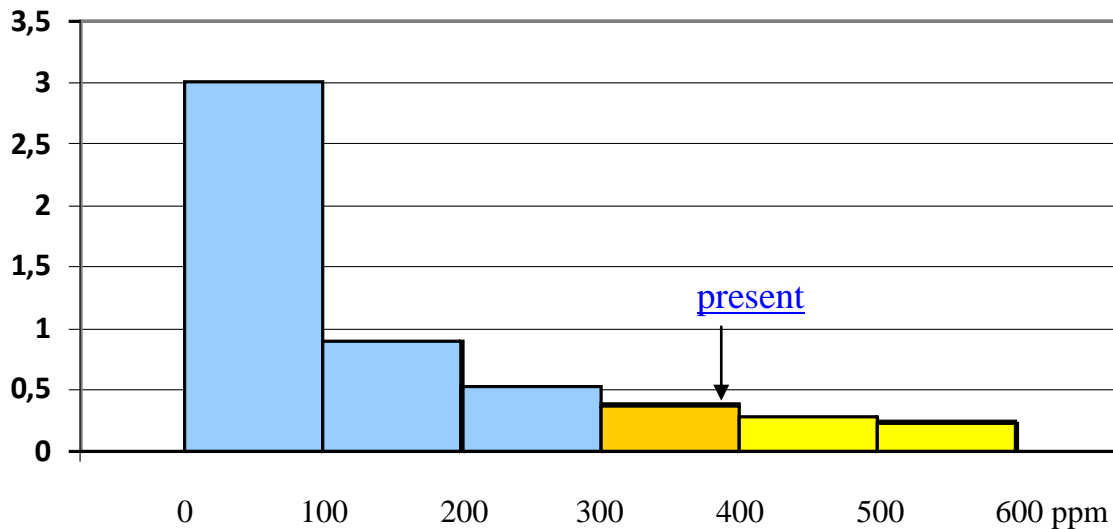
For several reasons interest in climate change has recently moved towards the Arctic and northern regions.

**Warmer climate:** A recovery with higher temperatures and better climate has occurred since the Little Ice Age of the 17th century. According to the UN panel IPCC, the emitted greenhouse gases have added around 0.5 °C during the 20th century. This change is beneficial mainly to northern regions like Scandinavia.

**The Arctic:** The continued global warming foreseen by IPCC has ceased in the past ten years. Focus is now shifted to [decreased ice coverage in the Arctic](#) seas. Less ice has been observed mainly in the late summer season. In the Antarctic, ice coverage increases. Less sea ice in the Arctic may be regarded as hopeful with respect to the threat of the next ice age, but the thin sea ice is more variable than the massive continental glacials.

**Clouds key to temperature:** The major effect of variable clouds on temperature explains why climate models may often be regarded as guesses. Clouds cool by decreasing sun radiation and warm by their strong greenhouse effect. In Arctic regions with weak sun radiation, more open water produces more clouds with stronger greenhouse effect and less cold summers.

**Temperature control:** Northern temperatures have differed more than 10 °C between present top values and the cold ice ages. Overriding negative feedbacks always prevent temperature runaways. Especially forceful is Stefan-Boltzmann's law implying 4 % change in heat loss by radiation to result from 1 % change in temperature (°K).



*Greenhouse effect in °C per 100 ppm more carbon dioxide*

### **Temperature goals and greenhouse gases**

Sweden and the EU now propose limiting global temperature increase to below 2 °C. Preventing global cooling and a new ice age appears to be more important. Irrespective of goals, the effect of carbon dioxide is very limited.

**Minor future effect:** The diagram shows that additional carbon dioxide from now on adds little to the total greenhouse effect. A roughly logarithmic decrease reflecting Beer's law can be illustrated by [bar graphs](#) or by [continuous curves](#). The effect of preindustrial carbon dioxide (blue) predominates. Additional levels so far (brown) and further on up to 600 ppm (yellow) each add less than 0,5 °C to the global temperature. It should be noted that previous as well as projected increases in temperature include positive feedbacks.

**Desirable greenhouse effect:** Warming occurs mainly in the north where a better climate is desired and a new ice age may be delayed. Sweden and the EU clearly have strong *climate reasons not to demand decreased global emissions* of carbon dioxide. Global cooling is the worst scenario. Reasonably high levels of natural carbon dioxide and methane may then be valuable. All emissions of potentially dangerous unnatural greenhouse gases should be avoided.

**Fossil fuels: *Enormous global resource spoiling***

**Gasoline and diesel: *Worst chemical products***

**Oil used in the West: *Largest global injustice***

**Import of oil and gas: *Threat to energy safety***

### **Indirect reasons against emissions of carbon dioxide**

Higher levels of carbon dioxide are favorable for the climate at least up in the north. There are, however, other strong reasons for changes which imply lower emissions of carbon dioxide.

**Non-renewable resources:** Fossil fuels such as oil, carbon and natural gas are resources which are used up. Even with more efficient energy use they must be replaced by renewable energy sources. As a result emissions of carbon dioxide will decrease.

**Environment:** The use of fossil fuels leads to severe environmental problems in the whole chain from extraction to end use. Gasoline and diesel exhaust give rise to both environmental and health problems. New fuels and propellants are often linked to less environmental problems as well as low carbon dioxide emissions.

**Fair reasons:** The western world has been created largely by the use of fossil fuels. Other parts of the world have a moral right to most of the remaining fossil resources. With respect to future generations it is also unfair to use up fossil resources as quickly as now. Considerations of these kinds imply a slower release of carbon dioxide to the atmosphere.

**Energy safety:** The economies of both USA and the EU now rely heavily on imported oil and natural gas. This means unreliable supply and consequently strong reasons for a change to renewable energy sources. Efforts for energy safety must be seen as respectable and need not to be hidden falsely as climate policy. Improved energy safety also decreases carbon dioxide emissions.

<i>True</i>	<i>False</i>
<b>environmental goals</b>	climate goals
<b>environmental labeling</b>	climate labeling
<b>environmentally friendly</b>	climate smart
<b>environmental policy</b>	climate policy

### **Heading for a true future**

The opinion that decreased emissions of carbon dioxide can save the climate threatens the credibility of natural science, environmental organizations, media and politics. This is another reason for more balanced views.

**Strategy for change:** Sharp scientific criticism is necessary but has so far led to accusations and locked positions. Opportunities are needed to change views in a constructive and respectable way. Balancing by the long-term threat from a new ice age is one option. For carbon dioxide focus can be shifted from climate to other arguments against fossil fuels. For forests, farming and foods there are strong reasons to focus on regional problems rather than global change.

**Proper words:** A good start for everybody and especially for media and the politicians is exchange of misleading for proper words. This can often be done by just replacing "climate" with "environment". Any journalist or politician referring to environment can gain higher future credibility than a colleague sticking to climate policy.

**Sweden and the EU:** During the leadership of Sweden in the EU, decreased emissions of carbon dioxide can be kept as a central issue if they are not linked to climate. The conference in Copenhagen can still focus on carbon dioxide but with environment and fair resource distribution as major motives. This would contribute to true sustainability. It would also eliminate false solutions such as carbon dioxide storage.

[Chemicalnet - carbon dioxide](#)

[Science on the Swedish radio](#)

[Appeal from senior scientists](#)

[The Stockholm Initiative](#)

[Debate at Chalmers](#)

## Opinion and criticism in Sweden

A genuine concern about global warming and belief in cutting emissions as the solution still prevails in Sweden. Specific reasons contribute to this opinion.

**History:** A strong belief in the United Nations is typical of Swedes ever since the time of Dag Hammarskjöld. A similar belief in the Nobel Peace Prize makes it even more difficult to question IPCC and Al Gore.

**Belief rather than knowledge:** As a result there is a strong belief in a threat from carbon dioxide among people lacking relevant scientific knowledge. This includes ordinary people, environmentalists, technicians, economists, journalists and politicians. [The Climate Scam](#) and [Moderna myter](#) are popular balancing blogs.

**Research:** The funding of research now depends on the presumption that carbon dioxide makes evil to the climate. One strategy for funding is to talk about the worst science fiction scenarios and to safeguard by implying uncertainties.

**Critical scientists:** Critical independent scientists often share certain concerns. Among these are consequences of false statements and of neglected more severe problems. These scientists tend to be either ignored or personally questioned. The links above give examples of scientific criticism in Sweden.