Remark: Five out of 19+ images are shown..

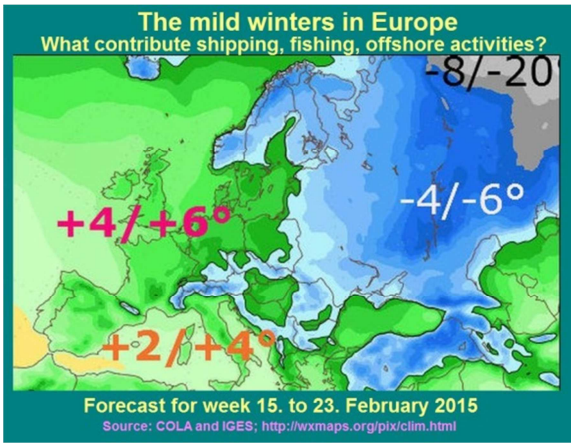
Offshore Wind-parks and mild Winters.

Contribution from Ships, Fishery, Wind-parks etc.

25th February, 2015

The effect of stirring

The actual winter 2014/15 is up to now no winter in Northern Europa (**Fig. 1-2)**. Can anthropogene activities in the North Sea, Baltic and coastal seas be made partly responsible? Presumably yes! Stirring hot coffee will cool it down.

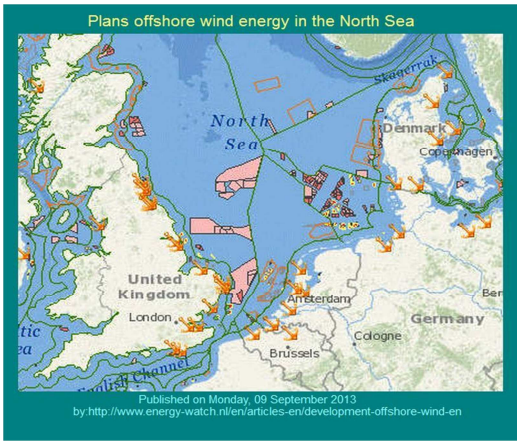


At the end of August the sea areas have gained their maximum potential of warmth. Many ship propellers are plowing through the sea stirring the surface layer to a depth of 15 meters. In the North Sea and Baltic there are continuously ten thousand and more motor ships at sea. Several thousand offshore facilities on the bottom of the sea or anchored offshore rigs divert currents at sea and influence tides and currents as a permanent resistance against the normal flow of huge amounts of ocean water. (**Fig. 3-8)** The result is like stirring hot soup. Warm water will come to the surface and the heat will supply the atmosphere with warmth. The air will become warmer and the winters will be milder. The correlation is not to be overseen. It is not relevant to climate research or agencies allowing offshore structures who do not consider such evaluations.

Strong warming during winter season.

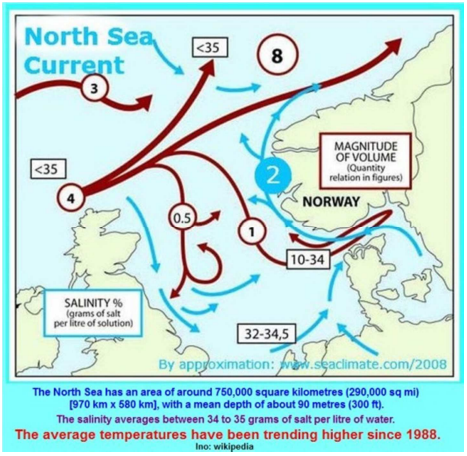
The situation at the beginning of the evaluation is obvious. In Europe the mean average temperature during the last century has risen by 0.9°C. In the last 30 years the tendency of warming per decade with about 0.41°C was significantly higher than the global mean of +0.17°C. Warming in central and northern Europe was very strong and winter temperatures rose faster than summer temperatures (Ref.).

This is also true for water temperatures in the North Sea which rose faster than in other oceans according to publications from the Alfred Wegner Institute 2012. In the year 2014 the highest annual average of 11.4°C was the highest ever measured and was 1.5°C higher than a long time mean value as the Federal Maritime and Hydrographic Agency in Germany published in February 2015 („Schiff & Hafen", 2015, P. 56).



The same is reported about the Baltic. It warmed by around 0.03°C per decade stronger than other sea areas. In the course of the 20th century the Baltic warmed by approximately 0.85°C (Ref.). This had a direct influence on air temperatures, as DER SPIEGEL reported several years ago: *„….the temperature in the Baltic area increased by one tenth of a degree, more than the global average …. The warming of the air in the northern Baltic area by 1°C was higher than in the southern region with 0.7°C.".*

The Helsinki Commission (HELCM) confirmed in 2013 that *"On average since the late 19th century the increase in annual average surface air temperature has been 0.11˚C per decade in the northern Baltic and 0.08˚C in the southern Baltic compared to the global average of 0.05˚C per decade."* The difference between North and South can be explained by the fact that the southern Baltic is shallower than the eastern Baltic. That means there is less volume of



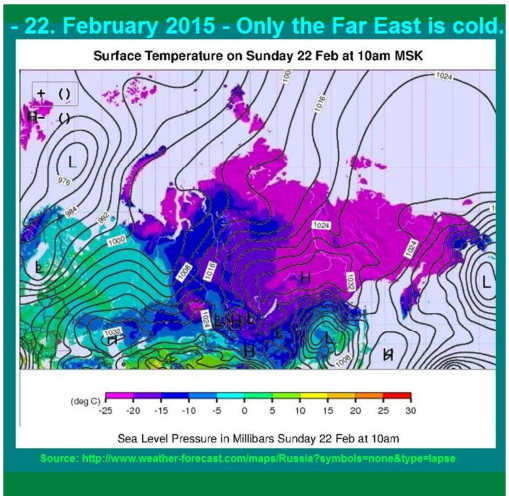
water available for storing heat (summer) and releasing it (winter). (**Fig. 9-13)** The over proportional warming of water and air is self-evident. To link this to ‚global warming' cannot be convincing. How can ‚global warming' lead to specific higher warming in these regional seas? Rather, it should be asked; have shipping and offshore activities contributed to global warming?

More heat input – More heat output.

An example for the importance of the available water volume is shown in the Baltic. The increase of mean water temperature near Gotland since 1993 was almost 6°C and around Bornholm it was about 8°C (Ref.). The mean water depth of the Baltic is 52m (Nord Sea 94m) and is less in the south than in the eastern Baltic. The explanation of this significant difference of 2°C can be a different amount of ship traffic. According to HELCOM a permanent number of 2000 large (sizable) ships sail the Baltic at any time. This implies that this armada agitates the surface layer down to 10m depth and deeper in the entire Baltic within two weeks. In the southern Baltic more because of higher ships traffic thus explaining the greater rise in temperature. That this aspect plays an important role can be explained by the fact that comparable values in both regions, Gotland and Bornholm, were only around 4°C.

Since mankind, during the course of a year, agitates the water column of North Sea and Baltic by stirring, more warmth is taken to deeper water in the summer season and rises to the surface from lower layers in the winter period, where heat is exchanged with the air until sea icing is observed. This is a process that can be seen from the beginning of September until the end of March.

This corresponding initial situation is also true in the North Sea. It has about twice the volume and stores a great amount of warm water from the North-Atlantic with much higher salinity as in the Baltic. Therefore sea icing in the North Sea is much less and seldom observed.

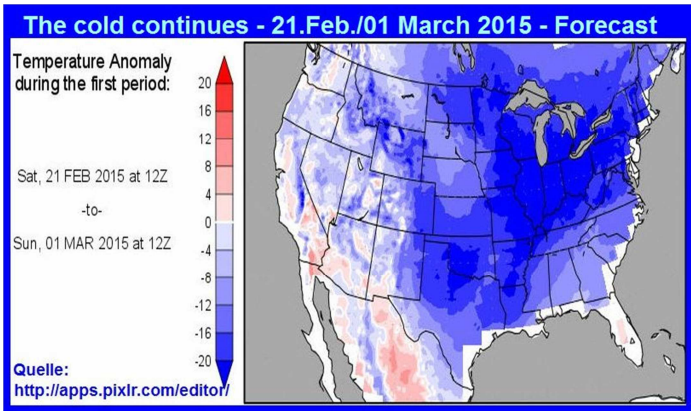


Small and large weather situation on February 22, 2015, influence in the Chicago area?

Europe is not the world. However Western Europe is under the influence of the weather belt from West to East. Atlantic low pressure areas move east (Fig.17), unless cold continental high pressure air blocks them. These are the winters that Europe talks about. This succeeds very well when the North Sea and Baltic do not assist the Atlantic weather because they cannot release enough heat or are hindered by sea icing. In this winter they are perfect helpers and keep the cold from Siberia at a safe distance. (Fig. 14-16).

But the more Atlantic weather governs the situation beyond the Ural the further winter Polar and Siberian Cold will move east. This can be felt in Alaska, Canada and perhaps in the U.S.A. These last days it has been extremely cold and in the coming weeks (02/22 to 03/01, 2015) deviations from the mean can be 20°C lower (Fig.18-19).

It is possible that the warm North Sea and Baltic waters make a contribution to the extreme cold in the U.S.A. Even a minor contribution should not be underestimated, and the mechanism understood.



Summary:

The facts are conclusive. "Global Climate Change" cannot cause a special rise in temperatures in Northern Europe, neither in the North Sea nor the Baltic or beyond. Any use of the oceans by mankind has an influence on thermo-haline structures within the water column from a few cm to 10m and more. Noticeable warmer winters in Europe are the logical consequence.

Author: Dr. Arnd Bernaerts, Hamburg, February 2015