Media Information

Dusseldorf, 03.05.2010

Stainless steel industry

Reducing CO_2 emissions by millions of tons possible through more intensive usage of scrap metal

- **Usage of stainless steel scrap: target mark 75%**
- **Billions in cost savings**
- **Intelligent recycling using blending process**
- **World markets open to trading in secondary raw materials**

CO_2 emissions from the production of stainless steel could be reduced by up to 37 million tons per year or 50% in the medium-term provided the production process uses greater quantities of high-quality stainless steel scrap instead of primary raw materials. This is the view taken by the Fraunhofer-Institute UMSICHT based in Oberhausen, Germany, in a study on behalf of the German-Dutch raw materials trading company, Oryx Stainless. The paper analyses how much environmentally harmful CO_2 can be reduced by using a higher percentage of high-quality secondary raw material blends instead of primary raw materials to produce new stainless steel.

Overall, based on the forecast global production, the year 2015 could see a reduction of CO_2 emissions amounting to more than 110 million tons, provided stainless steel production uses 75% stainless steel scrap. This is equivalent to the CO_2 emissions of more than 10 million people, in other words a megacity or a country such as Belgium.
In addition, industry could achieve billions in savings through their reduced need for pollution rights.

Currently, an average of only 50% of stainless steel scrap is used in the production of new stainless steel products.

Despite the limited reserves of secondary raw materials worldwide, Roland Mauss, a Board Member of the Oryx Stainless Group, says that in the medium-term this level can be raised to 75% through smart recycling methods. "Given the need to use our environmental resources and reserves of primary raw materials both sparingly and efficiently, 75% is a sensible target going forward."

To achieve the 75% target, Oryx takes the view that reserves of secondary raw materials should be more intelligently utilised through implementing modern processes such as blending; this is a customised raw material compound comprising a wide variety of steel and stainless steel scrap. Through using such processes, the volume of secondary raw materials used in the production of new stainless steel can be increased two- to three-fold. The potential for the optimal utilisation of stainless steel scrap reserves is considered to be substantial both around the world and in Germany. Says Oryx Board Member Tobias Kämmer: "In Scandinavia there are already leading stainless steel producers that have progressed to the technical limits, and are using up to 95% of secondary raw material blends in the production of new stainless steel. To help us continue to use our natural resources sparingly, the expertise surrounding the possibilities of raw material blends should be exported around the world."

To be able to deliver the right compound to the steel foundries at the right time, accessible, open world trading markets in stainless steel scrap are a must. Intelligent recycling has to take precedence over national protectionism. This will also entail establishing appropriate legal frameworks and solving disputes between the various bodies of regulations, such as REACH and the EU legislation governing waste.

In addition, market transparency needs to be increased in order to provide a more efficient overview of available supplies of stainless secondary raw materials. Says Board Member Roland Mauss: "What we need is an electronic information platform for stainless steel scrap so that the globally operating suppliers and traders can interact even more efficiently." The assumption here is that demand will strengthen in the wake of the projected increase in global production from 24 million tons currently to over 32 million tons in 2015.

In a comprehensive analysis commissioned at the end of 2009 by Oryx Stainless, the Fraunhofer-Insitute UMSICHT examined - step-by-step - the impact of the processes involved in the production of stainless steel on CO_2 emissions. The analysis involved the comparison of stainless steel made with stainless secondary raw materials with that produced with primary raw materials. The Oryx Stainless Blend was used as a yard-stick in the usage of stainless secondary raw materials in the production of stainless steel.

Please find more information under: http://www.oryxstainless.com/

Notes to the editor:

Founded in 1990, **Oryx Stainless Group** is among the world's leading trading companies in raw materials used in the production of stainless steel products. The company's business focus, with locations in Mülheim an der Ruhr in Germany and Dordrecht in the Netherlands, is on the handling and processing of stainless steel scrap into Oryx Stainless Blends. These individually customised, secondary raw material blends for respective stainless steel producers are designed to replace, above all, primary raw materials such as ferronickel, ferrochromium and ferromolybdenum.

As a member of the Fraunhofer-Gesellschaft, the Institute **Fraunhofer UMSICHT** operates in the tradition of market-oriented, applied research and development. Since its founding in 1990, the company's technological breakthroughs in the areas of the environment, basic materials, processes and energy have helped drive progress in sustainable economic management, environmentally-friendly practices and innovative behaviours. On the international stage, the company is mainly active in Europe.

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