

Sustainability is our responsibility

CARBON FOOTPRINT

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Foreword

Dear Stakeholders,

It is my pleasure to present DyStar Group's second Annual Carbon Emissions Report based on activity data collected from across the company in 2011.

Our first report in 2011 helped us to establish the base year for DyStar Group's carbon dioxide (CO₂) inventory for the calendar year 2010 in line with established international reporting frameworks such as the WRI / WBCSD Greenhouse Gas (GHG) Protocol.

Measuring, reducing and reporting organizational carbon footprint is an important aspect of our wider sustainability commitment. We acknowledge that we have a critical role to play in mitigating climate change by introducing innovative products and services that reduce carbon emissions of our customers, and by reducing our own carbon footprint. Reducing carbon footprint not only benefits the planet, it also makes business sense as cutting emissions lowers business cost.

Over the past year, we have implemented and improved methods and mechanisms for gathering reliable activity data for various sources of emissions within the DyStar Group. We are also evaluating options and possibilities for reducing emissions from various sources. We are gearing up organization-wide resources to achieve this.

We have voluntarily set a target to reduce DyStar Group's carbon emissions by 20% by 2020 from the 2010 level. Essentially, we would have to find ways to reduce consumption of energy while still delivering healthy growth in business, and the best-in-class products and services that DyStar is reputed for. I am confident that with the carbon reduction initiatives as well as a number of other sustainability programmes, DyStar would continue to strengthen its reputation as a responsible and trusted brand.

Jamy Mohrand.

Harry Dobrowolski Group CEO / President

"Year 2011 was an important year for us. We set ambitious targets and goals for reducing emissions and started developing programs to make this happen. As we move forward, optimizing energy use is going to be a crucial area to reduce emissions across our business."

DyStar Group Carbon Footprint Report

Dr. Charu Jain Global Sustainability Manager, DyStar Group

This report presents DyStar Group's carbon dioxide inventory for the reporting year of 1st January 2011 to 31st December 2011.

This is DyStar Group's second Annual Carbon Footprint Report. DyStar published its first Annual Carbon Footprint Report in 2011, based on data from 2010 after the company completed an extensive, companywide global exercise to identify the main sources of greenhouse gas emissions and started gathering activity data.

In 2011, data gathering mechanism was further strengthened where a monthly monitoring of emissions was introduced to gain greater insight into the sources of emissions. Our efforts during the year helped us grow our understanding of the sources of emissions and challenges involved in reducing those emissions. We are in the midst of implementing additional measures aimed at making DyStar Group even more carbon efficient.

As in the previous year, DyStar Group continued to focus on scope 1 and scope 2 emissions in 2011.

Based on the activity data collected, DyStar Group's global carbon footprint for 2011 was calculated to be 168,133 metric tonnes of CO_2e . This was slightly more than 160,993 metric tonnes of CO_2e in 2010 largely owing to higher production volume, and improved coverage of activity data as we further streamlined the data collection processes and methods. However, our emission intensity per tonnes of production remained unchanged at 1.7. Emission intensity per million dollars of turnover was 216 in 2011, down from 235 in 2010.

This report is based on the Greenhouse Gas Protocol (GHG Protocol), a global reporting framework jointly developed by the World Resource Institute and the World Business Council for Sustainable Development.

Emissions data presented in this report were collected from DyStar production sites, laboratories, and offices worldwide including our headquarters in Singapore. A key purpose of tracking organizational carbon emissions is to identify opportunities to reduce emissions by deploying reduction strategies. DyStar Group remains committed to collecting relevant data across the company to be able to annually report on greenhouse gas emissions. This is in line with DyStar's overall sustainability strategy to continuously reduce operational impact on the environment.

DyStar Group's carbon emissions can be mainly attributed to the use of purchased electricity and steam, natural gas, CNG, LPG, diesel and petrol.

Most of DyStar's direct emissions (scope 1 emissions) come from emission sources at production facilities. DyStar's indirect emissions (scope 2 emissions) are based on purchased electricity and steam. In 2011, DyStar production facilities accounted for 96% of the total emissions, a small improvement over the 97% figure in 2010.

Key emissions figures are presented in the tables on the following page.







Overall summary of emissions

Emissions summary					
CO ₂ e tonnes				onnes	
Emission sources	2010	%	2011	%	
Scope 1	30,548	19%	31,019	18%	
Scope 2	130,445	81%	137,114	82%	
Total CO, emissions	160,993		168,133		



Summary of emissions from production and non-production activities

immary			
		CO ₂ e te	onnes
2010	%	2011	%
155,795	97%	161,265	96%
5,198	3%	6,868	4%
160,993		168,133	
	Immary 2010 155,795 5,198 160,993	Immary 2010 % 155,795 97% 5,198 3% 160,993	Immary CO2e to 2010 % 2011 155,795 97% 161,265 5,198 3% 6,868 160,993 168,133







Detailed summary of sources of emissions

Break up of emissions					
		CO ₂ e tonnes			
Emission sources	2010	%	2011	%	
Scope 1					
Stationary combustion	28,591	94%	29,095	94%	
Mobile combustion	1,957	6%	1,924	6%	
Total Scope 1 emissions	30,548		31,019		
Scope 2					
Purchased electricity	130,445		137,114		
Total Scope 2 emissions	130,445		137,114		
Total CO ₂ emissions	160,993		168,133		



Purchased electricity

CO₂ emissions intensity

Carbon intensity is a measure of carbon usage by a company in relation to business performance during the same year. Based on the emissions and production figures and sales turnover during the same period, we calculated carbon intensity of our operations.

Emissions intensity in terms of production remained unchanged in 2011 at 1.7 as compared with 2010.

Carbon emissions intensity figures are presented in Table 4.

CO₂ emissions intensity per tonne of production and per \$million turnover

Table 4		
CO ₂ emissions intensity statemen	t	
	2010	2011
tCO ₂ e per tonne of production	1.7	1.7
tCO ₂ e per \$ million turnover	235	216



1. Greenhouse gases

All greenhouse gas (GHG) emissions figures are in metric tonnes of carbon dioxide equivalents (CO₂e) and include all six greenhouse gases covered by the Kyoto protocol – carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and sculpture hexafluoride (SF_c) emissions.

2. In view of gathering consistent and reliable data for previous years owing to several changes in the organization in recent years, 2010 has been determined to be our base year for reporting GHG emissions.

3. Reporting Principles

Our carbon footprint report is based on the below-mentioned Reporting Principles advocated by the GHG Protocol Initiative.

The GHG accounting and reporting shall be based on the following principles: • Relevance:

Ensure the GHG inventory appropriately reflects the GHG emissions of the company and serves the decision-making needs of users — both internal and external to the company.

Completeness:

Account for and report all GHG emissions sources and activities within the chosen inventory boundary. Disclose and justify any specific exclusion. • Consistency:

Use consistent methodologies to allow meaningful comparison of emissions over time. Transparently document any changes to the data, inventory boundary, methods, or any other relevant factors in the time series.

Transparency:

Address all relevant issues in a factual and coherent manner, based on a clear audit trail. Disclose any relevant assumptions and make appropriate references to the accounting and calculation methodologies and data sources used.

• Accuracy:

Ensure that the quantification of GHG emissions is systematically neither over nor under true emissions, as far as can be judged, and that uncertainties are reduced as far as practicable. Achieve sufficient accuracy to enable users to make decisions with reasonable assurance as to the integrity of the reported information. (Source: GHG Protocol)

4. Organizational boundary

GHG Protocol allows a company to define the organizational boundaries for carbon reporting according to definitions of 'equity share', 'financial control' or 'operational control'.

To give the most representative footprint, DyStar group defines its organizational boundaries using the operational control approach as defined in the GHG Protocol. The emissions of all operations over which the company has operational control and all owned and leased facilities and vehicles that the company occupies or operates are included in the report. Emissions are based on measurements or on estimations or extrapolations where no measured data is available.

We have reported on the emissions associated with energy that we buy or generate worldwide.

We have not reported for offices with less than 20 employees as emissions from these offices is estimated to be insignificant while data gathering would have required significant administrative and financial resources.

5. Operational boundary

Our report this year includes direct emissions under scope 1 and indirect emissions under scope 2.

Direct emissions under scope 1 include:

- Emissions from combustion of fuel in stationary sources
- Emissions from combustion of fuel in company-owned and leased mobile combustion sources

Fugitive emissions from refrigeration and air-conditioning are currently not reported as such emissions have been determined to be less than 5% of our overall emissions and considered not significant.

Indirect emissions under scope 2 include:

· All purchased electricity, heat and steam at grid average carbon intensity

6. Geographic scope

 $\rm CO_2$ emissions that fall within the organizational and operational boundaries have been reported for all worldwide operations.

7. Conversion factors

As electricity fuel mix and associated carbon intensity differs from one country to another we have used the Greenhouse Gas Protocol and International Energy Agency (IEA) conversion factors. National or plant specific emissions factors have been used wherever available.

For fuel use, we have used the most recent conversion factors published by the UK Department for Environment Food and Rural Affairs.

8. Emissions adjustments

We may develop improved calculation methodologies and tools as our knowledge, understanding and experience in carbon dioxide inventory development grows. In such an event, previous years reported emissions may be adjusted in line with the new methodology.

Adjustments to previous years' emissions may also be made when more updated emission factors or more accurate activity data become available to more accurately and consistently reflect actual emissions from year to year. Readjustments will also be made when there are significant structural changes in the organization. Emissions, including the base year emissions may also be adjusted upon discovery of significant errors, or a number of cumulative errors, that are collectively significant in line with the guidance provided by the GHG Protocol.

However, if adjustments are relatively insignificant or do not reflect a change in calculation methodology, recalculations will not be performed for previous years' emissions.

This year's report includes adjusted figures for 2010. The adjustment was felt necessary as more updated emission factors became available a well as improvements in our internal data collection methods made it possible to obtain more accurate activity data in some instances. On account of the readjustment, our emissions for 2010 have been revised to 160,993 tonnes, slightly lower than the originally reported 164,035 tonnes.

We have also changed the currency from Euro to US dollar for the purpose of reporting emissions intensity per \$ million turnover as we converted our accounting system from German GAAP to IFRS and changed the Group representation currency from EUR to USD. Our previous carbon emissions report calculated emissions intensity per million dollars of turnover based on 12 months emissions data and 11 months revenue data. This year, we have readjusted this figure by calculating the intensity based on 11 months figures for emissions and turnover to make the figures comparable year on year.

9. Verification

Our carbon emissions report is a voluntary initiative and as such we currently do not seek third party verification of emissions data reported. However, carbon emissions experts from CSRWorks International, the sustainability consulting firm we hired to assist in preparing the carbon emissions report, evaluated the data gathering methods and carried out quality checks for the sampled data. In addition, we have implemented an internal check and balance mechanism to improve quality and accuracy of data collected and reported.

This report is available online on DyStar website www.dystar.com

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Sustainability is our responsibility. At DyStar, our products and services help customers worldwide reduce costs, shorten lead times and meet stringent quality and ecological specifications.



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