

The Future Needs Copper

# Annual Report



1999 2000

## Raw materials



### Copper scrap

On average, the feed material copper scrap contains about 95% copper and is fully recycled at NA and HK.



### Copper concentrates

Copper ores with a copper content of 0.5 to 3% are enriched in the mine to copper concentrates with about 30% copper.

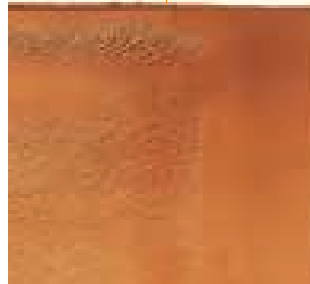
## Anodes



### Anodes

Anodes produced from copper concentrates or copper scrap consist of about 99.5% copper.

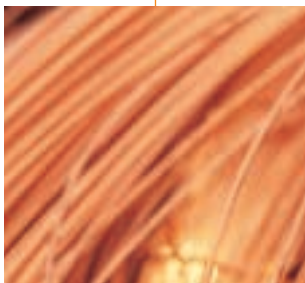
## Cathodes



### Cathodes

Anode copper is dissolved in the copper tankhouse and then deposited as cathodes. These copper cathodes with a purity of 99.99% are traded on the Metal Exchanges.

## Copper products



### Continuous cast wire rod

Molten copper is poured on to a casting wheel and solidifies there. The initially square-shaped copper strand is rolled by 13 roll stands to diameters of 8 to 20 mm. The continuous cast wire rod is the raw material for cable, wire and profiles.

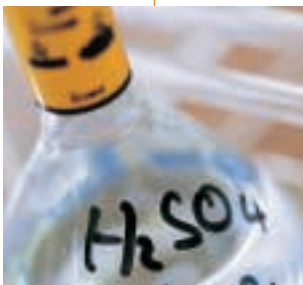


### Continuous cast shapes

NA produces copper cakes in a great variety of shapes, weights and alloys. The maximum piece weight amounts to 25 tonnes.

## The Value-added Chain of Norddeutsche Affinerie

### Co-products



#### Sulphuric acid

Premium quality sulphuric acid is produced from the sulphur contained in the copper concentrates.



#### Iron silicate

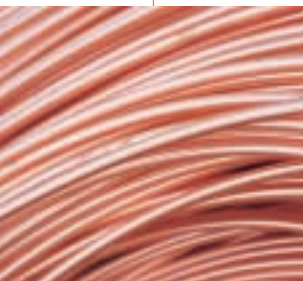
Useful bi-products from copper production: iron silicate stone and granules are produced from the iron silicate melt arising in the flash smelter – a versatile product for the construction industry.

### Precious metals



#### Precious metals

From gold to silver to platinum and palladium: the anode slimes from the copper tank-house are full of precious metals which we recover as saleable products.



#### TOP ROD

A special product to meet the highest demands, TOP ROD is an oxygen-free copper wire rod. The percentage of alloying elements included can vary up to 0.5 %, depending on customer requirements.

### Company profile

The Norddeutsche Affinerie Group is the largest integrated copper producer in Europe. With about 3,200 employees, it produces more than 700,000 tonnes of copper and copper products per annum and is one of the leading copper producers worldwide. NA's industrial concept is based on the integration of the core segments of copper production and processing. Our technological leadership, sustained market orientation and leading position in environmental protection form a solid foundation for this.

Our customers include the cable, electro, telecommunications and chemical industries as well as the suppliers of the construction and automobile industries. The NA Group is oriented towards good profitability and long-term value added. Our strategy of internal and external growth in the core business includes the expansion of the product range by the addition of copper products with higher value added.

# Consolidated Key Figures

		97/98	98/99	99/00
Copper price LME settlement (average)	US\$/t	1,747	1,526	1,787
<b>Profit</b>				
Turnover	mill. €	1,197	1,135	1,897
EBT*	mill. €	78	49	65
EBT	mill. €	78	49	69
EBIT	mill. €	73	49	74
EBDIT	mill. €	98	72	107
Annual surplus	mill. €	30	24	41
DVFA/SG cash flow**	mill. €	62	49	78
<b>Balance sheet</b>				
Total assets	mill. €	483	462	691
Fixed assets	mill. €	114	146	237
Capital expenditure***	mill. €	42	57	79
Depreciation	mill. €	25	23	33
Net equity (incl. unappropriated profit)	mill. €	233	233	250
<b>NA Shares</b>				
Market capitalisation at end of business year	mill. €	360	320	378
Earnings per share*	€	0.95	0.75	1.20
DVFA/SG earnings per share**	€	0.96	0.82	1.26
Price/earnings ratio as at 30.9.		11.90	13.40	9.80
Dividend per share	€	0.77	0.72	0.75
<b>Human resources</b>				
Number of employees (average)		2,303	2,190	3,154
Personnel expenses	mill. €	115	110	150
<b>Production</b>				
Cathodes****	1,000 t	364	366	503
Continuous cast wire rod****	1,000 t	320	277	382
Continuous cast shapes	1,000 t	176	149	197
Gold	t	15	17	20
Silver	t	266	372	483

\* Without minority interests

\*\* As per the German Society of Investment Analysts and Asset Managers/Schmalenbach Gesellschaft

\*\*\* Without changes in the circle of consolidated companies

\*\*\*\* Including Hüttenwerke Kayser and HK's share of Deutsche Giessdraht since 1 January 2000 respectively

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# Supervisory Board

**Paul Hofmeister**, Hamburg  
Honorary Chairman

**Dr Carl Voigt**, Rodenbach  
Chairman  
Member of the Executive Board  
Degussa-Hüls AG, Frankfurt

**Hans-Jürgen Grundmann**, Seevetal\*  
Deputy Chairman  
Shop mechanic  
Chairman of the Works' Council  
Norddeutsche Affinerie AG

**Joachim Bruhn**, Hamburg\*  
Coppersmith  
Member of the Works' Council  
Norddeutsche Affinerie AG

**Meinhard Carstensen**, Hamburg  
Member of the Supervisory Board  
Dresdner Bank AG, Frankfurt

**Gottlieb Förster**, Itzstedt\*  
Union Secretary  
Industrial Union: Mining, Chemistry, Energy,  
Hanover

**Dr Peter von Foerster**, Hamburg  
Chairman of the Supervisory Board  
Alsen AG, Hamburg

**Prof. Dr Ing. Jürgen Haußelt**, Germersheim  
Head of the Institute for Material Research  
III of the Research Centre Karlsruhe GmbH,  
Karlsruhe

**Gerd Körner**, Hamburg\*  
Commercial employee  
Member of the Works' Council  
Norddeutsche Affinerie AG

**Günter Kroll**, Hamburg\*  
Graduate engineer  
Head of the Vocational Training Department  
Norddeutsche Affinerie AG

**Egon Schäfer**, Sarstedt\*  
Union Secretary  
Industrial Union: Mining, Chemistry, Energy,  
Hanover

**Prof. Dr Fritz Vahrenholt**, Hamburg  
Member of the Supervisory Board  
Deutsche Shell AG, Hamburg  
Member since 26.11.1999

**Dr Ing. Ernst J. Wortberg**, Pogeez  
Chairman of the Executive Board  
L. Possehl & Co. mbH, Lubeck  
Member since 20.1.2000

\*Elected by the employees

A complete list of offices held as per KonTraG (Law on controlling and transparency in the corporate sector) is given on pages 95/96.

## Executive Board



**Dr Werner Marnette**  
Hollenstedt,  
Chairman of the Board  
and Director of Labour  
Affairs

Born in 1945. After studying non-ferrous metallurgy/electrometallurgy and four years as a scientific assistant at the Institute for Metallurgy and Electrometallurgy of RWTH in Aachen, when his doctorate was conferred, his professional career commenced in 1978 as a production assistant at Norddeutsche Affinerie. In 1979 he changed to Korf Stahl AG and returned one year later when he was appointed assistant to NA's Executive Board. After being appointed Head of Smelting Operations in 1986, he became a Deputy Member of the Executive Board in 1990 and a Full Member of the Executive Board in 1992. On 4 February 1994 he was appointed the Chairman of the Executive Board and, additionally, in 1997 Director of Labour Affairs at NA. In 1994 he joined the Presiding Committee and Board of the Wirtschaftsvereinigung Metalle (Federation of the Metal Industry in Germany) and was elected President in 1998. In 1996 he became a member of the "Plenum" of the Hamburg Chamber of Commerce. From 1997 to the end of 2000 he was the President of the European parent association of the non-ferrous metals industry "Eurometaux". He has been a member of the Supervisory Board of the Hamburgische Landesbank since 1997 and since 1998 a member of the Board of BDI (Bundesverband der Deutschen Industrie e.V. – Federation of German Industry). In February 2000 he became the Chairman of the Supervisory Board of Hüttenwerke Kayser AG.



**Dr Michael Landau**  
Mölln,  
Member of the Board

Born in 1950. After graduating in non-ferrous metallurgy he was a scientific assistant at the Institute for Metallurgy and Electrometallurgy of the Technical University in Clausthal from 1975 to 1981. After the conferment of his doctorate he joined Norddeutsche Affinerie in 1981 as a production assistant. In 1983 he took over the position of Production Superintendent and in 1994 was appointed Head of Copper Plants. He was the Joint General Manager of the Business Unit "Copper Production and Recycling" from 1996 until his appointment as Deputy Member of the Executive Board in 1998. Since 1 June 1999 he has been a full Member of the Executive Board.



**Wilfried Sehner**  
Lünen,  
Member of the Board  
(until 31.12.2000)

Born in 1953. After being appointed Deputy Member of the Executive Board in 1998, he was a full Member of the Executive Board from 1 June 1999 until 31 December 2000.

# Interview with the Chairman of the Board



**Dr Marnette, how would you assess the results of the business year 1999/2000?**

We are very pleased with the last business year. The strong demand for copper resulted in record sales figures for our main products, continuous cast wire rod and shapes, for which we would like to thank our customers. With a pre-tax profit in the Group of 69 million €, we were able to increase our profit significantly. In addition, turnover grew to 1.897 billion €. On top of this, we are also working successfully on new specialty products, such as copper thin strip, and on future-oriented projects, such as copper-based photovoltaics. The target is to increase our product range. With our overall strategy we are optimally positioned for the future in the interests of our customers and shareholders and have already initiated further growth.

**After the integration of Hüttenwerke Kayser, NA is on course for expansion. Are you on the lookout for further companies?**

We shall also in future continue to look around for interesting companies in and outside Europe, which could enrich the NA portfolio. However, at present our chief concern is to press on with internal growth in the NA Group. We have already reached a high level of productivity at our Hamburg

location and have implemented corresponding steps at Hüttenwerke Kayser in Lünen. A glance at our key figures shows that, in international competition, NA is in the first league. We will, of course, not rest on our laurels, particularly since our targeted cost advantages could be eaten up by external impacts. That means: we must be even more cost-effective than hitherto in our production. Steadily improving performance will continue to be the target of our actions.

**And where exactly does the NA Executive Board want to invest? Abroad? In a greenfield solution?**

We shall check all our options. The capacity expansion in Hamburg was an important investment decision. The scheduled standstill of the flash smelter in our East Smelter was the deciding factor in our considerations. The crucial question was: just maintenance work or an additional expansion as well? We decided to go for expansion and modernisation with a capital expenditure volume of about 100 million €. In comparison with a completely new construction, this is a very cost-effective and profitable investment. Nevertheless, at the same time, a new production plant built for the further processing of copper is certainly conceivable.





## *Dr Werner Marnette in the dialogue*

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### **Will the standstill in the heart of NA have an impact on the profit for the business year 2000/2001 and the dividend?**

Right from the start, we included these questions in our deliberations. I can assure our shareholders that the profit will be a little lower only in the first quarter. The capacity expansion now enables us to produce a greater output which, in the following quarters, will more than compensate for the first three months. This is because the costs for processing copper concentrates at NA are sinking significantly whilst, in parallel, productivity is substantially rising. As a result, we are strengthening our international leading position. From 2002 onwards, the Group's target for its profit before taxes on income is about a 15 % increase to 75 – 80 million €.

### **Does this expansion fit at all in the economic environment?**

NA has chosen just the right time. The demand for copper is growing faster than the production capacity and our customers' industries have set their sights on growth. What is more important: we are not just in the era of globalisation, but also in a revolution of energy and communications

technology. New technologies, applications and products are conquering the world. Moreover, copper is the material of this new age. Without copper no data highways, no PCs, no mobiles, no utilisation of energy. In a simple formula: without copper no progress.

NA will especially benefit from the increasing intensity of copper utilisation in the industries of the future: telecommunications, automotive and energy.

### **On to external growth: how did NA handle these steps?**

The most important step was the integration of Hüttenwerke Kayser and thus NA's expansion to the world's largest copper recycler. We mutually localised and, in some instances, have already realised synergy effects and possibilities for economy. Particularly the integration of Hüttenwerke Kayser has significantly improved NA's position in the copper market, in recycling and in the continuous casting wire rod business.

# Interview with the Chairman of the Board

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## **Is recycling then so important for Norddeutsche Affinerie?**

Not only for NA: copper recycling is an essential part of sustainable development, since this cycle economy protects natural resources and saves energy. Copper is one hundred per cent recyclable without any loss of quality or value. Thus, it ideally fulfils the demands of sustained economy. Copper recycling is increasingly gaining in importance and consequently is given great priority by us. We are already ranked “no. 1” worldwide in this, but within our Group we shall also enhance HK’s position still further to make it the excellency in the copper recycling market.

## **In July 2000 China’s Prime Minister Zhu Rongji visited your works. Why did he choose NA?**

China is one of the most important copper markets. But copper is still produced there to a comparably low technological and environmental standard. The Prime Minister was therefore able to satisfy himself about the high standards of a leading company in the copper industry.

## **You won the “Capital” Investor Relations Award 2000 in the SDAX Segment and your IR work has been widely acclaimed. Your target for the future?**

This prize is a distinction in recognition of our active investor relations work. Since our IPO we have kept the NA shareholders, fund managers, analysts and the press well and extensively informed. Thanks to the constructive dialogue, we receive important suggestions which show us the way forward. We shall also in future continue to incorporate these ideas. In this respect, the distinction is both an incentive and an obligation. Apart from our clear growth strategy, we are oriented towards a further positive trend in our share price.

## **You have introduced performance-oriented remuneration. Do NA shareholders also benefit from this system?**

With this measure NA is once again showing the way. The idea behind it is that our qualified and performance-oriented employees make a decisive contribution to NA’s success. We are additionally stimulating the motivation by new performance incentives in remuneration. In this way NA will perform even better in future. This system is oriented towards growth and increasing company value – in the interests of our employees and shareholders.

# NA Shares

**Security Identification No. 676650**

**Reuters code: NAFG, Bloomberg: NDA GR**

	99 00	98 99
Market capitalisation as at business year-end in million €	378	320
Number of shares in million units	32	32
Dividend or recommended dividend respectively in €	0.75	0.72
Dividend with tax credit in €	1.07	1.02
Payout ratio in %	74	92
Closing price in Frankfurt as at business year-end in €	11.80	10.00
Earnings per share in €*	1.20	0.75
DVFA/SG earnings per share in €	1.26	0.82
Price/earnings ratio as at business year-end	9.80	13.40

\* Without minority interests

**A high dividend yield and  
the successful growth strategy make  
NA shares an attractive investment  
in a company which is  
oriented towards Europe.**



# NA Shares

From October 1999 to the end of December 2000 the NA share price showed a very positive development. In this period NA shares increased by more than 25 % from 10 € to 12.80 €.

## NA shares in the market climate

At 10.20 €, the opening price of the business year 1999/2000 was 0.20 € higher than the closing price of the previous year. In the following months the share price ranged between 10 € and 11 € and on 15 March 2000 was quoted at 10.99 €. This development was supported by private investors who are interested in a good dividend yield.

In the same period the DAX continued to soar to new altitudes and on 7 March 2000 passed the 8,000 mark for the first time. However, the DAX could not maintain this record high and had retreated to between 7,400 and 7,900 points by the beginning of April 2000.

On the day of the Annual General Meeting on 4 April 2000 our closing price was quoted at 11.40 €. Due to the dividend payment of 0.72 € without the tax credit, and 1.02 € with the tax credit, there was a 0.90 € drop in the share price. At the end of May, however, the NA share price edged up again and climbed past the 11 € mark. In a continual upward trend the share price then rose to 12.50 € on 12 September 2000, its highest level for the business year 1999/2000. On the last day of trading in the business year the NA share price closed on the Frankfurt Stock Exchange at 11.80 €. This positive trend has continued until the end of the year 2000 when it closed at 12.80 €.

After the peaks at the beginning of the year 2000, the DAX lost ground to a level clearly under the 7,000 mark. In recent months the significantly increased oil price, the weak Euro as well as a slowdown emerging in the economic trends have had a strong impact on the development of the German stock market. Negative tendencies from the USA, inter alia profit warnings for Nasdaq shares, additionally caused declines on almost all stock markets worldwide.

The development of the NA share price

in €



The turbulences on the stock markets – above all with the technology shares – had considerably less effect on the more stable SDAX. However, NA shares continued to outperform the SDAX. By the beginning of June 2000 the NA share price had developed significantly better than this index and from mid September 2000 this positive trend was strengthened once again. Since May 2000 NA shares have proved to be more steady than the DAX and could substantially enhance their lead by the end of the year.

We shall continue in future to direct our actions to achieve our target of a sustained increase in the value of NA shares. To this end, we shall pursue our successful business policy and the NA strategy, which is oriented to increasing company value.

### Changed shareholders' structure

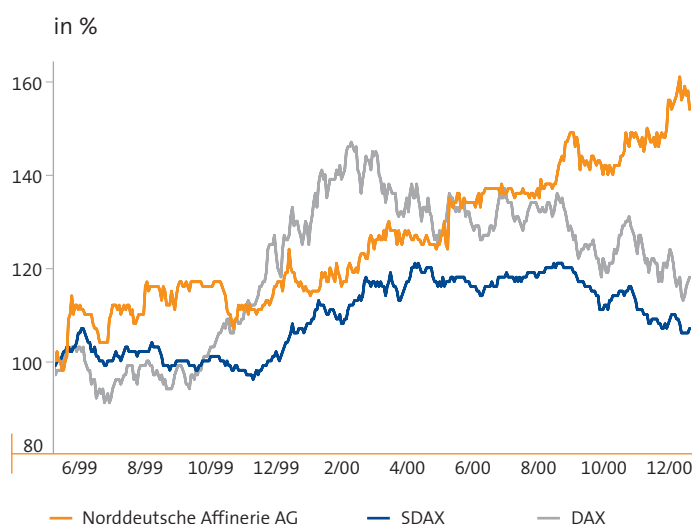
Degussa-Hüls AG advised us that it only holds its stake in NA indirectly and as of 14 September 2000 had transferred its shareholding to its wholly-owned subsidiary dmc<sup>2</sup> (Degussa Metals Catalysts Cerdec AG). As a result a 10% stake in NA is held each by two major shareholders: dmc<sup>2</sup> and L. Possehl & Co. mbH. A further major shareholder is Dresdner Bank AG with an 8% stake. In January 2001 it reduced its 10% holding by selling 2% to an institutional investor. 72% of the shares are thus widely held, about 31% by institutional investors and approx. 41% by private investors. In the last business year we

could also gain further British and North American investors as a result of our active investor relations work.

### Research – the company in the analysts' focus

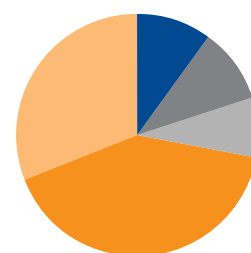
Within the framework of our aggressive investor relations, the increased communication has had the result that analysts and the financial community show an increasing interest in NA. Consequently, the number of research reports published on NA has steadily risen. With nine analysts' reports – seven of which with recommendations to buy – NA has taken a leading position in comparison with other SDAX companies. It remains our main target to ensure that NA becomes constantly wider known and that our business is presented in a transparent light. For this reason, regular presentations and discussions with

### NA shares outperform the SDAX and the DAX



### Shareholders' structure

in %



dmc <sup>2</sup> AG	10 %
L. Possehl & Co. mbH	10 %
Dresdner Bank AG	8 %
Private investors	41 %
Institutional investors	31 %

analysts and fund managers are arranged in order to explain to them, in particular, our strategy for growth and increased earnings.

## **More widely known through roadshows**

Presentations and analysts' discussions were arranged in London for the start of our international roadshow in spring 2000. These were followed by visits to financial institutions and analysts at the East and West Coasts of North America. The result of our visits to these potential investors was a positive resonance to NA's standing. In this way we have gained a number of foreign investors. But we are regularly active in Germany as well – above all in Frankfurt – in order to intensify the dialogue with asset managers and analysts.

## **“Capital” Investor Relations Award 2000 to NA**

NA has won the renowned “Capital” Investor Relations Award in the SDAX category within the framework of a survey conducted by the economic journal “Capital” amongst 1,500 members of the Deutsche Vereinigung für Finanzanalyse und Asset Management (German Society of Investment Analysts and Asset Managers). Amongst all the German companies listed on the stock exchange NA was even rated ninth. With the number of

points reached, we would have also won in the DAX segment. The prize-giving to the Chief Executive Officer, Dr Marnette, and to the investor relations team was held on 5 September 2000 in Frankfurt and attracted considerable media coverage. This award is both an incentive and obligation for us to increase still further the acknowledged high standard of NA investor relations – in our shareholders' interests.

## **High level of communication and information**

In the business year 1999/2000 NA continued to hold its already established information days for private shareholders. Under the motto “Dialogue with the shareholders” more than 800 shareholders visited their company in a total of ten events spread from May to August. The programme included a works' tour and a detailed presentation with subsequent discussion. The Executive Board and members of our investor relations and public relations teams were available to answer the visitors' questions. As a consequence, the shareholders could personally assess the attractiveness and future potential of their NA. Intensive communication and information were also in the foreground of our meanwhile traditional participation in the Hamburg Stock Exchange Open Day in October 2000.

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### **Continuity of dividend policy**

NA defined its dividend policy when it was floated on the Stock Exchange in 1998. It is our target to pay a good dividend to the shareholders with a payout ratio of about 70 % of the annual surplus. In future, NA will continue to be an attractive dividend stock and, at the same time, take every opportunity to increase company value and growth.

At the Annual General Meeting on 22 March 2001 the Executive and Supervisory Boards will recommend a dividend of 0.75 € per share for the business year 1999/2000. Related to the last NA share price on 29 September 2000, this represents a net dividend return of 6.4 %. Including the tax credit for German shareholders, NA shares are achieving a return of 9.1 %.

### **Listing in official trading in Hamburg**

For the North German area, the acceptance of NA shares for official trading on the Hanseatic Stock Exchange on 7 December 1999 was an important event. Our company's clear commitment to its Hamburg location was given great attention in the media, politics and in considerable areas of trade and industry. Due to its market capitalisation, liquidity, industry weighting and the significance for the region, NA has been traded on the Hamburg Stock Exchange index HASPAX since autumn 1999.

### **Interest in stock options**

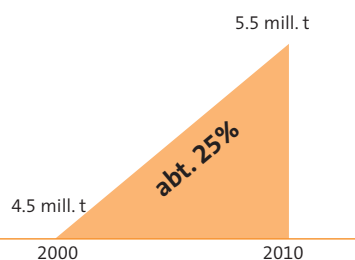
NA's stock option plan provides for five tranches. In the year 2000 the third tranche was approved by the Supervisory Board. 97 % of the entitled senior staff have subscribed to the three tranches issued to date. The performance-oriented stock option plan entitles senior staff to acquire convertible bonds. A contingent capital in the sum of 4.9 million € was approved at the Annual General Meeting to cover them. The conversion right from the respective three year bonds may only be exercised if, in the period from issuing the bonds to shortly before the Annual General Meeting of the year of maturity, the NA share price has developed better than the CDAX.

# The Strategy of Norddeutsche Affinerie

NA's strategic orientation in the last few years has been the implementation of the exceedingly successful programme Vision NA 2000. Focal points were the steady restructuring of the business portfolio, the development of copper products with high value added and the measures for internal and external growth.

## The market grows faster than the capacities

Annual copper demand in Europe



At the beginning of the new century NA is optimally positioned for the challenges of the future: the successful IPO as well as the extensive modernisation and expansion investments have created the basis for this. Today, we are already firmly established in all the important market segments and participate in the increasing demands of the growing copper market. A solid equity ratio and the capacity to act as an internationally oriented enterprise will also continue to shape our foundations in future. Proximity to the market and customer orientation are the guidelines of our actions.

At the same time NA is always interested in further progress: in the year 2000, as a service provider, the NA Group has therefore launched an eCommerce solution for the European copper industry. COPPER-ONLINE under the internet address [www.copper-online.com](http://www.copper-online.com) enables copper raw materials and products, such as cathodes, continuous cast shapes and wire rod, to be traded

electronically. In so doing, this forum offers much more than conventional internet marketplaces: it is a marketplace, portal, service and transaction platform, all in one, and through contract tracking facilitates inter alia the processing of transactions.

## Copper remains the core business

The significance of copper as a key element for many applications will also increase in future; it cannot be substituted by any other material. Even with a cautious assessment, the additional demand during this decade in Europe will grow within the next ten years from the current 4.5 million tonnes to 5.5 million tonnes p.a. This increase of about 1 million tonnes is roughly equivalent to three times NA's capacity. Copper production from primary and secondary raw materials and further processing will remain our core business.

With this background, the expansion of the concentrate processing facilities in Hamburg marks a milestone in internal growth and in further increasing earnings. Due to the integration of Hüttenwerke Kayser, NA has, in addition, developed to be the largest copper recycler in the world. We shall continue to enhance our efficiency and technological leadership in all sectors of copper production.

In copper processing we are orienting ourselves, above all, towards the growth sectors of copper applications, in which we can contribute our special know-how for cast products.



### Vision NA 200X

After the implementation of Vision NA 2000 we are ensuring the continuity of this successful programme by the steady transition into Vision NA 200X. The target: a long-term sustained increase in the value of the NA Group in the present decade.

To achieve this, we are pursuing an overall strategy which also goes beyond our traditional copper business:

#### 1. Strengthening the existing business

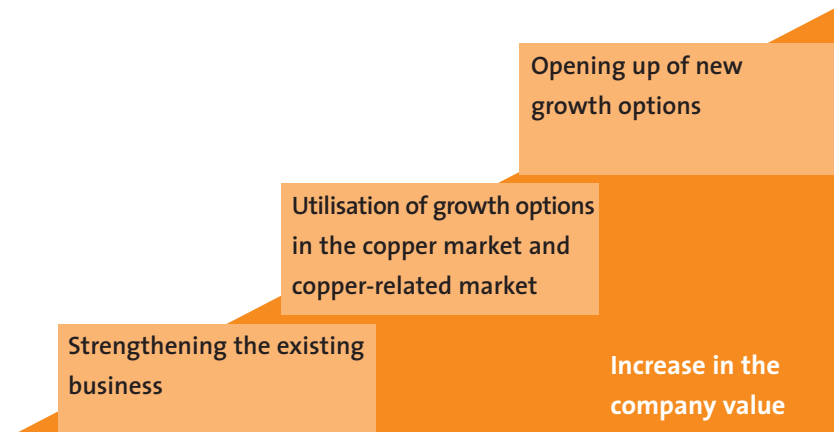
NA is enhancing its position as the leading copper enterprise in Europe.

#### 2. Utilisation of growth options in the copper market and copper-related market

By geographically expanding the existing business and moving forward into new product sectors, we are using all the possibilities for growth in the copper market and copper-related market. Oxygen-free and low-alloyed copper brands as a quality segment and copper strip as a new shape are excellent examples of these.

#### 3. Opening up of new growth options

It includes additionally the systematic establishing of new business lines in the innovative and intelligent technological areas of application, which are also to be found outside the copper market. The first project is the CIS solar cell.



With all three growth horizons, we are therefore concentrating on the development of tailor-made special products with the highest possible value added. Our target is to have high-quality solutions which meet customer requirements ideally. NA is thus positioning itself as a supplier of future technologies. The high innovation potential of copper is evident in the constantly arising new high-tech applications in energy, traffic and communications technologies. Hence, the intensity of copper utilisation is increasing in proportion to the rapid technological and economic development within this industry. But what counts more: copper, the material of the future – and linked to it the successfully positioned Norddeutsche Affinerie – are standing together inseparably behind the growth markets.

**The Future Needs Copper**

without copper

# The Future Needs Copper

## **Copper – base metal and economic factor**

For several thousand years mankind has used copper, one of the world's oldest materials. The story of the industrialisation and technical progress has been, above all, inseparably connected with the use of copper since the invention of the dynamo to produce electrical energy. Now, at the beginning of a new century, this impressive success story is continuing with increasing intensity. As an indispensable element in all areas of our modern life, copper is the modern base material. Its wide-ranging possibilities for application are increasing at the same rate as new technologies commence their triumphant advance worldwide. Internet, computers, mobile phones, modern traffic systems and power production are inconceivable without the innovative use of copper. In Europe alone, the annual copper demand will increase to about 1 million tonnes during the current decade.

## **Copper – a material as versatile as its applications**

Which then are the properties which make copper so essential for almost all areas of our life? Firstly, it is characterised by optimal electrical and thermal conductivity. As a result, copper is just right for the transportation of electrical current and energy as well as for the fast transmission of data and information.

Its physical and chemical properties, such as high thermal conductivity, ductility and resistance, are excellent. Copper can be alloyed with numerous other metals: new materials with wide ranges of application then arise from these compounds.

## **NA in the world of copper**

The spectrum of copper applications is becoming more and more versatile – copper demand not only grows with progress, it actually makes it possible. The natural resources of copper are ideally complemented by its almost 100% recyclability. This cycle protects valuable raw materials. Growth in the core business of copper therefore remains NA's most important target, also in future. A clear strategy is connected with this: our measures are oriented towards expanding the spectrum of copper products on offer for modern applications. We shall use our competence in the world of copper to develop products which are tailor-made for the future technologies. In consequence, NA will participate in the increasing intensity of using copper as the key material in the growth markets of telecommunications, energy and traffic.

Without



no



tell me why





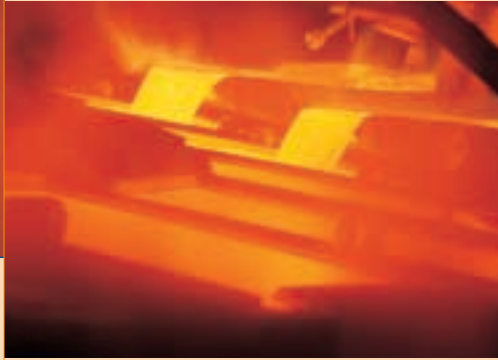
## Copper – growth motor for the information age

*By 2005 a further about 6 million Germans per annum will be using mobile communication – a growing market, also for copper.*



### Trend to mobile phones unbroken

Modern communication can hardly be imagined without the mobile. This technical achievement has found acceptance throughout the world. Without the additional input of copper, however, it would not have been possible – people would today still be telephoning via normal land lines. Because: copper is also the indispensable part of mobile phones and all transmission equipment. In the first half-year of 2000 alone, 4.3 million mobiles were sold. At the end of the year more than 40 million Germans were telephoning on mobiles. According to the “Gesellschaft für Unterhaltungs- und Kommunikationselektronik” this means almost twice as many compared with the same period the previous year. Thus, in record time, Germany has developed into the largest mobile phone market in Europe and the third largest in the world. By 2005 a further almost 6 million Germans p.a. will use mobile communication – a growing market, also for copper. According to the latest estimates, the number of mobiles produced worldwide p.a. will rise from the present 450 million to more than 1 billion in the year 2002.

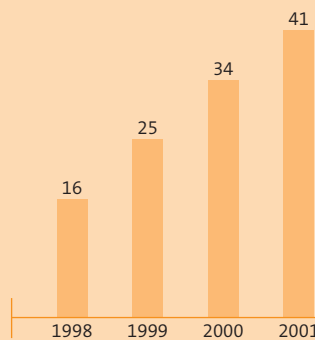


*Molten copper – the first stage to modern communication*

## UMTS – the new generation

With the introduction of new technologies and standards, mobile communication in future will become interesting for still more sophisticated and more complex applications. From 2002 the new data transmission technology UMTS will make the connection between mobile and internet 40 times faster than up to now. In so doing, a new dimension of mobile communication of unimagined quality will arise. But, before this can happen, substantial capital investment must first be directed into the necessary infrastructure and into a new mobile generation. The crucial point is that, without the input of copper, this innovation could not be realised. Only in this combination is technical progress derived from the UMTS concept.

**Mobile phone market in the EU**  
in bill. €



Source: European Information Technology  
Observatory EITO 2000

*Thanks to copper, technical progress is derived from the UMTS concept.*

Without





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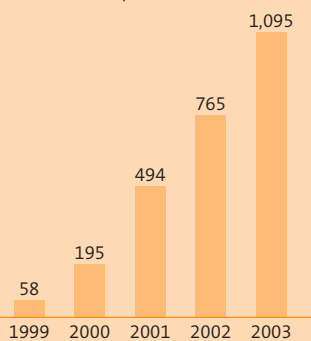
tell me why





*One of the oldest metals  
in the world was never before  
as topical as today.  
Copper: the metal of the future.*

**European market for  
xDSL technology**  
in mill. US\$



Source: Frost & Sullivan Report 3849

DSL: Digital Subscriber Line  
x: various forms of DSL technology,  
such as ADSL

The universal information and communication medium in all sectors of industry, politics and society is the computer. And here it is also true: without the input of copper the screen would stay dark, no e-mail would reach its recipient. Things which are still considered state-of-the-art technology today are already outdated tomorrow. The product lifecycle is getting shorter and shorter. Stronger operating systems, more complex programmes and multimedia applications require a continuously rising computer performance. The dynamic on the market of information technology also leads to an increased copper input here. Expressed in figures, this volume becomes clear: more than 2 million computers for almost 2.3 billion € were sold in Germany alone in the first six months of the year 2000. The potential in this market is growing all the time since the development of computer technology takes place in revolutionary steps. PCs are still the most important terminals for using the internet whereas the internet of the future will be characterised by novel, mobile devices.

### Number of internet connections increasing

The headlong speed with which this medium is changing our modern life is illustrated by the following figures: the worldwide online community grew last year to 220 million members, of which 18 million are German internet users. In the year 2005 it is expected that every third German will own his/her own internet access. There are more than enough reasons for this, but a so-called “high speed internet access” must be one of the most convincing. The normal ISDN connection today needs 12 – 15 minutes to download a file of five megabytes. With the innovative ADSL technology (asymmetrical digital subscriber line) only 60 seconds are necessary for this. Enormous data quantities can be transmitted via copper systems using this and other new technologies. In addition, the strongly increasing number of internet connections makes copper an important material in future, ideally complementing glass fibre. Because: at the beginning and at the end of the glass fibre systems, which can be imagined as enormous data highways, copper is always there. It ensures that data can be forwarded right into the home and into the user’s terminal. Likewise the optoelectric transformers within the glass fibre network would not function without copper.



*Pure copper with the highest electrical conductivity from the copper tankhouse*

### **Milestones in the semiconductor technology**

In the past few years the speed of a computer chip has doubled within 24 months respectively. Growth with this innovation rate had come within easy reach of its limits and a further quantum jump seemed unthinkable. But now progress is advancing in the form of a new copper chip. This uses copper's excellent electrical and thermal conductivity and thus enables still larger amounts of data to be processed in the smallest space. In doing this, the new chip is up to 30 % faster than the former chip generation. In the coming years the semiconductor industry reckons with two-figure annual growth rates. According to IBM, the market for such copper chips in the year 2002 will amount to about 7.5 billion US\$. Apart from mainframe computers, areas of application are devices for mobile use: mobiles, laptops, navigation systems and telematics benefit from the higher speed of the chips thanks to copper.

### **Copper as a pioneer**

The development of this and other products is definitely going in the same direction as microsystem technology today, that means to a compact design. The devices should be as small and easy to manage as possible and still provide top performance levels. Here copper impressively puts its unique product properties to the test. Only the use of this material makes it possible to produce closely packed, high performance, fast computers, which despite their compactness cannot be damaged by overheating. Because: copper quickly dissipates the heat arising.

*Increased performance due to copper: new chip 30 % faster.*

Without



no



tell me why



## Copper – mobility of the future



### The concept: the electromotor as the engine

Mobility belongs to the main basic needs of modern society. However, in order that the environment is not adversely impacted as a result, new concepts must be developed in future. Today, traffic on Germany's roads is responsible for almost 20 % of CO<sub>2</sub> emissions. The challenge is to improve the efficiency of the engine and, in parallel, reduce the vehicle size. The car of the future should be safe, clean and quiet. The solution is to be found in innovative technology, such as the car based on fuel cells or the

hybrid car. The hybrid car engine consists of a combustion engine and additionally of an electromotor. The electromotor's efficiency is optimally increased by the particularly good conductivity of copper. Supplied by the batteries recharged from the generator, it automatically supports the combustion engine whenever extra power is needed. With this intelligent hybrid concept, it is possible to adjust the car to the respective load requirements and to drive in the city in the electro-mode as quietly as a whisper and with full emission control. Copper as part of the electromotor and engine as well as of the power supply becomes even more important with the introduction of fuel cells. Thus, copper



*Special product to meet the highest demands: TOP ROD, the oxygen-free copper wire rod*



helps decisively to shape the future of car manufacture. In the car industry, copper demand will nearly double when series production starts. Currently about 25 kg of copper are used in an average car, peaking at even as much as up to 100 kg per vehicle.

#### **Without copper no movement**

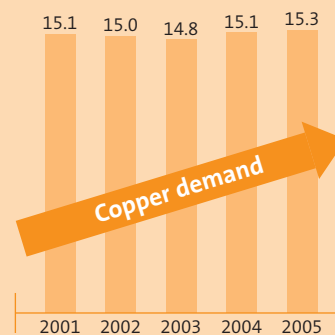
Other transport systems, such as the railways and aircraft, are also unthinkable without copper. Modern high-speed trains, such as the monorail Transrapid, would not be able to move a metre without copper, the material of the future.

*Modern traffic systems are unthinkable without copper.*

*Molten copper – the first step towards continuous cast wire rod*



**Increasing copper input in European automobile production**  
in mill. vehicles



Source: DRI

Without





no



tell me why





## Copper – energy of the future

### Copper – metal of sustainable development

The protection of natural resources in the sense of sustainable development is becoming increasingly important – worldwide. Thus, the increase of material and energy productivity must be the guideline for technological developments of the future. Copper has been fulfilling this prerequisite since time immemorial because it is a metal which is used and not consumed. Copper can be reused without loss of quality or value as often as required and in this way be supplied again and again for new applications. Consequently, natural resources are protected and valuable energy saved. Copper has the advantage over all other materials in this cyclic economy.

### Strong position in recycling

The recycling of copper was always one of NA's strengths, only surpassed by our present-day subsidiary, Hüttenwerke Kayser AG. It is the international leader in the recycling of copper-bearing secondary raw materials and therefore an elementary connecting link in the environment-oriented copper cycle. The integration of Hüttenwerke Kayser AG has considerably strengthened our position in recycling. Hence, NA as a Group is fully integrated in the efficient, closed value-added chain of copper: primary raw materials, recycling

raw materials as well as copper products form the pillars which today make us globally unique in this industrial combination.

NA feels obligated to sustainable development to protect and care for the environment. Responsible care in the handling of natural resources is practised by us daily: copper production and processing have achieved a leading environmental standard at NA and energy saving projects have significantly reduced NA's energy consumption. Work to this end is also still continuing.

### More copper – less energy consumption

In view of the duration of its useful life, copper is the material with the lowest specific energy consumption during production. As an innovative material, copper can make an important contribution to environmental protection and to conserving resources. An example: the increased industrial use of economical electromotors with a 25 to 100 % higher copper content compared with conventional engines could alone save German industry about 1 billion € in energy costs (EU Motors Study Group: Actions to Promote Energy-efficient Electric Motors, October 1996). More copper in the windings increases the efficiency of the motors by 20 %. A sensible investment in the future which is equally worthwhile for companies and the environment.



*Oxygen-free copper for high-tech applications*

In addition, copper enables the widespread use of renewable energy in the form of thermal and photoelectric solar plants. The excellent conductivity of copper also ensures minimum energy loss in refrigerators, air conditioning systems and heating systems.

### **Copper-based solar cells – NA enters a growth market**

Our competence in metallurgical process engineering, electrochemistry and the world of copper opens up new horizons. We are therefore going to use these abilities to launch on to profitable future markets. We are counting amongst these inter alia photovoltaics on the basis of copper-based solar cells.

Energy stands for life and copper stands for energy: our metal is indispensable for conventional and alternative energy systems. Regenerative energy sources, such as the sun, the water or the wind, are becoming increasingly important as substitutes for fossil fuel. Copper plays a central role in these future technologies. Today, the metal is already unsurpassed as regards the efficient use of the heat in solar collectors. Specially highly heat conductive copper from NA is already used in this sector to an increasing extent.

Solar cells for power production are today still generally made out of various silicon materials which are relatively expensive in their high-purity form. The alternative: CIS solar cells on the basis of the elements: copper (Cu), indium (In) and selenium (Se). These are already achieving a good performance but can still be optimised further. NA is therefore developing the CIS technology a decisive step further in order to make it more efficient and cost effective. Norddeutsche Affinerie is seeing here a further high-tech application for copper, the metal of the future.

*Power station sun – copper-based solar cells enable the effective use of renewable energy.*

**In the last business year NA enhanced its leading market position in copper production and processing and achieved a very good annual profit.**

# Management Report – NA AG and NA Group

## Outline conditions and trends in the industry

### Growing copper demand

NA is located in the largest copper market in the world. In the business year 1999/2000 strong industrial growth worldwide stimulated the demand for copper. In Europe, our core market, copper demand grew by 6.8%, worldwide a rise of 7% was recorded. In the year 2000 about 15.1 million tonnes of copper were used worldwide, of which 4.5 million tonnes – thus almost 30% – in Europe alone. Copper demand in Europe is expected to increase in the next ten years by 1 million tonnes to almost 5.5 million tonnes p.a. In Germany – by far the largest market within Europe – it will grow in the same period from the current 1.3 to 1.6 million tonnes. According to the latest forecasts the world copper demand will increase in the year 2001 by 4% to 15.7 million tonnes and in the year 2002 by a further 3.3% to 16.2 million tonnes. In 2001 the European copper demand will in all likelihood rise by 3.5%. The intensity of copper utilisation is following the increasing development in almost all industrial sectors.

In the business year 1999/2000 NA benefited from the significantly increased demand for copper and copper products worldwide and an industrial growth of on average 3.8% in almost all the important

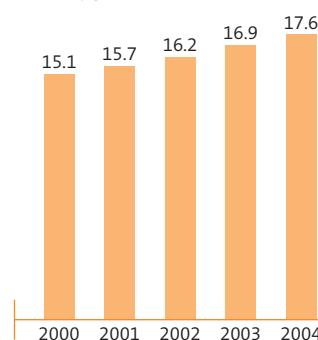
markets of the global economy. These outline conditions caused a positive trend in production and sales as well as declining stocks in the warehouses of the metal exchanges. Likewise, the inventories of the metal producers and processors as well as the price quotations on the exchanges did not remain unaffected by this.

### Intensity of copper utilisation increases

After some time, relatively high rates of economic growth at almost 3.5% could be recorded in the West European region. Increasing product sales, particularly in the copper processing industries, such as telecommunications, electrical engineering, electronics and automotive, had a decisive impact on NA's positive business performance. Thus, for example, the German electrical engineering industry achieved turnover growth in terms of value of about 15% in the year 2000. For 2001 further turnover growth of 6% is expected. Only the construction industry was still stagnating at a low level.

NA's positioning and strategic orientation within the copper value-added chain had a direct impact on the annual profit. The mines, from which the copper concentrates are procured, profited from the increasing copper prices and were accordingly in a position to pay NA good treatment and

### Forecast for global copper demand in mill. t



Source: Brook Hunt, Dec. 2000

# Management Report

## Outline conditions and trends in the industry

refining charges (TC/RCs). The fabricating industry participated in the export boom and in this way generated an increasing demand for Norddeutsche Affinerie's products.

### The copper price rises...

In the business year 1999/2000, the rise in the copper price which started at the end of the last business year continued. The demand for copper increased, above all, in the second half of the business year. The reason for this development was the structural and economic recovery in most Asian economies, the stable economic situation in North America as well as the economic upturn in Western Europe. On this recovery route the copper price surpassed the 2,000 US\$ mark for a short time mid September. At the end of the business year 1999/2000 copper was traded on the

LME at 1,978 US\$/t (Settlement). By the end of the year 2000 the LME quotation had declined to 1,808.50 US\$/t. However, according to analysts' forecasts, the copper price will continue its upwards trend. The estimates for the year 2001 are in the range of 2,000 US\$/t and 2,200 US\$/t.

### ...while inventories decline

Until the beginning of March 2000, due to the existing excess of supply over demand, the copper stocks at the LME and COMEX exchanges first rose to 930,000 tonnes. On account of the rising global economy, the demand for copper and copper products increased faster than mine output. This resulted in a rapid decline in stocks. From March onwards they dropped on average per market day by 3,250 tonnes and by the end of the business year had been halved to about 459,000 tonnes. The decline in stocks continued at a slower rate until they had reached a level of 416,000 tonnes at the end of the year 2000.

Copper prices and LME stocks



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## Highlights of the business year in the NA Group

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### Highlights in the NA Group

For the NA Group the business year 1999/2000 was again very successful. The most significant projects included the integration of Hüttenwerke Kayser AG (HK), the merger of the agrochemical activities in SPIESS-URANIA Chemicals GmbH as well as the expansion of our East Smelter (Project RWO 2000). In addition, the NA Group's copper powder activities were spun off into MicroMet GmbH Pulvertechnologie.

The very good demand for NA's copper products, the integration of Hüttenwerke Kayser in the NA Group and increasing copper prices were decisive for the positive business trend in the year under review.

### Leading position enhanced

The NA Group has now taken up a leading position worldwide in the copper industry. When assessed by its production capacity of 550,000 tonnes of cathodes p.a., the Group is the largest integrated copper producer in Europe and is ranked at fourth position in the world. With an output of about 197,000 tonnes of continuous cast shapes, NA has managed to enhance its leading position in Europe still further. For continuous cast wire rod NA is still at third position in the European market with an output of 382,000 tonnes, but has been able to close the gap somewhat to the European market leaders.

### Product competence

The new plant for oxygen-free and low-alloyed copper qualities was successfully commissioned in September 2000. This is used to produce products for qualitatively high-grade applications in the telecommunications industry by means of optimised casting techniques.

### Capacity expansion

The raw material processing plants at NA and its subsidiaries were fully utilised throughout the year and sufficient supplies of raw materials assured at any time.

In the second half of September 2000, after a record running time of nine years, NA's core plant, the East Smelter (RWO), was put out of operation for extensive repair work and a capacity expansion. The measures were finished as scheduled at the beginning of November 2000 and the RWO started up again. As a result of this investment we are optimally prepared for the rising copper demand and the growth on the concentrate market. The expansion increases the RWO's throughput capacity by about 35 % to approx. 1 million tonnes of copper concentrates p.a.

# Management Report

## Highlights of the business year in the NA Group

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### Successful integration

With its concentration on the recycling of copper and copper's co-metals, Hüttenwerke Kayser ideally complements the activities of the NA Group. Consequently, NA's position in the secondary copper business and in the market for continuous cast wire rod could be significantly strengthened.

The integration of HK was progressed as a Group project and has meanwhile been successfully completed. HK has taken over responsibility for metal scrap procurement for the NA Group; the sales of copper products are carried out by NA. This concentration of the NA Group's core competence has heightened competitiveness and profitability. The secondary copper business will be further strengthened by the construction of a new smelter at HK which was started in spring 2000.

### Precious metal business complemented

In August 2000 NA reached an agreement with Degussa Metals Catalysts Cerdec AG (dmc<sup>2</sup>) whereby NA would take over its gold and silver parting business. The anti-trust authorities gave their approval in September 2000. The takeover was completed in October 2000. NA's precious metal business, which was hitherto limited to the recovery of gold and silver from copper concentrates and recycling materials, is

optimally complemented. Thus, NA has expanded the processing of precious metal bearing raw materials and can utilise its facilities in this sector even better. The collaboration with dmc<sup>2</sup> which was already intensified in the business year 1999/2000 and the increased input of anode slimes from outside sources resulted in a quantum jump both in quantity and value: the output of silver and gold rose by 30 % and 17 % respectively.

### Turnover and profit

Due to very strong unit sales, the consolidated turnover in the business year 1999/2000 could be increased by 67 % to 1.897 billion €. This was essentially attributable to the takeover of Hüttenwerke Kayser AG as well as the steady rise in product sales for copper and precious metals throughout the year and the increased copper price.

Compared with the previous year, the consolidated profit before taxes on income improved by 20 million €, i.e. 41 %. The profit of NA AG could be increased by 4 million € to 54 million €.



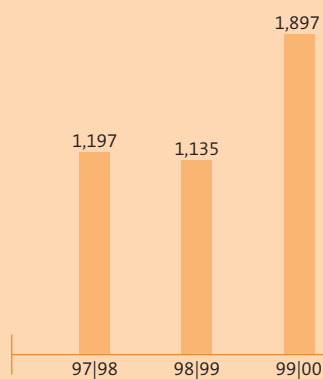
## Financial position

The structure of the NA Group's assets and capital is stable and balanced. It shows that there is potential for further internal and external growth to achieve a sustained increase in company value.

The integration of Hüttenwerke Kayser AG in the NA Group and the capacity expansion of the copper concentrate processing facilities at NA have been partly funded by the raising of loans. As a result the balance sheet ratio between equity and liabilities has changed. Nevertheless, the NA Group still has a very sound equity proportion of 38 % in comparison with other companies in the industry.

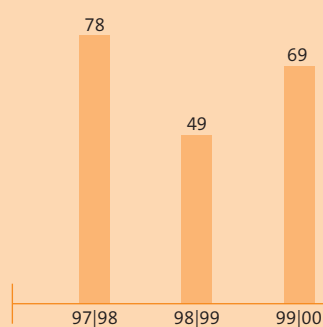
### Consolidated turnover

in mill. €



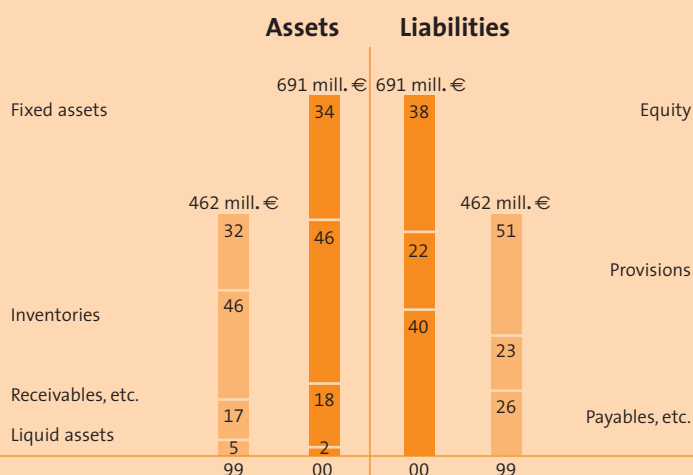
### Consolidated profit before taxes on income (EBT)

in mill. €



### Consolidated balance sheet structure

as at 30.9. in % of the balance sheet total



# Management Report

NA has repositioned itself by the acquisition of Hüttenwerke

Kayser and the expansion of its product business. The Group's

main Segments are

- METAL PRODUCTION and
- COPPER AND COPPER-RELATED PRODUCTS.

## Operating review in Segments

Segment 1 – Metal Production	
mill. €	99 00
Turnover	1,177
EBT*	36.5
EBIT	40.2
Capital expenditure	63.9
Depreciation	25.1
Number of employees (average)	2,220

\* Without minority interests

For the NA Group, the copper-containing raw materials and the copper products (cathodes, continuous cast wire rod and shapes) produced from them are the most important contributors to turnover and profit. Co-products from copper production such as precious metals, iron silicate stone and metallic and chemical special products make up the product spectrum.

## The NA Group is represented in major market Segments



## Segment 1 – Metal Production

The Metal Production Segment comprises NA AG's business units, which are active in this Segment, and connected subsidiaries. The Segment's value added is generally determined by treatment and refining charges (TC/RCs). These are payments received for transforming raw materials to marketable refined metals. For copper concentrates, the most important raw material, the TC/RCs are usually paid in US\$; in consequence, NA has a profit sensitivity as regards the US\$:€ exchange ratio. However, in the year under review this did not have an impact since we had hedged our anticipated US\$ income. The Segment contributed 36.5 million € to the consolidated profit before taxes on income and without minority interests. The average number of employees amounted to 2,220.

### • NA AG's Business Unit 1 "Copper Production and Recycling"

Within the framework of the Metal Production Segment, the NA Business Unit 1 "Copper Production and Recycling" produces copper cathodes as its main product. These are made of at least 99.99 % pure copper. The copper is won in an electrolysis process (copper tankhouse) in the form of copper plates, about 1 m x 1 m in size and with a thickness of 6 – 8 mm. NA's copper cathodes are registered at the leading metal exchanges in the world (LME and COMEX).

## Metal Production Segment

Copper cathodes are mainly produced from copper ores and recycling materials, such as copper scrap. The ores are already processed in the mines of their countries of origin to a concentrate, which contains on average about 30 % copper. Supplies are delivered from every continent, of which South America is the most important procurement market.

Copper scrap is generally bought in Western Europe and the CIS states. The material is pressed into packets at NA and melted largely with the energy available from the concentrate processing and subsequently refined to high-grade copper cathodes.

Sulphuric acid and iron silicate products are additionally recovered as co-products from the sulphur and iron contents in the concentrates. The precious metal content in the raw materials is further processed by the NA Business Unit 3 "Precious Metals".

### Positive business year

The business year again was very positive. The production of copper cathodes at almost 368,000 tonnes exceeded the previous year's figure (366,000 tonnes). Of this output the largest part was produced from copper concentrates with a quantity of 729,000 tonnes (previous year 737,000 tonnes), most of which were processed in the flash smelter furnace.

### Copper concentrates

The market for copper concentrates developed to our advantage. Whilst our TC/RCs from long-term supply agreements concluded earlier were still slightly reduced, we could buy additional spot quantities at significantly better terms than in the previous year. On the international spot market the TC/RCs have recovered from their historical previous year's low and have practically doubled. The – from our point of view – further improved US\$:€ exchange rate also had a positive impact on our results.

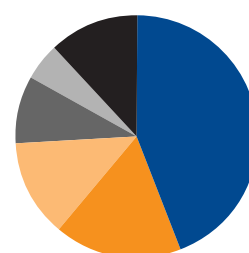
### Copper scrap

At about 140,000 tonnes, the input of copper scrap was at a very high level (previous year: about 114,000 tonnes). Due to this increased input of copper scrap, it was possible to maintain full production in the copper tankhouse at the end of the business year during the scheduled smelter standstill (Project RWO 2000).

Despite deliveries of copper scrap from Russia and the Ukraine being increasingly impaired by export duties and export restrictions, the refining charges for the material improved substantially compared with the previous year. An important reason for this was the increase in the copper prices.

### Concentrate supplies

in %



Chile	44 %
Portugal	17 %
Argentina	13 %
Papua New Guinea	9 %
Indonesia	5 %
Others	12 %

### NA BU 1 Production figures

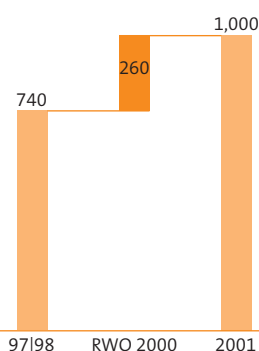
('000 t)	99 00	98 99
Input of concentrates	729	737
Input of copper scrap	140	114
Copper cathodes	368	366
Sulphuric acid	699	703
Iron silicate products	460	494

# Management Report

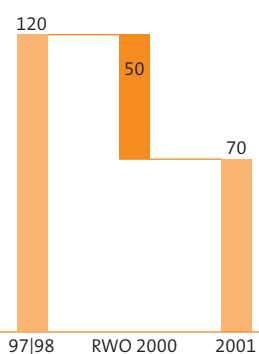
## Metal Production Segment

### Project RWO 2000

**Increase in concentrate throughput**  
in '000 t p.a.



**Reduction in input of copper scrap and blister**  
in '000 t p.a.



Our melting aggregate for intermediary products and various recycling materials could again be fully utilised. In addition, through technical optimisation, we have increased the possible quantities and the type of copper scrap which can be refined in our Contimelt plant.

### Quality improvement

With almost 700,000 tonnes our output of sulphuric acid was again at the previous year's level. The revenues from acid sales declined in the course of the business year, since the demand in Europe was noticeably reduced due to two fertiliser producers closing down their production plants. Nevertheless, since we commissioned an additional cleaning stage and thus improved our acid quality considerably, we were still able to increase the spread of our acid sales further, particularly in the chemical industry.

### Project RWO 2000 – extensive modernisation and expansion

In the business year 1999/2000 the expansion of the processing capacity for copper concentrates in the East Smelter (RWO) was one of NA's most important strategic measures. It was also the largest investment within the framework of Vision NA 2000. With this measure, we are expanding our core business in order to achieve a sustained significant improvement in results. The modernisation investment will already have an overall impact on profits in the business year 2000/2001.

With a capital expenditure volume of about 100 million €, the RWO's concentrate processing capacity was increased by more than 35 % to a throughput of approx. 1 million tonnes of copper concentrates p.a. At the same time 40 additional permanent workplaces were created at NA AG.

The Project RWO 2000 was completed whilst the flash smelter furnace and connected plants were being overhauled in November 2000. The scheduled overhaul was necessary in any case after a record running time of nine years and thus could be optimally used for the project.

### Cost position and productivity significantly improved

As a result of the project, the processing costs for copper concentrates will be cut and productivity substantially enhanced. Consequently, NA will considerably improve its position in international competition. The time was right because the offer of copper concentrates on the world market will increase in the medium term. For example, in the year 2001 a new large copper mine in Peru will be put into operation. We have therefore already concluded a comprehensive long-term supply agreement with this mine.

A further advantage of the project is that NA AG will in future only need to buy considerably reduced quantities of raw materials on the volatile markets for copper scrap and blister copper. This decrease in our own demand will greatly improve the

procurement possibilities of our subsidiary Hüttenwerke Kayser: HK is specialised in the treatment of these materials.

Since the specific emissions from the concentrate processing will be further reduced by the modernisation, further progress in environmental protection has, in parallel, been achieved due to the project. Thus, here as well, we are continually enhancing our worldwide leading position.

#### Plants optimised

In the course of the business year a number of major plants belonging to the project were installed. These included the installation of a new dryer and the replacement of the three converters by new larger units. In addition, a new crane was commissioned in the converter hall as well as an automatic device for charging copper scrap into the converters. In the acid plants the enlarged facility for the treatment of waste water was also commissioned in advance. All the other individual projects were prepared on schedule and were ready for operation when they were installed during the standstill for repair work in the RWO and acid plants.

This modernisation marathon aroused lively interest in the media. During the standstill the plant was the largest construction site in Hamburg employing up to 1,000 craftsmen each day at the same time.

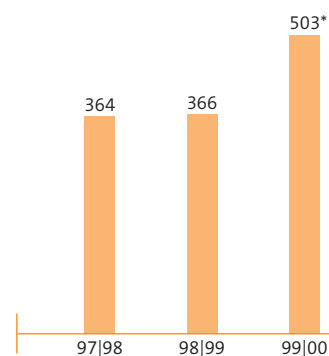
#### Always able to meet delivery commitments despite construction work

During the overhaul, the output of copper cathodes in the copper tankhouse was assured by the increased utilisation of the Contimelt plant and the stocks of anodes accumulated beforehand. As a result, the processing facilities for copper products could be fully utilised and NA was always able to fulfil its delivery obligations. The stock levels have normalised again since the work was finished in November 2000.

#### Supplies assured

Our supply of copper concentrates is to a great extent already covered for the current business year due to the supply agreements concluded. We are therefore again expecting our copper tankhouse to be fully utilised. Sales of the additional sulphuric acid output arising due to the higher concentrate throughput are assured. About two thirds of the new total output corresponds qualitatively to the high-grade sulphuric acid produced from brimstone. In the copper scrap sector, we are expecting further positive impacts from our joint procurement activities with Hüttenwerke Kayser.

**Cathode output**  
in '000 t



\* Including HK since 1.1.2000

# Management Report

## Metal Production Segment

### • Hüttenwerke Kayser AG (HK), Lünen

Hüttenwerke Kayser AG is the largest recycling enterprise worldwide for copper-containing secondary raw materials, such as copper scrap. On 30 September 2000 HK had a total of 684 employees including apprentices.

#### Stronger together

With its integration in the NA Group as of 1 January 2000, HK's earnings have followed a very positive trend. Apart from the favourable conditions on the copper and recycling markets, this is attributable to the results of a post merger management project involving the entire Group. A clear division of work in the Group was agreed between NA AG and HK AG in order to exhaust all the available synergies and earning potential. The NA Group's market performance could be significantly optimised: the coordination of Group activities on the secondary raw material markets is now being carried out by HK. In product sales NA has taken over the marketing of the copper products from both companies.

Since, for decades, HK has specialised in the recycling of metals, it has acquired outstanding expertise in copper recycling. Hüttenwerke Kayser is therefore an essential link in the environmentally beneficial cycle of copper as the material of the future, and in this way strengthens the NA Group in the recycling and secondary copper business.

### In combination with HK – European market leader

In all, approx. 250,000 tonnes p.a. of secondary raw materials are treated at HK, which are used to produce approx. 180,000 tonnes of high-grade copper cathodes. As a result, the NA Group has a total copper tankhouse capacity of 550,000 tonnes p.a. and is the European market leader. The integration of Hüttenwerke Kayser has also significantly strengthened the position of the NA Group in the German and European copper markets. Since HK's consolidation on 1 January 2000 about 135,000 tonnes of the NA Group's cathode output, which totals approx. 503,000 tonnes, has been produced by HK. Hüttenwerke Kayser is also expecting the copper market to develop well with positive impacts on the metal scrap and copper recycling markets in the next few years.

#### Investment in the future

The copper refining plant at HK, including the copper tankhouse, is modern; in contrast, the melting operations must be made more efficient. Consequently, in June 2000 work was started on the construction of a new ISA Smelter. This investment requires capital expenditure of about 36 million € and will be commissioned in spring 2002.

#### HK's production figures

('000 t)	Jan. until Sept. 2000
Input of copper-containing secondary copper	183
Copper cathodes	135

- **CABLO Metall-Recycling & Handel GmbH (CABLO), Hamburg**

CABLO, as Germany's largest cable recycling enterprise, together with Hüttenwerke Kayser AG covers a significant part of the NA Group's recycling activities.

CABLO's processes are particularly environmentally friendly, since the cable is always dismantled mechanically. With workshops in Fehrbellin in Brandenburg and Strass/Nersingen in Bavaria, the company has two modern production locations. Copper in the form of metal granules is primarily recovered from cable scrap from telecommunications and power supplies as well as production scrap arising during cable manufacture. These granules are sold to NA AG, to MicroMet GmbH Pulvertechnologie or to other customers outside the NA Group.

In the business year 1999/2000 a total of about 21,000 tonnes of cable was dismantled, from which approx. 10,000 tonnes of metal granules were recovered.

On 30 September 2000 CABLO had 69 employees.

- **NA AG's Business Unit 3 "Precious Metals"**

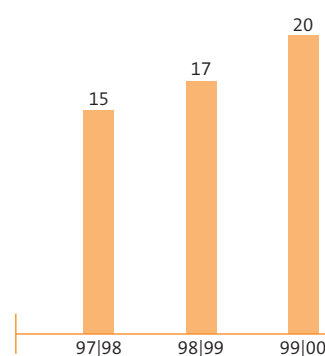
NA's Business Unit "Precious Metals" (NA BU 3) ideally complements the production of copper from copper concentrates and recycling materials, because it safeguards the optimal recovery of the precious metals contained in the raw materials. This is one of NA's particular strengths compared with its competitors who generally have to sell their precious metal-containing intermediary products to third parties.

The precious metal containing intermediary products of NA and Hüttenwerke Kayser – supplemented by precious metal-containing bought materials – are processed in NA BU 3 to saleable gold, silver and platinum group metal products. The processes have been optimised in the last three years by inter alia the installation of a top blown rotary converter.

#### **Expansion of the gold and silver parting business**

After a close cooperation had been built up over some years, NA reached an agreement with Degussa Metals Catalysts Cerdec AG (dmc<sup>2</sup>) in August 2000 to take over the latter's gold and silver parting business. In so doing, we have the possibility of substantially enhancing our raw material supplies on the precious metal side and hence of improving the utilisation of our plants still further.

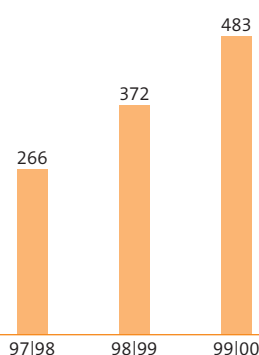
**Gold output**  
in t



# Management Report

## Metal Production Segment

Silver output  
in t



Precious metal production could be significantly increased. A gold output of 20 tonnes was achieved, thus 3 tonnes more than that in the previous year. Silver output increased by 111 to 483 tonnes (previous year 372 tonnes).

- **RETORTE Ulrich Scharrer GmbH (RETORTE), Röthenbach**

The anode slimes from the copper tank-house are the most important precious metal-containing intermediary product at NA and other copper smelters. Apart from precious metals, these contain selenium, a significant co-element. NA recovers this selenium in the form of crude selenium and sells it to its subsidiary RETORTE. From this crude selenium, the company produces high-grade selenium chemicals for the glass industry for staining and decolouring glass, for the animal fodder industry as a trace element and for many other applications, such as the electrooptical, pharmaceutical and galvanic industries. On 30 September 2000 the company had 28 employees.

- **PEUTE BAUSTOFF GmbH (PBG), Hamburg**

Iron silicate products in the form of stone and granules are produced from the iron silicate arising during copper production from concentrates and recycling materials. They are sold via PEUTE BAUSTOFF GmbH as construction stone for levees, canals, river embankments and sea shores or as granules for abrasives.

The production of iron silicate products has grown continually over recent years as a result of the increased smelter throughput at NA and in the business year 1999/2000 amounted to approx. 460,000 tonnes. The output will increase again significantly as a result of the expansion of the processing capacity at NA. There were 11 persons employed on 30 September 2000.



## Copper and Copper-related Product Segment

### Segment 2 – Copper and Copper-related Products

The Copper and Copper-related Product Segment comprises the Business Unit “Copper Products” (NA BU 2) of NA AG as well as the NA Group subsidiaries belonging to this Segment.

Copper and Copper-related Products represent the second value-added stage of the NA Group and ideally complement the metal production sector. The Segment’s value-added is largely determined by the shape surcharge. This is the remuneration which the customer pays in addition to the copper price set by the metal exchange and covers the further processing of the cathode to, for instance, continuous cast wire rod or shapes.

The starting materials for our copper products are high-grade copper cathodes. The products are, in general, tailor-made for our customers and are subject to the highest quality requirements.

The Segment contributed 27.8 million € in 1999/2000 to the consolidated profit before taxes on income and without minority interests. The average total number of employees amounted to 934.

### • NA AG’s Business Unit 2 “Copper Products”

In the Business Unit “Copper Products” (NA BU 2) continuous cast copper wire rod and shapes are produced from copper cathodes by melting, alloying and reforming. These are the semi-finished products for the production of cable and wire, tubes, sheets, strip and foils. Our products’ high quality, which is based on the quality of our copper cathodes as well as on our special know how, enables our copper products to be used for demanding applications, in particular in the electrical engineering and electronics industries.

#### Modern plants

NA operates several plants for the production of these products including one for continuous cast wire rod with a throughput of 45 tonnes per hour and a multi-strand continuous casting plant for copper shapes.

In the Business Unit “Copper Products” there was a total of 297 employees on average over the business year. This figure includes 61 employees in NA AG’s analytical laboratories, which, as a service provider for the whole of NA, belong to NA BU 2.

### Segment 2 – Copper and Copper-related Products

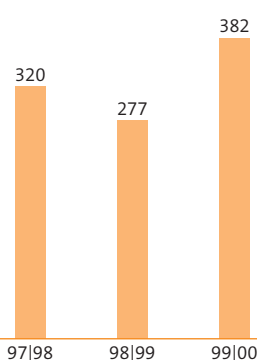
mill. €	99 00
Turnover	1,565
EBT*	27.8
EBIT	33.0
Capital expenditure	14.9
Depreciation	7.6
Number of employees (average)	934

\* Without minority interests

# Management Report

## Copper and Copper-related Product Segment

**Wire rod output**  
in '000 t



A plant comparable with the Hamburg wire rod plant is also operated at Deutsche Giessdraht (DG) in Emmerich. With the take-over of Hüttenwerke Kayser, the NA Group also acquired HK's 20 % indirect stake in DG and thus is meanwhile entitled to about 60 % of the wire rod produced there.

In Hamburg a TOP ROD plant was commissioned for the production of special products in July 1999 and a casting plant for oxygen-free and low alloyed copper in September 2000.

The essential factors for successful sales of our copper products are cost-effective production, the concentration on qualitatively high-grade copper materials and a customer-oriented technical and commercial service.

### Trend in business

Throughout the business year the output and sales of continuous cast wire rod and shapes were almost uninterruptedly at a very high level. Consequently, new records were achieved and the previous year's quantities exceeded by more than 36 %.

The economic climate in Europe and the strong US\$ in relation to the € favoured our successful intensified marketing.

### Continuous cast wire rod

In the rod plant, cathodes are transformed to continuous cast wire rod with a diameter of 8 to 20 mm. With this product, NA has captured a leading position in Europe as regards both costs and quality.

In the business year 1999/2000, a total of about 382,000 tonnes of wire rod was produced. Compared with the previous year this is an increase of approx. 38 %.

Since June 2000 NA has covered all the marketing of HK's share of Deutsche Giessdraht's production.

### Position enhanced

Despite an intensive competitive climate, the NA Group could further strengthen its market position as the third largest European wire rod producer due to its high product quality and reliability. NA's market share in Europe amounts to approx. 14 %. The economic climate in Germany and Western Europe was significant for this development, since it benefited the strong demand from the cable and wire industries for NA products. These branches also profited from the strong US\$ and could substantially increase their exports to the USA and the Far East.

During its first production year, our new special product, TOP ROD, has already been increasingly well accepted in the galvanic industry and profile fabrication. We have meanwhile additionally commenced the development of high-grade alloys in various diameters for the electrical engineering industry in collaboration with our customers.

### Continuous cast shapes

Cakes and billets with piece weights of up to 25 tonnes are produced from copper cathodes in the continuous casting plant. NA has conquered a very strong market position, especially for copper products with high conductivity for the electrical engineering and electronics industries. In all, 197,000 tonnes of continuous cast shapes were produced, an increase of more than 30 % compared with the previous year.

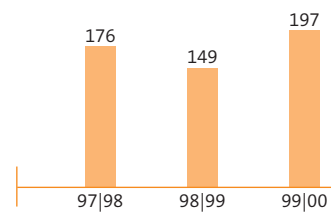
We have thus enhanced our leading position in Europe with a market share of more than 38 %. During springtime, the positive economic trend favoured an extremely high demand for continuous cast products, which then stabilised at a high level. The main customers were the electrical engineering and electronics industries as well as the telecommunications branch. In particular, the rapid expansion of mobile phone networks and the large submarine cable projects for the transfer of energy and information had a decisive impact on sales of our continuous cast shapes.

### OF plant – Know how and product competence

The new plant for the production of oxygen-free (OF) copper and special alloys was successfully commissioned in September 2000. The already strongly increasing orders for OF copper are essentially due to the rapid growth in the telecommunications industry. Shielded cable is used for this branch's innovative technological applications. OF copper is used to a great degree to provide the shield since it guarantees the highest conductivity.

The possibility of producing OF copper in shapes with piece weights of 25 tonnes has made NA the benchmark – not just in Europe.

**Continuous cast shape output**  
in '000 t



# Management Report

## Copper and Copper-related Product Segment

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- **Deutsche Giessdraht GmbH ( DG),  
Emmerich**

DG was founded in 1975 by the Chilean copper producer Codelco (40%), Hüttenwerke Kayser AG (20%) and NA (40%). Since 30 December 1999 the NA Group including HK holds a direct stake of 60 % in the company via the Gesellschaft für Metallanlagen mbH. With the greater integration of DG the NA Group has further enhanced its position in the European wire rod market. DG produces continuous cast wire rod with diameters of 8 to 16 mm. In the business year 1999/2000 a quantity totalling about 236,000 tonnes was achieved. On 30 September 2000 the company had 119 employees.

- **MicroMet GmbH Pulvertechnologie  
(MicroMet), Hamburg**

MicroMet was established when NA's former metal powder sector was spun off and since then it concentrates exclusively on the production and marketing of future-oriented – primarily copper-based – metal powders. In the business year 1999/2000 a total of more than 5,000 tonnes of powder was produced and sold. The company had 70 employees on 30 September 2000.

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- **SPIESS-URANIA Chemicals GmbH, Hamburg**

SPIESS-URANIA Chemicals GmbH has a special position in the Copper and Copper-related Product sector. A direct industrial connection with NA AG has arisen through copper chemicals which make up roughly a 20 % share of the turnover of SPIESS-URANIA Chemicals GmbH and are produced in NA's works. Since 1 October 1999 the NA Group's copper chemical activities have been integrated in the company as part of restructuring measures. As a consequence, the business was expanded to include industrial applications for copper-based chemical products.

SPIESS-URANIA Chemicals GmbH was formed on 1 October 1999 as a result of the backdated merger of C.F. SPIESS GmbH & Co. with URANIA Chemicals GmbH. NA holds a 60 % stake in the new company. As a result of the tactical merger in May 2000 a project is being processed in order to use any merger-related optimisation possibilities.

#### **Strengthened by the merger**

The formerly independent SPIESS and URANIA have for decades been specialised in the development, production and distribution of agrochemicals and were active in different regions. For many years they have worked closely together. The merger was thus a significant strategic step to strengthen the position on the German agrochemical market and has meanwhile resulted in the company's being ranked "no. 5" on the market. In addition to enhancing the market position, the merger offered synergies in product registration, distribution rights, research and development as well as administration.

SPIESS-URANIA is active in the production and export worldwide of copper-bearing chemicals for industrial and agricultural applications. In addition, it offers services, such as vegetation control on railway tracks.

The merged company owns workshops in Kleinkarlbach (Rhineland-Palatinate), modern research centres in Christinenthal (Schleswig-Holstein) and Kluftern (Baden-Württemberg) as well as a production plant in Ochsenfurt (Bavaria). On 30 September 2000 it had 233 employees.

# Management Report

## Service sectors

The NA service sectors are central know how providers and make a significant contribution to the Group's earnings.

Continuous process optimisation in all sectors, the development of new products and a highly efficient staff strengthen our leading position.

### **“Technical Services and Materials Procurement” sector**

The “Technical Services and Materials Procurement” sector is responsible for ensuring continued production and process optimisation. As a service provider it therefore supports the business units in NA AG and increasingly as well the subsidiaries in the NA Group. It makes a significant contribution to the consolidated earnings by running value-retaining maintenance programmes and making improvements to the logistical processes in the works area. NA has taken up an internationally leading position with this service unit as regards equipment availability. Apart from the central workshops of the electrical engineering, instrumentation and control technics, this unit includes transport and material procurement, the design and construction department as well as the power supplies.

The procurement management combines the know how of the technicians and commercial staff in project groups. Regular exchanges of information enable market opportunities to be used to ensure procurement of the supplies and services for the whole NA Group at the best possible conditions.

### **Reduced energy costs**

The sector “Technical Services and Materials Procurement” has specialised in power supplies. Apart from personnel expenses, energy costs are a significant cost factor for NA. Intensive negotiations with the power-producing industry have, however, resulted in reduced electricity prices.

The preparations for the modernisation of the East Smelter (RWO), which began in September 2000, were a main theme during the entire business year. Thanks to painstakingly precise planning it was possible to keep to the schedule and budget.

The millennium did not cause NA any problems. The company's own power plant was in operation in order to provide an emergency supply in the event of a power cut.

### **Service provider for the Group**

The target of the service unit in future will remain the continuous reduction of its costs and the strengthening of its function as a service provider for the whole NA Group. Important projects are the strategic reorganisation of the concentrate deliveries from the vessel to the works in Hamburg

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and the expansion of the energy management for the entire Group. With all measures taken, the increased use of synergies with NA's large subsidiaries, Hüttenwerke Kayser and Deutsche Giessdraht, is being given priority .

### **Research and development**

Our R & D Department works closely with NA's production plants in order to continually improve existing processes and products. In addition, new products are also developed. Initially they are conceived on a laboratory scale and from there, after being positively assessed, they are developed to production scale. Apart from the R & D Department the specialists from production, technology and marketing participate in this innovation process.

The R & D projects in process optimisation had the priority tasks of process monitoring and control. The joint target of these activities was the direct monitoring and control of different metallurgical processes at a high temperature and in the molten metal flow by means of modern technology and special sensors. Compared with conventional methods, numerous advantages result as regards increased production efficiency and production quality as well as an improved process cycle.

### **Innovative products**

We have also worked out concepts for new products with our subsidiaries SPIESS-URANIA Chemicals and MicroMet. An example: a specially developed copper salt – the so-called basic copper nitrate – will take over an elementary function in the newest generation of airbags.

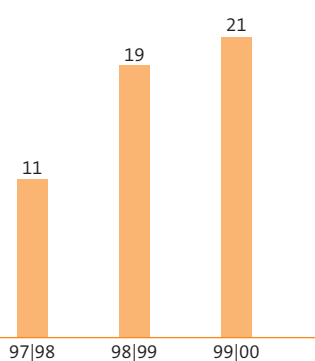
### **Successful pilot plant**

NA's most future-oriented R & D projects include the direct casting of copper strip from cathodes in one heat. This thin strip casting could in future complement the current production of sheet and strip from cast shapes. Today, initially about 150–200 mm thick cakes are produced by means of the continuous casting process and then rolled in several steps. The new process in contrast should save the first rolling steps and the surface milling. A directly cast 3–6 mm thick copper strip results in significant cost savings at the customer's plant in the production of thin strip and sheets. The overall positive results in the pilot plant show that, with our technology, a new more cost-effective process for the production of copper flat products is possible.

# Management Report

## Service sectors

**Capital expenditure in environmental protection**  
in mill. €



### Copper-based solar cells

Another main theme is the participation in the development of copper-based solar cells, which are expected to have significantly lower production costs. The cells based on the elements copper, indium and selenium (Cu, In, Se = CIS) are coated electrochemically on a flexible copper strip and are thus extremely light as well as almost unbreakable.

NA AG's direct capital expenditure in research and development in the business year 1999/2000 amounted to about 4 million €. In the next few years, including the expenditure for the casting of copper strip project and the further development of the CIS technology it is expected to rise to an average of about 6 million € p.a.

### Environment and energy

As a modern copper producer, the care of resources in the sense of sustainable development and the minimisation of environmental impacts are amongst our most important company targets. In this, we have today taken up a leading position in all aspects of environmental protection: we are amongst the leaders worldwide as regards air pollution control, the prevention of water pollution and the avoidance of waste. On average over many years, 30 % of capital expenditure has been directed into environmental protection. In the business year 1999/2000 NA invested about 21 million € in this sector. A significant part was directed into the Project RWO 2000. The constant improvement of the environmental standards is one of the targets of the greatly enlarged NA Group. Thus, some important steps have already been implemented to introduce further environmentally friendly and, at the same time, more cost-effective processes at Hüttenwerke Kayser AG.

### High environmental standards

By the use of new technologies which are more energy-efficient and produce less off-gas, NA's excellent environmental position is being constantly optimised. As a result, the modernisation of the East Works (RWO) includes a series of measures to protect the environment, which are particularly



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oriented to cut fugitive emissions. The target of this capital investment is to improve the ambient air quality in NA's immediate vicinity despite the capacity expansion. Together with the environmental authorities we are taking regular measurements to discover further possibilities for optimisation.

In the last business year, extensive licensing procedures were successfully completed to obtain construction and operation permits. These were inter alia the prerequisites for the expansion of the East Smelter (Project RWO 2000) and the construction of the continuous casting plant for oxygen-free copper (OF plant).

In addition, all NA plants were examined in accordance with the new Hamburg legislation on plants which handle water pollutants (VAWS). This concerns inter alia sulphuric acid and copper electrolyte. As part of these measures, we also compiled a new plant cadastre.

Besides instruction within the framework of the inhouse training courses, we have carried out practice-related seminars on environmental protection with 100 RWO employees. These seminars resulted in a number of proposals which will be implemented in future to improve environmental protection even further.

The preparations for the certification of an environment management system on the basis of the ISO guidelines 14000 and the EU eco-audit legislation will soon be completed. The certification should take place in the first half of the year 2001. In this way we wish to make our environmental protection activities even more transparent than at present.

NA has oriented its actions to the efficient utilisation of energy. Our energy-saving project eNergiA has already resulted in noticeable success. Up to now, the project teams have processed suggestions with a savings potential of about 10 %. These concepts are the result of technical improvements which can be realised at short notice. We shall reduce energy consumption at the Hamburg location by 20 %. This will achieve a significantly under-proportional trend in the energy costs compared with the production increase.

As a leading company in environmental protection, NA advocates high environmental standards all along the value-added chain of copper. This also includes copper ore mining. NA is therefore supporting improvements at the Ok Tedi copper mine in Papua New Guinea taking into account the social, ecological and economic aspects.

# Management Report

## Human resources

Motivated and performance-oriented employees, who are committed to NA and its targets, are the most important success factor for the profitability of our Company.

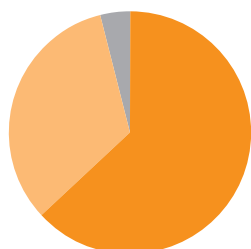
### Trend in personnel in the NA Group

Number (annual average)	99 00	98 99
NA	1,973	2,015
HK	674	
SPIESS-URANIA Chemicals*	242	99
Deutsche Giessdraht	119	
CABLO	67	64
MicroMet	67	
PEUTE BAUSTOFF	12	12
Total	3,154	2,190

\*Until 30.9.1999 URANIA

### Employees' structure in the NA Group

Number (average) over the business year 1999/2000 (in %)



- Apprentices 4%
- Salaried 33%
- Hourly-paid 63%

One of the Personnel Department's main tasks is to ensure the recruitment of a qualified and dedicated staff in all sectors of the Company. This includes giving staff the opportunity for advancement and the reconciliation of interests between the Company and its staff.

### Targeted remuneration system

An extensive offer of further training measures and a performance-oriented and success-related remuneration system characterise NA as a modern employer: our employees' income will in future be composed of three variable elements in addition to a fixed amount. These elements will depend on personal performance, the team's success and the Company's performance.

### Number of employees

The number of employees in the NA Group – including apprentices – has increased on an annual average by 964 employees to 3,154. This rise results from the inclusion for the first time of SPIESS-URANIA Chemicals GmbH, Deutsche Giessdraht (since 1 October 1999) as well as Hüttenwerke Kayser (since 1 January 2000). On 30 September 2000 there were 3,223 employees

(previous year 2,206) in the Group – including apprentices. The employees' structure has not changed as a result of the consolidation. The Group consists to about 1/3 of salaried employees and to almost 2/3 of wage earners.

NA AG has the largest number of employees in the Group. The number has dropped on an annual average by 42, from 2,015 to 1,973. The decline resulted from the spin-off of the Copper Salt and Metal Powder Sectors. In the course of the business year, however, it was made up again by new hirings due to increases in production and turnover. At the end of the business year the workforce consisted of 2,037 employees (previous year 2,035).

### A high level of further education and training

Staff training and advancement are essential functions of ours and awarded the highest priority. We shall likewise extend this strategy to the meanwhile significantly enlarged NA Group.

NA AG has increased its training capacity as of 1 September 2000 by more than 20 % and with an apprentice and trainee share of 6.2 % is the largest training company in Hamburg's chemical industry. With this increase we are documenting the responsibility we feel for young people and are, at the same time, safeguarding the future of our Company.

Priority is also given to the further training of our employees: in the business year 1,603 employees (81%) of NA AG attended special training courses; an increase of 20 % in comparison with the previous year.

#### Company suggestion scheme effectively used

Within the framework of the suggestion scheme of NA AG, our employees submitted 592 suggestions for improvements and, in so doing, used their creativity and experience in the interests of increasing efficiency further. The 83 suggestions referring to the eNergiA project should be specially mentioned here since they have resulted in further reductions in energy consumption.

#### Stock option plan for senior staff

Again almost all the senior staff subscribed to the third tranche of the performance-oriented stock option plan issued in spring 2000. This is further evidence of the confidence the senior staff have in the Company's success.

#### Occupational safety at an exemplary level

In the NA Group great priority is given to constantly improving occupational safety. As a result it was possible to reduce again substantially the accident frequency at NA AG in the last business year. The proportion of notifiable accidents has significantly been reduced by 20 % to 13 per 1 million hours worked and is thus better than the average in the industry. This success is attributable particularly to increased aware-

ness of occupational safety amongst all employees and senior staff as well as to the established health discussion groups.

#### Collective agreement 2000

In spring 2000 the collective bargaining for the chemical industry resulted in an extensive package effective for a longer period than usual. The two-stage tariff increase, which in the first stage includes an increase of 2.2 % as of 1 July 2000 and in the second stage an increase of 2 % as of 1 July 2001, has a lifetime until the end of March 2002. Thus, the collective agreement has created a reliable basis extending beyond the current business year as regards budgeting personnel expenses.

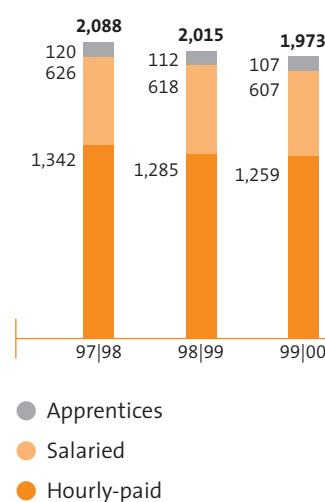
#### Early retirement scheme

On average 103 employees at NA AG, aged 55 and over, took advantage of that part of the collective agreement for the chemical industry which permits early retirement of up to 2 ½ years whilst receiving 85 % of the former gross remuneration after working full-time for this reduced remuneration for the same number of years. The number in the NA Group amounted to 157 employees.

#### Thanks to the staff

Our thanks go to all our staff for their enormous dedication and outstanding commitment. They have made a decisive contribution to the Group's success in the business year. Particular thanks go to those who were included due to the growth of the NA Group and have supported the integration process.

**Number (average) of employees in NA AG**



# Management Report

## Risk management

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In 1998 NA had already set up a project group with the aim of ensuring integrated risk management.

In view of the legislation on controlling and transparency in the corporate sector (KonTraG), Norddeutsche Affinerie has analysed in detail the existing early warning systems for risk management and combined them in a closed risk management system. These measures are documented in a manual which is available for inspection.

We differentiate between risks which can impair the achievement of operative and strategic corporate targets, as well as between additional risks which are of particular importance for the NA Group. The risks are evaluated qualitatively and – if possible – quantitatively as regards their impact on NA.

### Group planning process

Comprehensive risk principles and guidelines govern the risk management and its organisational integration in the NA Group's corporate processes. Considerable parts of the entrepreneurial actions are carried out by subsidiaries and NA's business units on their own responsibility. They are therefore individually responsible for risk management. The operative business units are supported, coordinated and controlled throughout the company by the administrative and service departments.

The risk management refers to all corporate sectors and is part of the Group planning process. This includes the sales and production plan as well as the personnel, investment and finance plan. The plans covering several years are updated each year; the plan is monitored monthly. The implementation of the strategic plan is examined each year and, if necessary, adjusted to any changing company targets.

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### **Limitation of risks**

In the copper and precious metal sectors, NA, as an internationally active company, is confronted with the additional risks of metal trading and foreign exchange dealings apart from the customary business risks. To limit these risks, there are separate guidelines to prevent, limit and ward off negative impacts on the company from these sectors in addition to the supply agreements, which are spread worldwide and have staggered delivery times.

Hedging activities are carried out, which balance each of NA's transactions with countertrade, in order to minimise the impacts metal price and currency rate changes will have on results. These are performed by balancing possibly open trading positions each day.

The organisational implementation and observance of these directives is ensured by a hierarchically graded system of management circles with the inclusion of the Executive Board. The management circles meet regularly and by means of dif-

ferent information sources observe market developments and NA's position. The integration of risk management in the corporate processes is ensured by the attendance of the responsible employees from the respective departments.

The management circle participants come from different hierarchy levels so that information is given directly and decisions put into action.

### **Prerequisites fulfilled**

The risk management system was developed in collaboration with the responsible employees. It is constantly updated and adjusted to the changing conditions in the company. In compliance with the statutory directives, our risk management system came for the first time under the scrutiny of the auditors in the year under review. They determined that the Executive Board had taken the steps required under Section 91 § 2 Commercial Code in a suitable manner and that the monitoring system fulfilled the prerequisites for this.

# Management Report

## Outlook

At the beginning of the new century NA is very well positioned for the future: significant capital expenditure has been or is being directed into internal and external growth and a clear growth strategy has been defined for the future.

For the current business year 2000/2001 we expect a sustained stable economic climate. The member states of the European Union can reckon with an increase in industrial production of 2.9 %. According to the EU Commission, even with high oil prices and possibly a continued weak Euro, economic growth in the EU will remain at about 3 % in the next few years.

### **Rising overall demand**

Due to the – in our experience – close correlation of the general economic growth with the growth on the copper markets, we are expecting very positive trends as well for our copper-related markets. This estimate is supported by forecasts given by independent experts, who are assuming a significantly rising trend lasting several years in view of the copper prices and

quantities to be expected. Strong stimulus for overall demand can accordingly be expected in the next few years, not only from the economies in Asia, but also from the established markets in Europe and NAFTA.

The utilisation of our expanded smelter capacities is almost completely assured by long-term supply agreements for copper concentrates. We are expecting the level of the treatment and refining charges (TC/RCs) contracted in US\$ to be stable compared with 1999/2000.

The resulting US\$ revenues for the current business year have almost all been rate-hedged.

On the assumption that the good economic development within our customer industries and their countries will be sustained, we are expecting continuing high production and sales figures for continuous cast wire rod and shapes.

Our strong position in the sector of oxygen-free copper materials will ensure an even larger share of the telecommunications growth market.

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## Reliable partner

Due to the increasing demand for copper, in particular in the electrical engineering and electronics industries, our products will participate overproportionally in the general growth. NA's clear strategy of continued investment in the material copper, also in future, makes the company a reliable long-term partner for the European wire and cable industry as well as for semis fabricators.

Our optimism is based on our assumption that our main raw material suppliers – the copper mines – will produce more material for the globally rising demand and will be dependent on smelter capacities, such as those at NA.

## Utilise opportunities – minimise risks

We shall use the positive trend on the copper market emphatically to continue our company strategy of growth and increased profitability.

Possible risks on the cost side could result from continued excessive crude oil prices and tougher pressure from inflation.

As in the past, we shall react determinedly to combat all cost burdens effectively with greater efficiency and tighter cost management.

For the business year 2000/2001 we are assuming a further increase in profits, both for NA AG and for the Group.

With its position in the centre of the value added chain for copper, NA has the best prerequisites for proactively absorbing the positive stimulus of its neighbouring links in the chain, i.e. the mines and NA's product users, and to utilise this to increase its company value.





# Financial Statements

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# Consolidated balance sheet

as at 30 September 2000

Assets '000€	Note no.	1999/2000	1998/1999
<b>Fixed assets</b>	<b>1</b>		
Intangible assets		10,918	1,920
Property, plant and equipment		217,887	133,854
Financial assets			
Shares in affiliated companies		360	478
Investments in associated companies		5,722	8,819
Other investments		916	152
Long-term securities		609	618
Other loans		786	13
		8,393	10,080
		<b>237,198</b>	<b>145,854</b>
<b>Current assets</b>			
Inventories	<b>2</b>	317,389	212,208
Receivables and other assets	<b>3</b>		
Accounts receivable, trade		112,050	69,037
Receivables from affiliates		4,895	641
Receivables from other group companies		1,020	3,179
Other assets		7,243	4,269
		125,208	77,126
Short-term securities	<b>4</b>	1,536	1,954
Liquid assets	<b>5</b>	9,764	24,565
		<b>453,897</b>	<b>315,853</b>
<b>Deferred items</b>		<b>261</b>	<b>27</b>
<b>Total assets</b>		<b>691,356</b>	<b>461,734</b>

<b>Equity and liabilities</b>	'000€	Note no.	1999/2000	1998/1999
<b>Equity</b>		<b>6</b>		
Subscribed capital			81,920	81,807
<i>Contingent capital 39,915 thousand €</i>				
Capital reserves			23,955	21,934
Revenue reserves			117,145	107,157
Retained earnings			27,278	21,895
			<b>250,298</b>	<b>232,793</b>
<b>Minority interests</b>			<b>9,912</b>	<b>851</b>
<b>Special reserves with an equity portion</b>		<b>7</b>	<b>5,706</b>	<b>3,348</b>
<b>Provisions</b>		<b>8</b>		
Provisions for pensions			52,494	30,550
Other provisions			100,186	78,934
			<b>152,680</b>	<b>109,484</b>
<b>Liabilities</b>		<b>9</b>		
Convertible loans			2,781	1,869
Bank loans and overdraft			79,931	4,914
Trade accounts payable			127,676	71,277
Payable to affiliates			298	833
Other liabilities			62,069	36,361
			<b>272,755</b>	<b>115,254</b>
<b>Deferred items</b>			<b>5</b>	<b>4</b>
<b>Total equity and liabilities</b>			<b>691,356</b>	<b>461,734</b>

# Changes in Group fixed assets

for the period 1 October 1999 to 30 September 2000

		Cost of acquisition or construction		
'000€	1.10.1999	Additions from first consolidation	Additions in the current year	Disposals
<b>Intangible assets</b>				
Franchises, trademarks, patents, licenses and similar rights and licenses to such rights	8,149	3,554	820	628
Goodwill	517	5,419	-	-
Advances paid on intangible assets	596	33	2,284	-
	<b>9,262</b>	<b>9,006</b>	<b>3,104</b>	<b>628</b>
<b>Tangible assets</b>				
Land and buildings	227,605	37,030	6,000	911
Technical equipment and machinery	457,169	129,183	25,586	8,048
Other equipment, factory and office equipment	52,022	17,048	4,470	7,879
Payments on account and assets under construction	46,305	1,263	38,852	-
	<b>783,101</b>	<b>184,524</b>	<b>74,908</b>	<b>16,838</b>
<b>Financial assets</b>				
Shares in affiliated companies	478	4	134	256
Investments in associated companies	10,584	819	518	4,899
Other investments	214	353	544	-
Loans to companies in which participations are held	-	1,250	-	625
Long-term securities	622	-	-	-
Other loans	13	797	76	94
	<b>11,911</b>	<b>3,223</b>	<b>1,272</b>	<b>5,874</b>
<b>Total fixed assets</b>	<b>804,274</b>	<b>196,753</b>	<b>79,284</b>	<b>23,340</b>

Transfers	Write-ups 30.9.2000	Net book value		Depreciation and write-downs in current fiscal year
		30.9.2000	30.9.1999	
517	9,018	3,394	1,057	920
-	815	5,121	267	565
- 510	-	2,403	596	-
<b>7</b>	<b>9,833</b>	<b>10,918</b>	<b>1,920</b>	<b>1,485</b>
2,090	231,815	39,999	23,218	4,069
9,188	519,342	93,736	55,845	22,893
258	56,644	9,275	8,486	4,400
- 11,543	-	74,877	46,305	-
<b>- 7</b>	<b>807,801</b>	<b>217,887</b>	<b>133,854</b>	<b>31,362</b>
-	-	360	478	-
-	1,300	5,722	8,819	132
-	195	916	152	-
-	625	-	-	625
-	13	609	618	9
-	6	786	13	-
<b>-</b>	<b>2,139</b>	<b>8,393</b>	<b>10,080</b>	<b>766</b>
<b>0</b>	<b>819,773</b>	<b>237,198</b>	<b>145,854</b>	<b>33,613</b>

# Consolidated profit and loss account

for the period 1 October 1999 to 30 September 2000

'000€	Note no.	1999/2000	1998/1999
<b>Turnover</b>	<b>12</b>	<b>1,896,661</b>	<b>1,135,432</b>
Variations in inventories of finished goods and work in process		42,876	– 15,674
Own work capitalised		5,797	4,066
Other operating income	13	22,681	17,362
Cost of raw materials and supplies	14	– 1,625,841	– 912,617
Personnel expenses	15	– 149,678	– 109,731
Depreciation on fixed assets	16	– 32,847	– 23,172
Other operating expenses	17	– 85,809	– 49,689
Income from investments	18	471	2,604
Net interest	19	– 4,867	747
<b>Result of ordinary activities</b>		<b>69,444</b>	<b>49,328</b>
Taxes on income	20	– 28,677	– 25,390
<b>Profit for the financial year</b>		<b>40,767</b>	<b>23,938</b>
Profits/losses attributable to minority interests		– 2,229	2
Allocations to revenue reserves		– 11,260	– 2,045
<b>Unappropriated profit</b>		<b>27,278</b>	<b>21,895</b>

# Consolidated cash flow statement

'000€	1999/2000	1998/1999
Profit for the financial year	40,767	23,938
Depreciation on fixed assets	32,979	23,468
Changes in long-term provisions	7,268	2,795
Other expenses and income not affecting cash flow	- 2,967	- 909
<b>DVFA/SG cash flow</b>	<b>78,047</b>	<b>49,292</b>
Changes in short-term provisions	3,318	- 4,716
Cash flow movements due to investments in associated undertakings	- 518	- 198
Profits and losses from disposal of fixed assets	194	- 11
Changes in inventories	- 13,913	- 3,382
Changes in trade accounts receivable and sundry assets	- 25,568	2,524
Changes in trade accounts payable and sundry liabilities	30,294	-24,757
<b>Cash inflow from current operating activities</b>	<b>71,854</b>	<b>18,752</b>
Disposals of fixed assets	3,308	1,570
Additions to fixed assets (including changes in the group companies consolidated)	- 109,471	- 56,742
<b>Cash outflow from investing activities</b>	<b>- 106,163</b>	<b>- 55,172</b>
Proceeds from convertible loan issue	912	931
Proceeds from the issuing of loans	57,773	3,681
Payments for the redemption of loans	- 14,512	- 675
Dividend payments of the AG	- 22,906	- 24,542
Dividend payments to third parties	- 1,759	- 9
<b>Cash inflow (previous year: outflow) for financing activities</b>	<b>19,508</b>	<b>- 20,614</b>
<b>Changes in financial resources</b>	<b>- 14,801</b>	<b>- 57,034</b>
Financial resources at beginning of period	24,565	81,599
<b>Financial resources at end of period</b>	<b>9,764</b>	<b>24,565</b>

# Balance sheet of the AG

as at 30 September 2000

Assets '000€	Note no.	1999/2000	1998/1999
<b>Fixed assets</b>	<b>1</b>		
Intangible assets		3,312	1,629
Property, plant and equipment		167,035	129,246
Financial assets			
Shares in affiliated companies		47,177	8,452
Investments		2	0
Other loans		1	1
		47,180	8,453
		<b>217,527</b>	<b>139,328</b>
<b>Current assets</b>			
Inventories	<b>2</b>	210,091	199,687
Receivables and other assets	<b>3</b>		
Accounts receivable, trade		94,821	62,614
Receivables from affiliates		11,552	897
Receivables from other group companies		983	2,329
Other assets		4,150	2,757
		111,506	68,597
Short-term security investments	<b>4</b>	1,536	1,954
Liquid assets	<b>5</b>	4,202	23,513
		<b>327,335</b>	<b>293,751</b>
<b>Prepaid expenses</b>		<b>6</b>	<b>4</b>
<b>Total assets</b>		<b>544,868</b>	<b>433,083</b>



<b>Equity and liabilities</b>	'000€	Note no.	1999/2000	1998/1999
<b>Equity</b>		<b>6</b>		
Subscribed capital			81,920	81,807
<i>Contingent capital 39,915 thousand €</i>				
Capital reserves			21,821	21,934
Revenue reserves			105,497	97,196
Retained earnings			24,000	22,906
			<b>233,238</b>	<b>223,843</b>
<b>Special reserves with an equity portion</b>		<b>7</b>	<b>1,790</b>	<b>2,386</b>
<b>Provisions</b>		<b>8</b>		
Provisions for pensions			24,054	24,455
Other provisions			73,485	74,061
			<b>97,539</b>	<b>98,516</b>
<b>Liabilities</b>		<b>9</b>		
Convertible loans			2,781	1,869
Bank loans and overdraft			53,039	3,681
Accounts payable, trade			97,499	64,679
Payable to affiliates			13,601	3,649
Other liabilities			45,376	34,456
			<b>212,296</b>	<b>108,334</b>
<b>Deferred items</b>			<b>5</b>	<b>4</b>
<b>Total equity and liabilities</b>			<b>544,868</b>	<b>433,083</b>

# Changes in fixed assets of the AG

for the period 1 October 1999 to 30 September 2000

Cost of acquisition or construction

'000€	Value as of 1.10.1999	Additions in the current year	Disposals in the current year
<b>Intangible assets</b>			
Franchises, trademarks, patents, licenses and similar rights and licenses to such rights	7,939	609	344
Advances paid on intangible assets	581	1,602	–
	<b>8,520</b>	<b>2,211</b>	<b>344</b>
<b>Tangible assets</b>			
Land and buildings	221,247	5,455	623
Technical equipment and machinery	450,128	22,509	30,759
Other equipment, factory and office equipment	45,319	2,986	6,947
Payments on account and assets under construction	45,583	33,666	16
	<b>762,277</b>	<b>64,616</b>	<b>38,345</b>
<b>Financial assets</b>			
Shares in affiliated companies	10,476	38,726	–
Shareholdings	–	2	–
Other loans	1	–	–
	<b>10,477</b>	<b>38,728</b>	<b>–</b>
<b>Total fixed assets</b>	<b>781,274</b>	<b>105,555</b>	<b>38,689</b>

Transfers	Write-ups 30.9.2000	Net book value		Depreciation and write-downs in current fiscal year
		30.9.2000	30.9.1999	
462	7,075	1,591	1,048	501
- 462	-	1,721	581	-
-	<b>7,075</b>	<b>3,312</b>	<b>1,629</b>	<b>501</b>
1,719	202,547	25,251	20,667	2,578
7,805	383,120	66,563	55,574	17,371
169	35,846	5,681	7,422	2,612
- 9,693	-	69,540	45,583	-
-	<b>621,513</b>	<b>167,035</b>	<b>129,246</b>	<b>22,561</b>
-	2,025	47,177	8,452	-
-	-	2	-	-
-	-	1	1	-
-	<b>2,025</b>	<b>47,180</b>	<b>8,453</b>	-
<b>0</b>	<b>630,613</b>	<b>217,527</b>	<b>139,328</b>	<b>23,062</b>

# Profit and loss account of the AG

for the period 1 October 1999 to 30 September 2000

'000€	Note no.	1999/2000	1998/1999
<b>Turnover</b>	<b>12</b>	<b>1,612,719</b>	<b>1,083,602</b>
Variations in inventories of finished goods and work in process		45,954	– 16,088
Own work capitalised		5,588	3,965
Other operating income	13	22,918	16,368
Cost of raw materials and supplies	14	– 1,465,563	– 882,883
Personnel expenses	15	– 97,675	– 99,837
Depreciation on fixed assets	16	– 23,062	– 22,139
Other operating expenses	17	– 50,914	– 39,995
Income from investments	18	5,786	6,135
Net interest	19	– 1,754	1,072
<b>Result of ordinary activities</b>		<b>53,997</b>	<b>50,200</b>
Taxes on income	20	– 21,697	– 25,249
<b>Profit for the financial year</b>		<b>32,300</b>	<b>24,951</b>
Allocations to revenue reserves		– 8,300	– 2,045
<b>Dividend</b>		<b>24,000</b>	<b>22,906</b>

# Notes to the Financial Statements:

## Group and AG

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### General remarks

The notes to the financial statements of the Group and those of Norddeutsche Affinerie AG were compiled in accordance with the statutory accounting requirements of the German Commercial Code (HGB). Unless specifically indicated, the statements made apply to both. In order to improve the clarity of presentation, some items have been combined in the balance sheets and the profit and loss accounts and detailed separately in the notes to the financial statements.

For the first time, all the individual and consolidated financial statements were prepared in thousand Euro. The previous years' figures have been converted accordingly.

### Consolidated companies

Compared with the previous year, the number of consolidated companies has been increased to eight subsidiaries, of which Hüttenwerke Kayser AG, Lünen, and Deutsche Giessdraht GmbH, Emmerich, have been included for the first time. Two companies have been included on the basis of consolidated financial statements for their sub-group which were prepared for the purpose of this consolidation. In addition, four associated companies have been included by the equity method. The inclusion of other subsidiaries and associated companies was waived on account of their insignificance with regard to the Group's overall financial position.

Compared with the previous year, the consolidated financial statements have been impacted by the initial consolidation of the above-mentioned companies as well as by the merger of C.F. Spiess & Sohn GmbH & Co. with URANIA Chemicals GmbH to form SPIESS-URANIA Chemicals GmbH.

### Consolidation principles

The capital consolidation is performed in accordance with the book value method, whereby the book values of the investments are set off against the shares of the equity of the subsidiaries as of the date of initial consolidation. The date of initial consolidation is defined as the acquisition date. Whilst the earnings and expenditures of Hüttenwerke Kayser AG are included in the full consolidation pro rata temporis, Deutsche Giessdraht GmbH was consolidated for the whole financial year due to the uniform management control actually in place and in view of its significance. Differences arising on initial consolidation to the extent that they possess the character of goodwill have been capitalised and amortised over their probable useful life of up to ten years. There were no negative differences on initial consolidation.

# Notes

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Receivables and payables as well as income and expenses arising between the companies included by the full consolidation method have been completely eliminated; likewise any material inter-company profits.

## **Accounting and valuation principles**

The financial statements of those companies included in the consolidated financial statements by the full consolidation method have been prepared in accordance with uniform accounting and valuation principles. The principles used in the financial statements of Norddeutsche Affinerie AG and in the consolidated financial statements of the Group are identical. No adjustment was made to the interest rate used for calculating the pension provisions at certain subsidiaries since this was not considered significant.

## **Fixed assets**

Intangible assets are stated at cost and depreciated on schedule.

Tangible fixed assets are valued at acquisition cost or construction cost. The construction cost of self-constructed assets includes directly allocable costs and related overhead costs. Movable fixed assets are depreciated using the declining-balance method with scheduled transition to the straight-line method in accordance with the fiscally permissible possibilities. Exceptions to this are additions to expand the capacity for processing concentrates which are depreciated using the straight-line method.

Low-value items are fully depreciated in the year of acquisition. Unscheduled depreciation is made if the estimated value of an asset is calculated as being lower than the net book value.

The financial assets are stated at the lower of cost or market value.

## **Current assets**

Inventories are stated at the lower of cost or market value at the balance sheet date. The metal inventories are accounted for using the "Lifo" method. As far as necessary, reductions are made for a decline in value on an individual basis. The principle of loss-free valuation is maintained.

Receivables and other assets are accounted for at cost. Doubtful receivables are accounted for using an allowance account. Receivables in foreign currencies are valued at the lower of the historical exchange rate or at the buying rate in effect at the balance sheet date.

Securities are stated at cost less write-downs to the current market value, if necessary.

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### Provisions

Provisions for direct pension obligations are provided on the basis of actuarial principles and discounted at interest rates of 3,5 % and 6 %.

Pension and provident funds are funded in accordance with tax regulations. Provisions have been made to cover the unfunded portion of the Company's pension obligations, as determined in accordance with the regulations of Section 6a of the German Income Tax Code. To calculate the deficient cover, the securities held in the funds' assets were valued at book value and leased property valued at its intrinsic value.

Other provisions cover all foreseeable risks and uncertain obligations, including open contracts. They are accounted for at the amounts expected to be required for settlement.

### Liabilities

All liabilities are stated at their repayment value. Liabilities in foreign currencies are translated at the higher of the rate in effect when they were booked or the selling rate on the balance sheet date.

The valuation of transactions, which are still subject to metal price risks as of the balance sheet date, was undertaken on a "per metal" basis. As part of portfolio examinations, unrealised gains were set off against unrealised losses regardless of the period of their future realisation. A loss carry-over after set-off is recorded as a liability under provisions, a gain carry-over is not taken into account.

## Group Segments

In the business year 1999/2000 NA AG has extended the Financial Review in compliance with Section 297 § 1 of the German Commercial Code (HGB) by a report on the Group Segments. The division between the Segments has been arranged in accordance with the Group's internal production and reporting structure.

'000€	Segment 1 Metal Production	Segment 2 Copper and Copper-related Products	Other	Group total
Turnover				
Total	1,177,123	1,564,659	3,509	2,745,291
of which with other Segments	798,379	50,251		848,630
Group with third parties	378,744	1,514,408	3,509	1,896,661
Earnings before taxes on income*	36,509	27,822	1,088	65,419
EBIT	40,244	33,047	1,020	74,311
Fixed assets	198,696	37,385	1,117	237,198
Capital expenditure	63,871	14,867	28	78,766
Depreciation	25,131	7,599	117	32,847
Total assets	476,992	202,982	1,618	681,592
Personnel expenses	103,817	45,861		149,678
Average number of employees	2,220	934		3,154

\* Without minority interests

## Commentary on the Segments

The units for the procurement of copper-containing raw materials and precious metal-containing raw materials and the production of marketable metals are combined in Segment 1 "Metal Production". The raw materials used are generally copper concentrates, copper-containing recycling materials and precious metal-bearing raw materials.

The Segment's main products are copper cathodes which can be traded on the metal exchanges, saleable gold, silver and platinum group metal products as well as the co-products sulphuric acid and iron silicate products. Whilst the precious metals and other products are sold to external processors, the copper cathodes are transferred to Segment 2 where they are further processed and marketed. In Segment 1 this results in a comparably high percentage of the inter-Group turnover.

### Segment 1

#### Metal Production

##### Segment 1

- NA BU 1 Copper Production and Recycling
- Hüttenwerke Kayser
- CABLO
- NA BU 3 Precious Metals
- RETORTE
- PEUTE BAUSTOFF



**Segment 2**  
**Copper and Copper-related**  
**Products**

**Segment 2**

- **NA BU 2 Copper Products**
- **Deutsche Giessdraht**
- **MicroMet**
- **SPIESS-URANIA**

The higher capital expenditure volume for the sector as well as the resultant fixed assets and depreciation are due to the expansion of the concentrate processing facilities (Project RWO 2000).

Segment 2 “Copper and Copper-related Products” includes, in particular, the processing of the aforementioned copper cathodes from Segment 1, which are traded internationally on the metal exchanges. At NA these cathodes are processed to continuous cast wire rod and shapes. The Segment also covers the marketing of these copper products and the copper trade. The main customers are the cable, wire and semis industries. Distribution is largely in Europe. In addition, we have also allocated the production and distribution of metal powders and copper-based agrochemicals to this Segment.

**Notes on the Segment data**

Amounts and results which cannot be attributed to the Segments are listed in the column entitled “Other”.

The turnover between the Segments and Group companies is transacted at prices customary on the market.

Capital expenditure and depreciation refer to intangible assets as well as fixed and financial assets inasmuch as the circle of consolidated companies is not changed.

The total assets include all the assets with the exception of the liquid assets.

# Notes

## 1 | Fixed assets

### Notes to the balance sheet and profit and loss account

The split and changes in the fixed assets of the AG and of the Group are given on pages 70/71 and 64/65.

Intangible assets include usage rights acquired for a fee which are depreciated on schedule as well as goodwill resulting from the consolidation within the framework of the consolidated financial statements.

Capital expenditures totalled 75 million € in the Group. These were made primarily at the AG and Hüttenwerke Kayser. The main expenditures at the AG were for the capacity expansion of the concentrate processing facilities and a plant for the production of oxygen-free and low-alloyed copper products as well as a pilot plant for the production of copper thin strip. At Hüttenwerke Kayser, work has begun on the construction of the ISA Smelter, a plant for the treatment of secondary raw materials.

A breakdown of the shareholdings accounted for under financial assets is given on page 90. Additions to intangible assets of the AG represent the acquisition of Hüttenwerke Kayser AG and a capital increase by means of a capital contribution in kind of the AG's copper chemical and metal powder activities to SPIESS-URANIA Chemicals GmbH and MicroMet GmbH Pulvertechnologie respectively.

## 2 | Inventories

'000€	NA Group		NA AG	
	30.9.2000	30.9.1999	30.9.2000	30.9.1999
Raw materials and supplies	110,062	87,855	65,473	86,560
Unfinished goods	151,504	77,295	122,570	77,229
Finished goods, merchandise	55,583	46,442	21,961	35,282
Advanced payments made	240	616	87	616
	<b>317,389</b>	<b>212,208</b>	<b>210,091</b>	<b>199,687</b>

Inventories in the Group increased by 105 million €, of which 76 million € resulted from the initial consolidation of Hüttenwerke Kayser. 10 million € in inventories were accumulated by the AG, which had built up stocks under unfinished products to ensure the continuity of the cathode production during the standstill in the East Smelter (RWO).

The difference between the market value of inventories at the balance sheet date and our valuation amounts to 127 million € for the AG and 162 million € for the Group.

### 3 | Receivables and other assets

	Maturing in		Total	Total
'000€	less than 1 year	more than 1 year	30.9.2000	30.9.1999
<b>NA Group</b>				
Trade receivables from third parties	112,050	–	112,050	69,037
Receivables from affiliated companies	4,895	–	4,895	641
Receivables from enterprises in which participations are held	1,020	–	1,020	3,179
Other assets	6,182	1,061	7,243	4,269
	<b>124,147</b>	<b>1,061</b>	<b>125,208</b>	<b>77,126</b>

	Maturing in		Total	Total
'000€	less than 1 year	more than 1 year	30.9.2000	30.9.1999
<b>NA AG</b>				
Trade receivables from third parties	94,821	–	94,821	62,614
Receivables from affiliated companies	11,552	–	11,552	897
Receivables from enterprises in which participations are held	983	–	983	2,329
Other assets	3,654	496	4,150	2,757
	<b>111,010</b>	<b>496</b>	<b>111,506</b>	<b>68,597</b>

The increase in receivables and other assets was in large part the result of a 32.2 million € rise at the AG in trade receivables from third parties due to higher metal prices and an increased business volume. At the time the balance sheet was compiled, the outstanding trade receivables had almost been completely settled.

# Notes

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## 4 | Short-term security investments

Our short-term securities are pledged to secure claims from one of our pension funds.

A write-up of about 22 thousand € was required to reinstate the original value of securities.

## 5 | Liquid assets

Liquid assets include current and fixed bank deposits as well as checks, cash in hand and deposits at the Bundesbank.

## 6 | Equity

At the Annual General Meeting on 4 April 2000 a resolution was passed for the conversion of the subscribed capital from DM into Euro and that the sum be rounded off to 81,920,000 € by increasing the capital from company funds without issuing new shares through the conversion of a sum of 113,299.01 € from capital reserves. The subscribed capital is as before divided into 32,000,000 bearer shares. In addition, a resolution was also passed for the creation of a new approved capital. The Executive Board has thus been authorised, subject to the approval of the Supervisory Board, to increase the subscribed capital by up to 40,000,000 € in the period until 31 March 2005 by issuing new shares in exchange for a cash and/or capital contribution in kind in one or several partial amounts.

At the same time, at the Annual General Meeting a resolution was passed for the adjustment of the existing contingent capital; it now amounts to 4,915,200 €. The contingent capital increase will only be realised if the holders of convertible bonds, which are to be issued by 11 June 2003, exercise their right to convert them into new shares. In addition, the contingent capital was increased by a further 35,000,000 € (contingent capital II). This is to cover the entitlements of holders of warrants and/or convertible bonds which could be issued up to 31 March 2005.

A further 8.3 million € for the AG and 3 million € for the Group were allocated from the net profit to other revenue reserves.

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7 | Special reserves  
with an equity portion

In the Group one fifth (1,904 thousand €) of the special reserves with an equity portion formed in accordance with Section 52 § 16 of the German Income Tax Code to reinstate the original values were released. The special reserves reported the previous year in the amount of 869 thousand € for the replacement of a capital asset were used in the amount of 828 thousand € and released in the amount of 41 thousand €.

8 | Provisions

The pension obligations for the fully consolidated subsidiaries have been evaluated in accordance with the new biometric tables.

In addition to provisions formed in the business year at the AG to cover additional tax payments in the sum of 1,250 thousand €, the other provisions primarily include amounts to cover the threat of losses from open contracts, outstanding maintenance, major repairs and modernisation measures as well as obligations to employees resulting from arrears of vacation pay, Christmas bonuses and early retirement payments.

The increase in provisions in the Group is, almost without exception, due to the subsidiaries which have been consolidated for the first time.

# Notes

## 9 | Liabilities

'000€	Maturing in			Total	Total
	less than 1 year	1 to 5 years	more than 5 years	30.9.2000	30.9.1999
<b>NA Group</b>					
Convertible bonds	938	1,843	–	2,781	1,869
Liabilities to banks	17,078	52,300	10,553	79,931	4,914
Advance payments received on orders	1,671	–	–	1,671	2,441
Trade accounts payable	127,425	251	–	127,676	71,277
Liabilities due to affiliated companies	272	–	26	298	833
Liabilities due to enterprises in which participations are held	1,483	–	–	1,483	84
Other liabilities	58,760	–	155	58,915	33,836
<i>of which taxes paid</i>				42,264	20,464
<i>of which as part of social contributions</i>				5,924	4,802
	<b>207,627</b>	<b>54,394</b>	<b>10,734</b>	<b>272,755</b>	<b>115,254</b>

'000€	Maturing in			Total	Total
	less than 1 year	1 to 5 years	more than 5 years	30.9.2000	30.9.1999
<b>NA AG</b>					
Convertible bonds	938	1,843	–	2,781	1,869
Liabilities to banks	7,342	36,806	8,891	53,039	3,681
Advance payments received on orders	1,437	–	–	1,437	2,441
Trade accounts payable	97,499	–	–	97,499	64,679
Liabilities due to affiliated companies	13,601	–	–	13,601	3,649
Other liabilities	43,939	–	–	43,939	32,015
<i>of which taxes paid</i>				30,363	19,258
<i>of which as part of social contributions</i>				4,505	4,530
	<b>164,756</b>	<b>38,649</b>	<b>8,891</b>	<b>212,296</b>	<b>108,334</b>

10 | Contingent liabilities  
and other financial  
liabilities

The convertible bonds with a nominal value of 5,440 thousand DM (2,781 thousand €) comprise 5,440 bonds made out to the holder with a nominal amount of 1,000 DM (511.29 €) each and with 4 % p.a. and 5.5 % p.a. interest payable. They have been acquired by senior staff of the NA Group as part of a share option plan.

The liabilities to banks in the Group have increased by a total of 75 million €. Of this, 24 million € was due to the initial consolidation of Hüttenwerke Kayser and 49 million € to the AG. At the AG, the increase was caused by taking a loan of funds from the ERP environment and energy saving programme and a bank loan combined with an interest/ currency swap.

The advance payments received include fees from tolling business still in process. Similar to the trade receivables, the trade accounts payable have also increased due to both quantity and price changes.

At the subsidiaries, the liabilities to banks in the sum of 20,835 thousand € are secured by mortgages and in the amount of 20 thousand € by the transfer of the ownership of a wheel loader.

	NA Group 30.9.2000	NA AG 30.9.2000
'000€		
Contingent liabilities from notes discounted	6,506	6,406
Financial liabilities from capital projects	61,085	43,017
Financial liabilities from tolling agreements	12,373	9,648
Other financial liabilities (p.a.)	4,627	2,765

Liabilities under tolling agreements refer to the value of the metal extracted during the tolling process which has to be returned. These liabilities are accounted for by corresponding recourse claims.

# Notes

## 11 | Derivative financial instruments

To hedge the risks in the operational business which arise from fluctuations in non-ferrous metal prices and foreign exchange rates, we employ in the NA Group derivative financial instruments in the form of futures transactions, options and interest hedging. These agreements, which are monitored as part of a risk management system, are made with reputable brokers and banks.

The non-ferrous metals futures and hedging transactions primarily concern copper and the U.S. dollar.

mill. €	Nominal volumes	
	30.9.2000	30.9.1999
<b>Non-ferrous metals futures transactions</b>		
Maturing in up to 1 year	550.7	361.6
Maturing in 1 to 5 years	91.3	60.5
Maturing in more than 5 years	0	0
	<b>642.0</b>	<b>422.1</b>
<b>Foreign exchange forward trading</b>		
Maturing in up to 1 year	339.4	306.2
Maturing in 1 to 5 years	85.6	3.4
	<b>425.0</b>	<b>309.6</b>
<b>Option dealing</b>		
Non-ferrous metals	0.8	2.5
Foreign exchange	37.7	17.7
	<b>38.5</b>	<b>20.2</b>
<b>Interest derivatives</b>	<b>29.2</b>	<b>3.7</b>

The nominal volume of the derivative financial instruments is the sum of all the purchase and sales contracts. The market value on the other hand is calculated using the value of the contracts at the price valid on the day of valuation and indicates how – separated from the underlying transactions – the derivative contracts would impact profit. As at 30 September 2000 the market value, which thus results from setting off the respective profit and loss of the individual items, amounted to 26 million € for metal hedging, 17.3 million € for foreign exchange hedging, 0.02 million € for option dealing and – 1.6 million € for interest derivatives.



## 12 | Turnover

	NA Group		NA AG	
'000€	99/00	98/99	99/00	98/99
<b>By product groups</b>				
Copper cathodes	367,235	166,096	267,523	160,225
Continuous cast wire rod	695,963	428,316	646,590	428,316
Continuous cast shapes	347,712	205,588	347,712	205,588
Precious metals	317,797	221,822	301,838	221,822
Chemicals	97,121	63,965	12,452	30,844
Metal powders	18,829	15,852	0	15,852
Other	52,004	33,793	36,604	20,955
	<b>1,896,661</b>	<b>1,135,432</b>	<b>1,612,719</b>	<b>1,083,602</b>

In the year under review, 63 % of the Group turnover was achieved in the domestic market, 26 % in the European Union, 8 % in the non EU European markets and the remaining 3 % in non-European countries, primarily in North America.

The Group turnover growth of 67 % is attributable both to higher metal prices and to the increase in the AG's business volume including trading. The expansion of the Group by Hüttenwerke Kayser AG contributed 174 million € to the turnover increase after elimination of the internal turnover.

## 13 | Other operating income

	NA Group		NA AG	
'000€	99/00	98/99	99/00	98/99
Release of special items with an equity portion	2,773	289	597	0
Other operating income	19,908	17,073	22,321	16,368
	<b>22,681</b>	<b>17,362</b>	<b>22,918</b>	<b>16,368</b>

This total includes income from the disposal of fixed and financial assets, from the release of provisions as well as income not relating to the period under review and costs which have been charged to another party. In addition, balancing amounts for utilised provisions are included here, for which the primary cost is charged to the respective item of expense. The increase in the other operating income in the Group is due in particular to the increase in consolidated companies and in the AG to receipts for services performed for subsidiaries.

# Notes

## 14 | Cost of raw materials and supplies

'000€	NA Group		NA AG	
	99/00	98/99	99/00	98/99
Raw materials, supplies and purchased goods	1,564,006	854,937	1,403,067	826,667
Cost of purchased services	61,835	57,680	62,496	56,216
	<b>1,625,841</b>	<b>912,617</b>	<b>1,465,563</b>	<b>882,883</b>

The trend in the cost of raw materials and supplies corresponded to the turnover. Thus, the proportion of the cost of raw materials and supplies to turnover in the Group rose from 82 % to 84 % due to an increase in commercial transactions.

## 15 | Personnel expenses and employees

'000€	NA Group		NA AG	
	99/00	98/99	99/00	98/99
Wages and salaries	120,832	88,363	79,533	80,818
Social security and special benefit expenses	28,846	21,368	18,142	19,019
<i>of which expenditure for old age pensions</i>	<i>4,352</i>	<i>3,604</i>	<i>2,302</i>	<i>2,740</i>
	<b>149,678</b>	<b>109,731</b>	<b>97,675</b>	<b>99,837</b>

At the AG, the decline in personnel expenses has resulted from a reduction in the number of employees caused by spinning off the copper chemical and metal powder sectors into the subsidiaries SPIESS-URANIA Chemicals GmbH and MicroMet GmbH Pulvertechnologie respectively.

In contrast, the increase in the personnel expenses in the Group was caused by the consolidation of Hüttenwerke Kayser AG and Deutsche Giessdraht GmbH as well as the merger of C. F. Spiess & Sohn GmbH & Co. with URANIA Chemicals GmbH.

The average number of employees during the year was:

	NA Group		NA AG	
	99/00	98/99	99/00	98/99
Wage earners	1,965	1,344	1,259	1,285
Salaried employees	1,050	734	607	618
Trainees/apprentices	139	112	107	112
	<b>3,154</b>	<b>2,190</b>	<b>1,973</b>	<b>2,015</b>

#### 16 | Depreciation

In the year under review, special tax depreciation was recognised in the sum of 828 thousand € in accordance with Section 35 of the German Tax Code. As in the previous year, partial write-offs or other fiscal extraordinary depreciation were not necessary.

#### 17 | Other operating expenses

The other operating expenses include inter alia administration and marketing costs, fees, insurance, rents and leases as well as allocations to provisions. In addition, other taxes in the Group in the sum of 704 thousand € (previous year: 576 thousand €) are shown.

The initial consolidation of the aforementioned subsidiaries also impacted the other operating expenses. The increase by 36.1 million € to 85.8 million € is due to the additions to the consolidated companies to the extent of about 18 million € and to the AG to the extent of 11 million €. At the AG it was mainly caused by high allocations to provisions for outstanding maintenance, advisory services, exchange differences and freight expenses.

#### 18 | Income from investments

'000€	NA Group		NA AG	
	99/00	98/99	99/00	98/99
Income from agreements to transfer profits	2	0	2	0
Income from shareholdings	2	4	5,784	6,135
<i>of which from affiliated companies</i>	0	0	5,784	6,135
Profit from associated undertakings	467	2,600	0	0
	<b>471</b>	<b>2,604</b>	<b>5,786</b>	<b>6,135</b>

# Notes

## 19 | Net interest

'000€	NA Group		NA AG	
	99/00	98/99	99/00	98/99
Income from loans under financial assets	81	23	0	0
Interest and similar income	4,759	2,808	4,904	2,699
<i>of which from affiliated companies</i>	<i>178</i>	<i>23</i>	<i>837</i>	<i>119</i>
	<b>4,840</b>	<b>2,831</b>	<b>4,904</b>	<b>2,699</b>
Depreciation on financial assets and securities in current assets	634	4	0	0
Interest and similar expenses	9,073	2,080	6,658	1,627
<i>of which to affiliated companies</i>	<i>3</i>	<i>146</i>	<i>250</i>	<i>232</i>
	<b>- 4,867</b>	<b>747</b>	<b>- 1,754</b>	<b>1,072</b>

The net interest includes the interest component of pension costs in the sum of 813 thousand € (previous year: 745 thousand €) at the AG and 1,751 thousand € (previous year: 1,035 thousand €) for the Group.

In the year under review, the net interest result is a negative 4.9 million €. This is largely due to the bank loans which were taken out to fund the growth investment projects.

## 20 | Taxes on income

The taxes on income in the sum of 28.7 million € for the Group represent an effective tax rate of 41 % compared with a rate of 51 % the previous year. The reduction is largely due to the use of fiscal losses brought forward for subsidiaries and the use of taxed provisions.

## 21 | Impact of tax measures

The utilisation of the additional depreciation permitted for tax purposes in the previous years and in the year under review, taking into account the reversal of special reserves with an equity portion, has increased income for tax purposes for the Group by approximately 3.3 million €. Based on the new tax rates resulting from the tax reduction legislation, it is expected that these timing differences will reverse at a future tax rate of about 40 %.

### Executive Board and Supervisory Board

The members of the Supervisory Board and the Executive Board are listed on pages 95/96 of this report.

Based on the recommended dividend, the remuneration for the members of the Executive Board for the financial year 1999/2000 amounted to 1,445,613 € and for the members of the Supervisory Board to 101,250 €. Former members of the Executive Board and their survivors received a total of 1,037,176 €. Provisions in the sum of 11,310,499 € have been allocated to cover their pension claims.

Members of the Supervisory Board hold 11,244 Norddeutsche Affinerie shares and members of the Executive Board 6,200 Norddeutsche Affinerie shares. In addition, the members of the Executive Board have acquired convertible bonds in a nominal value of 406 thousand €, which in accordance with the bond conditions can be converted on maturity into Norddeutsche Affinerie shares.

### Recommended profit appropriation

Net profit of Norddeutsche Affinerie AG	32,300,000 €
Allocations to revenue reserves	8,300,000 €
Net surplus	24,000,000 €

We shall recommend at the Annual General Meeting that the net surplus of Norddeutsche Affinerie AG in the sum of 24.000.000 € is used to pay a dividend of 0.75 € per share.

Hamburg, 20 December 2000

The Executive Board

Dr Marnette

Dr Landau

Sehner

# Shareholdings

as at 30 September 2000

Company name and seat	% of capital held	Currency	Subscribed capital in '000	Held directly by	Stake in %
1. Norddeutsche Affinerie AG					
2. Hüttenwerke Kayser AG	98	€	23,400	1	98
3. Gesellschaft für Metallanlagen GmbH, Hamburg	100	€	3,900	1 2	67 33
4. SPIESS-URANIA Chemicals GmbH, Hamburg	60	€	8,667	1	60
5. MicroMet GmbH Pulvertechnologie, Hamburg	100	€	2,600	1	100
6. CABLO Metall-Recycling & Handel GmbH, Hamburg	100	€	767	1	100
7. PEUTE BAUSTOFF GmbH, Hamburg	100	€	52	1	100
8. RETORTE Ulrich Scharrer GmbH, Röthenbach	100	DM	4,000	1	100
9. Berliner Kupfer-Raffinerie GmbH, Hamburg	100	DM	5,000	1 2	67 33
10. Hüttenbau-Gesellschaft Peute mbH, Hamburg	100	€	26	1	100
11. NA Venture GmbH, Hamburg	100	€	25	1	100
12. Deutsche Giessdraht GmbH, Emmerich	60	€	6,136	3	60
13. Hüttenwerke Kayser GmbH, Lünen	100	DM	50	2	100
14. GRADUS KG i.L., Grünwald	95	DM	50	2	95
15. C.M.R. International N.V., Antwerp	50	BEF	65,030	2	50
16. Hungurania GmbH, Budapest	100	HUF	3,000	4	100
17. J.M. Lauff GmbH, Cologne	100	DM	500	4	100
18. Dr. Spiess Chemische Fabrik GmbH, Kleinkarlbach	100	DM	1,000	4	100
19. Spiess-Urania Pflanzenschutz GmbH, Ochsenfurt	100	DM	300	4	100
20. EGC Eisenbahn- u. Gleisbau-Consult GmbH, Berlin	50	DM	31	4	50
21. E.R.N. Elektro-Recycling NORD GmbH, Hamburg	70	€	512	6	70
22. MicroMet Italia S.r.l., Milan	100	€	75	5	100

Companies 2, 3, 4, 5, 6, 7, 9 and 12 were fully consolidated as part of the financial statements. Companies 8, 17, 18 and 19 were consolidated using the equity method. A complete list of the shareholdings is on file at the commercial register of the Hamburg courts under the number B 1775.

# Auditors' Report

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We have audited the annual financial statements, together with the bookkeeping system, of the Company Norddeutsche Affinerie AG as well as the consolidated financial statements and the report on the position of the Company and the Group prepared by the Company for the year ended 30 September 2000. The preparation of those documents in accordance with German commercial law is the responsibility of the Company's management. Our responsibility is to express an opinion on the annual financial statements, together with the bookkeeping systems, as well as on the consolidated financial statements and the report on the position of the Company and the Group based on our audit.

We conducted our audit of the annual and the consolidated financial statements in accordance with § 317 HGB and the generally accepted standards for the audit of financial statements promulgated by the Institut der Wirtschaftsprüfer (IDW). Those standards require that we plan and perform the audit such that misstatements materially affecting the presentation of the net assets, financial position and results of operations in the annual and consolidated financial statements in accordance with German principles of proper accounting and in the report on the position of the Company and the Group are detected with reasonable assurance. Knowledge of the business activities and the economic and legal environment of the Company and evaluations of possible misstatements are taken into account in the determination of audit procedures. The effectiveness of the internal control system and the evidence supporting the disclosures in the books and records, the annual and the consolidated financial statements and the report on the position of the Company and the Group are examined primarily on a test basis within the framework of the audit. The audit includes assessing the accounting and consolidation principles used and significant estimates made by the management, as well as evaluating the overall presentation of the annual and the consolidated financial statements and the report on the position of the Company and the Group. We believe that our audit provides a reasonable basis for our opinion.

Our audit has not led to any reservations.

# Auditors' Report

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In our opinion, the annual and the consolidated financial statements give a true and fair view of the net assets, financial position and results of operations of the Company and the Group, respectively, in accordance with German principles of proper accounting. On the whole, the report on the position of the Company and the Group provides a suitable understanding of the Company's and Group's position and suitably presents the risks of future development.

Hamburg, 21 December 2000

KPMG Deutsche Treuhand-Gesellschaft  
Aktiengesellschaft  
Wirtschaftsprüfungsgesellschaft



Pallasch  
Wirtschaftsprüfer



Ditting  
Wirtschaftsprüfer



# Supervisory Board's Report

During the business year 1999/2000 the Supervisory Board carefully watched over the Executive Board's business management and followed the significant issues in an advisory capacity. At the four meetings held at regular intervals and in connection with the preparations for same, we have received and discussed detailed verbal and written reports and documentation provided by the Executive Board on the standing of the Company and its affiliated companies, the business performance, major projects and further development. In addition to the extensive reports on current business the Executive Board has also kept us thoroughly informed, especially about the respective status of investment plans, its performance in the social sector, risk management including the preparations for the millennium as well as about business policy and the strategic company planning. At a Supervisory Board Meeting in Lünen which was followed by a plant tour, the Supervisory Board collected information on the status of the integration of Hüttenwerke Kayser AG in the NA Group. We had no objections to raise.

Apart from the statutory Committee in accordance with Section 27 §3 Law on Co-determination, a Preparatory Committee and a Personnel Committee were formed with equal representation. The Personnel Committee was convened twice. Measures requiring the Supervisory Board's approval were reported in detail and justified by the Executive Board. We have debated these measures in detail. They included, in particular, the project to take over parts of the precious metal business of Degussa-Hüls AG, the Company's participation in the research project "copper-based solar cells" as well as the merger of C.F. Spiess & Sohn GmbH & Co. with URANIA Chemicals GmbH.

The Chairman of the Supervisory Board has been in constant contact with the Chairman of the Executive Board and was regularly informed about all the major business occurrences and trends in the key financial figures. Imminent decisions and strategic orientation were deliberated in numerous preliminary discussions.

The Company's economic standing and its operative and strategic orientation were the main themes of our discussions on the Supervisory Board and with the Executive Board.

The financial statements for the business year from 1 October 1999 to 30 September



**Dr Carl Voigt**  
Chairman of the  
Supervisory Board

# Supervisory Board's Report

2000 together with the management report have been audited by KPMG Deutsche Treuhand-Gesellschaft AG, Wirtschaftsprüfungsgesellschaft, Frankfurt a. M. und Berlin, which has issued an unqualified report. We have also examined the financial statements and the management report of the Executive Board and the Executive Board's recommendation for the appropriation of the net profit. The auditors' report was also available and was included in the discussions and examinations. The auditors participated in the Supervisory Board's consultations about the financial statements and reported on the main results of the audit. In compliance with the final result of our examination, there are no objections to raise.

We agree with the result of the audit. The consolidated financial statements for the business year 1999/2000, for which the auditor also issued an unqualified report, and the Group management report combined with the Company's management report as well as the report issued by the Group auditor KPMG Deutsche Treuhand-Gesellschaft AG, Wirtschaftsprüfungsgesellschaft, Frankfurt a. M. und Berlin, have been presented and explained to us. We have examined the consolidated financial statements and the Group management report. We have no objections to raise and also agree with the result of the audit. We have approved the financial statements presented by the Executive Board. The

annual financial statements are thus adopted. We are in agreement with the Executive Board's management report. We agree with the recommendation for the appropriation of the net profit.

With effect from 20 January 2000 Dr Ing. Ernst J. Wortberg was appointed a member of the Supervisory Board.

Mr Wilfried Sehner has left the Executive Board at his own request with effect from 31 December 2000. Our thanks go to Mr Sehner for his services rendered to the good of the company.

Furthermore, our thanks go to the Executive Board, the employees' representatives and NA staff for their dedicated commitment and work which have made the business year 1999/2000 such a success for the Company.

Hamburg, 31 January 2001

THE SUPERVISORY BOARD  
Dr Carl Voigt  
Chairman

# Offices Held by the Members of the Boards

## Supervisory Board

**Paul Hofmeister**, Hamburg  
Honorary Chairman

**Dr Carl Voigt**, Rodenbach  
Chairman  
Member of the Executive Board of  
Degussa-Hüls AG, Frankfurt

- dmc<sup>2</sup> Degussa Metals Catalysts  
Cerdec AG, Frankfurt  
Chairman of the Supervisory Board
- KG Deutsche Gasrußwerke GmbH & Co.,  
Dortmund  
Member of the Shareholders' Committee
- Phenolchemie GmbH & Co. KG, Gladbeck  
Chairman of the Shareholders'  
Committee and Advisory Council
- Infracor GmbH, Marl  
Member of the Supervisory Board

**Hans-Jürgen Grundmann**, Seevetal\*  
Deputy Chairman  
Shop mechanic  
Chairman of the Works' Council of  
Norddeutsche Affinerie AG

**Joachim Bruhn**, Hamburg\*  
Coppersmith  
Member of the Works' Council of  
Norddeutsche Affinerie AG

**Meinhard Carstensen**, Hamburg  
Member of the Supervisory Board of  
Dresdner Bank AG, Frankfurt

**Gottlieb Förster**, Itzstedt\*

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### **Wilfried Sehner**

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(until 31 December 2000)

- Hüttenwerke Kayser AG, Lünen  
Deputy Chairman of the Supervisory Board (until 31 December 2000)

# Glossary

<b>Anodes</b>	Positive electrodes of an electrolytic cell, end product of the RWO, copper content about 99,5%.
<b>Anode slimes</b>	Product of the copper tankhouse, which settles on the bottom of an electrolytic cell as the copper anodes dissolve. The precious and non-soluble components of the anodes are enriched in the anode slimes (e.g. silver, gold, selenium and lead).
<b>Blister copper</b>	Unrefined porous copper. Molten copper absorbs gases more easily than copper in solid form. During solidification, dissolved gases in such copper form small blisters in the copper.
<b>Cathodes</b>	Negative electrodes in an electrolytic cell. Product of the copper tankhouse (copper content > 99,99 %) and the first saleable product in copper production; basis of copper price fixation.
<b>COMEX</b>	Together with the LME one of the two most important metal exchanges. It is of particular importance to the American market.
<b>Contimelt process</b>	A continuous and thus highly energy-saving process developed by NA and Union Minière (Belgium) for the processing of blister copper, copper scrap and spent anodes into copper anodes.
<b>Continuous cast wire rod</b>	Semi-finished product produced in a continuous process for further processing to wire. The rod diameter ranges from 8 to 20 mm.
<b>Continuous casting</b>	Continuous casting produces a continuous strand. During the casting process, sizes of various lengths, are separated from the casting billet by a flying saw. A variety of profiles (rectangular bars and round billets) and lengths can be created. These so-called continuous cast shapes are further processed by rolling and pressing into sheets, foils, profiles and tubes.
<b>Converter</b>	A furnace in which metal production or refining processes are typically carried out through oxidation. Copper matte from the flash smelter is treated in the converter to blister copper.
<b>Copper concentrates</b>	A product resulting from the processing (enriching) of copper ore, NA's main raw material. Since copper is found principally only in ores in compound form and in low concentrations (0,5 to 4 % copper content), the ores, after extraction from the mine, are enriched in processing facilities into concentrates (copper content of 25 to 40 %).
<b>Copper tankhouse</b>	The copper tankhouse – an electrochemical process – is the last refining stage in copper recovery. Anodes and cathodes are hung in a sulphuric acid solution (electrolyte) and connected to an electric current. Copper and soluble impurities (nickel, etc.) are dissolved in the electrolyte. Copper from the solution is deposited on the cathode with a purity of more than 99,99 %.

# Glossary

<b>Flash smelter</b>	First phase in the processing of copper concentrate. The concentrate, which is suspended in a reaction shaft, reacts with oxygen and is melted through the heat released. Sulphur and iron are separated into intermediary products. The copper is then enriched in the copper matte (copper content about 65 %).
<b>Iron silicate stone</b>	A by-product of the (primary) copper concentrate smelting process. During such process the iron contained in the copper concentrate is combined with silicate flux ( $\text{SiO}_2$ ) to yield iron silicate ( $2 \text{FeO} \times \text{SiO}_2$ ). Although its structure is similar to natural rock, this artificially produced stone has a substantially higher density and hardness.
<b>ISA Smelter</b>	Cell furnace for the treatment of a large range of copper-containing secondary raw materials; the core of the ISA project as a result of which Hüttenwerke Kayser's leading position as a copper recycler will be enhanced.
<b>LME</b>	London Metal Exchange: the most important metal exchange in the world with the highest turnover.
<b>OF copper</b>	Oxygen-free copper.
<b>Production standstill</b>	Scheduled discontinuation of production in order to inspect, maintain and repair all the furnaces and connected plant (new refractory, burners exchanged, etc.).
<b>RWO</b>	East smelter, part of NA's works.
<b>Smelter</b>	A part of a works or company in which crude metal or bullion are recovered is called a smelter. Typical products are copper anodes and lead bullion.
<b>Spot market</b>	Daily business; market for prompt supplies.
<b>Sustainable development</b>	Lasting future-oriented development targeted since the 1992 UN Conference as being the most sensible ideal of the way forward.
<b>Top blown rotary converter (TBRC)</b>	A single-stage pyrometallurgical facility for the recovery of precious metals from the anode slimes in the copper tankhouse.
<b>Treatment and refining charges (TC/RCs)</b>	Compensation which NA receives for the processing of copper concentrates and other raw materials to copper.

## **NA Financial Calendar 2001**

1 February	Balance Sheet Press Conference
1 February	DVFA Analysts Conference
1 February	Results 1 <sup>st</sup> Quarter
22 March	AGM
17 May	Results 2 <sup>nd</sup> Quarter
23 August	Results 3 <sup>rd</sup> Quarter
20 October	6 <sup>th</sup> Open Day on the Hamburg Stock Exchange
13 December	Results 4 <sup>th</sup> Quarter (unaudited financial statements)

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