

COUNTRY REPORT

THE NETHERLANDS

Prepared for
European Nickel Group

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1. SUMMARY OF KEY FINDINGS

The Netherlands is a relatively small user of nickel. Total Dutch use in 2002 was around 4 kte (primary and recycled nickel units) which represented less than 1% of EU demand. This demand is satisfied through a combination of imports of refined nickel and recycling of existing nickel.

Whilst the nickel industry itself is relatively small, it has a wider impact on the Dutch economy through its value-chain. Through its critical use in nickel-containing alloys, it has a major impact on leading Dutch industries. In turn, the use of nickel-containing alloys in many important products manufactured in The Netherlands means that the impact of nickel is substantial in many end-use markets.

As a consequence, the total value-added in The Netherlands by nickel and its value-chain is estimated to be over Euro 1 billion.

	Value-Added (Euro Million)	Total Employment
Direct nickel industry/recycling	25	400
“First Use”	35	600
Intermediaries	200	4,000
“End Use”	820	15,000
Total	1,080	20,000

Table 1: Value Chain Summary: The Netherlands

When compared with other countries, Intermediaries and “End Users” in the Netherlands account for a greater share of value added: 19% compared with 10% and 75% compared with 62%, respectively. Most Intermediaries are in the “import/export” business while manufacturers of process plants for the food and drink and chemicals industries and high precision replication (CDs, DVDs and screen-printing) account for a greater than average share of the End Use sector.

Moreover, the direct nickel industry and the industries in its value-chain that are critically dependent upon it, employ a substantial number of people. Total employment in The Netherlands in the direct nickel industry, “First Use” industries and Intermediaries, and product manufacturers that are critically dependent on nickel is estimated to be around 14,000. And 6,000 additional jobs have been created in the economy through income and supplier “multiplier” effects and capital expenditure effects. This means that 20 000 jobs are “critically dependent” on nickel.

The industry and its value-chain also contribute significantly to the Dutch economy through high levels of investment. Total research and development in the Netherlands by the direct nickel industry and industries critically dependent on nickel is estimated to be Euro 20 million per annum. Annual capital expenditure by these sectors is



estimated to be Euro 110 million and total capital employed is estimated to be Euro 1.7 billion.

The nickel industry and its value-chain also account for substantial tax revenues. Total taxes (on employment and sales) paid by the direct nickel industry and industries critically dependent on nickel are estimated to be Euro 275 million per annum. This excludes corporate taxes.

2. INTRODUCTION

The value chain for nickel is complex. It involves three distinct tiers. These are the "Direct Nickel Industry", "First Use Sectors", and "End Use Applications".

The "**direct nickel industry**" comprises nickel mines, smelters and refineries. It also includes the transport and logistical activities associated with the movement of nickel within the EU and the activities associated with the importation of raw materials for refining (ore concentrates, nickel matte and nickel oxides) and refined nickel. The direct nickel industry also includes all activities associated with the recycling of nickel-containing products.

However, only a small amount of nickel is used as a product in its own right. Most often, it is usually combined with other materials to produce nickel-containing alloys (such as stainless steel) with distinct performance characteristics. Nickel is also used as a plating material, and to produce special chemical products for batteries and catalysts. These are known as "**First Use**" applications.

The nickel-containing alloys produced during the "First Use" stage are sold to product manufacturers both directly and indirectly. Those that are sold indirectly go via "**Intermediaries**". These include distributors who serve smaller customers and fabricators, metal formers and surface engineering companies who undertake specialist services such as metal shaping, forming and sub-assembly.

Product manufacturers use the nickel-containing alloys as part of their manufacturing process. This group comprises a large number of manufacturers of components, sub-assemblies, and other products that are then used in the manufacture of further products. Collectively, they are known as "**End Use applications**".

This report summarises the key findings from the analysis we have undertaken of the nickel value chain in The Netherlands. In particular, it quantifies key indicators of socio-economic impact, specifically: value-added, employment, capital expenditure, capital employed, R&D and taxes. For a detailed explanation of the methodology, please refer to the report on the European Union.



3. DIRECT INDUSTRY

- Total use of nickel in The Netherlands was approximately 4 kte in 2002 which represents less than 1% of total EU use.
- Demand is satisfied through a combination of imports of refined nickel and recycling of existing nickel.
- Primary nickel is not produced in The Netherlands. Imports of refined nickel totalled 3.5 kte in 2002.
- The remainder of Dutch demand is satisfied through recycling of scrap (particularly stainless steel) to produce re-usable nickel. Around 0.5 kte (Nickel Units) of recycled nickel was used in The Netherlands in 2002. Recycled nickel comes from the recycling of end of life products and through the re-use of waste produced during the First Use manufacturing and fabrication process.
- Rotterdam is, however, the principal port for primary nickel imports from countries such as Russia, Australia, Cuba, Columbia and the Dominican Republic. It is estimated that more than half of all primary nickel imported into the EU is shipped, warehoused and then transported on to its final destination, via Rotterdam. It is also the dominant location for London Metal Exchange (LME) warehousing, producer service warehousing and trade service warehousing. Local companies are also involved in inspection, financing, re-packing, barging, trucking and insurance operations.
- Rotterdam is also a major transit port for nickel containing scrap metals. Ocean going vessels import large quantities of scrap, which is then unloaded, stored, and then trans-shipped to steel mills in neighbouring European countries, such as Germany, France and Belgium. It is also used as a trans-shipment port for inter-continental trade in nickel and nickel-containing scrap. Associated scrap processing activities (sorting, blending, quality control etc) are located in close proximity.
- The nickel industry produces Euro 25 million in value-added in The Netherlands, primarily through the Rotterdam transit port and associated activities and through recycling.
- Employment in nickel-related activities in The Netherlands was approximately 300 in 2002. This includes people employed directly in recycling activities and people employed in support activities such as importation, warehousing, and logistics at Rotterdam. In addition nickel-related activities created a further 100 jobs in the economy through income and supplier “multiplier” effects and capital expenditure effects. (Each Euro of expenditure on goods and services by companies and employees in the nickel industry generates additional employment in other sectors, especially services.



4. “FIRST USE”

- The main primary uses of nickel are in the production of nickel containing alloys (stainless steel, alloy steels, non-ferrous alloys, and foundry products), nickel plating, and “other” products such as nickel cadmium batteries, chemicals, and catalysts¹.
- The “First Use” market for nickel (primary and recycled) in The Netherlands is valued at approximately Euro 10 million.
- Around 15 kte of nickel containing alloys produced in The Netherlands are *critically dependent on nickel*. These have a sales value of around Euro 50 million.
 - “First Use” industries that are critically dependent on nickel produce around Euro 35 million in value-added at this stage in the value chain.
 - In addition, Intermediaries (e.g. fabricators) produce an additional Euro 200 million in value-added.
- Employment in “First Use” industries and Intermediaries that are critically dependent on nickel is an estimated 3,300 people. This includes both the people employed directly by the “First Use” industries and those employed indirectly in activities that have been outsourced to third party suppliers. Additionally, “First Use” industries created a further 1,300 jobs in the economy through income and supplier “multiplier” effects.

5. END USE

- Nickel-containing alloys are used in a wide range of products, but our analysis is confined to those that are critically dependent on nickel.
- There are a number of critical applications of nickel where the nickel-containing alloy significantly transforms either the production process or the product. Moreover, in a number of these applications, this transformation cannot be achieved by any other means except with a substantial reduction in the performance of the product or the production process. These products are “critically dependent” on nickel. They include, for example:
 - **Process plant equipment** manufacturers (for industries such as food and drink processing, oil and gas production, petroleum refining, chemicals and pharmaceuticals) are major users of nickel. The major usage of nickel is as an alloying element of stainless steel but, in special environments such as high temperature or corrosive environments, nickel alloys are applied instead of stainless steel. Dutch companies account for 5% of this sector in the European Union.

¹ “Other” uses have been excluded from our analysis



- **The CD/DVD pressing market.** Electroformed nickel is used in the production of “stampers”, which are used to manufacture of CDs and DVDs. Plated nickel is also used in the final stages of preparing the “glass master” from which the stampers are produced. There are 26 CD/DVD pressing plants in The Netherlands, representing almost 10% of the sales of this sector in the European Union.

Electro-formed screen printing. Stork, based in Boxmeer, accounts for 80% of the EU market. Nickel is critical for the performance of the screens, where cost, size, weight and accuracy are important, particularly in the textile and carpet manufacturing industries.

End Use Segments	Sales Value Euro Million
Process Plant	520
Commercial Catering Equipment	20
Medical and Dental Instruments	75
High Precision Replication – CD/DVD Pressing	220
High Precision Replication – Screen Printing	175
Other	15
Total	1,025

Table 2: Nickel critically dependent Segments - End Use

- These “nickel dependent” end-use markets account for approximately Euro 820 million in value-added in The Netherlands. They employ around 10,000 people. In addition, they create a further 5,000 jobs in the economy through income and supplier “multiplier” effects and capital expenditure effects.



ANNEXES



Summary of the Nickel Value Chain in The Netherlands

	Value Added	Jobs	Jobs Multiplier Effect	Total Jobs	
	Euro M				
Direct Nickel Industry	25	300	120	420	Annex 1
First Use	35	470	185	655	Annex 2
Intermediaries	200	2,875	1,150	4,025	Annex 2
Product Manufacturers	820	10,500	4,200	14,700	Annex 3
Total	1,080	14,145	5,655	19,800	

ANNEX 1

DIRECT NICKEL INDUSTRY

Nickel: Direct Industry in The Netherlands

Annex 1

	(1) Sales Volume	(2) Sales Value	(3) Value Added	(4) Jobs	(5) Jobs Multiplier Effect	(6) Total Jobs	Basis of Sales Value	Basis of Added Value	Basis of Employment
	kte	Euro M	Euro M						
Mining	0.0	0	0	0	0	0	75% of LME = Eur 4750	All of sales value	See separate sheet (att 1.1)
Import of Raw Materials for Refining									
Ore concentrate	0.0	0	0	na			75% of LME= Eur 4750	No added value in Europe	No jobs created in Europe
Nickel matte and nickel oxides	0.0	0	0	na			85% of LME = Eur 5400	No added value in Europe	No jobs created in Europe
Importers Margin	0.0	0	0	0	0	0	1-2% of LME + say Eur100/te	Importers margin only	Sales per employee = Eur 200k
Smelting/Refining	0.0	0	0	0	0	0	LME = Eur 6,340/te	Sales value less mining & imports	See separate sheet (Att 1.1)
Trading and Importation									
Margin on Imports of Nickel	3.5	0	0	2	1	2	Importers Margin = 1-2% of LME	All of sales value	Sales per employee = Eur 200k
Paper trading/broking on LME	na	na	0	0	0	0			
Transport & Logistics									
Primary Nickel	3.5	0	0	4	1	5	1-2% of LME = Eur 100/te	All of sales value	Sales per employee = Eur100k
Recycled Nickel (Processors)	0.5	0	0	1	0	1	Eur 100/te for Processors Imports	All of sales value	Sales per employee = Eur100k
Additional transit port activities	200.0	13	13	130	52	182	1% of LME =Euro 65/te	All of sales value	Sales per employee = Eur100k
Recycling - Net position (7)	0.5		3	20	8	28	See separate sheet	See separate sheet	See separate sheet (Att 1.2)
Additional Recycling activities (transit)	0.0		8	135	54	189			
TOTAL			25	291	116	407			
	<i>Nickel Units</i>		<i>4</i>						

Notes

General: For the final report, all figures will be rounded.

(1) Sales Volumes based on published data and NiDI "Nickel Flows analysis. Total EU sales = 121(refined output) +304 (imports) + 293 (Recycling) = 718

(2) Sales Value = Volume *selling price (see separate column for individual assumptions)

(3) Value-added in Europe = Sales Value less sales value of previous stage in chain

(4) Jobs (Direct and Sub-Contractors) - mix of specific data (see separate sheets) and calculations based on average sales per employee data.

(5) Jobs Multiplier effect - based on an average ratio of 0.4

(6) Jobs (Direct & Sub Contracted) + Multiplier Effect

(7) Recycling sales value = value of stainless steel scrap

Mining and Refining in The Netherlands

Mining and Refining in The Netherlands

Country	Company	Location	(1) Annual Production 2002 kte	(2) Direct Jobs	(3) Sub-Contracted Jobs	Annex 1.1. Annex 1.1. Total Jobs
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Mining

No Mining in The Netherlands

Smelting/Refining

No Refining in The Netherlands

Notes

- (1) Annual production based on published data (World Nickel Statistics April 2003)
- (2) Direct Job estimates based on published sources
- (3) Sub contracted jobs: Study estimates

Recycling in The Netherlands

Annex 1.2.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Sales	Sales	Sell-Out	Sales	Value	Labour	Total	Labour	Jobs
	Volume	Volume	Price	Value	Added	Costs	Labour	Cost	
	(Ni units)	Ni based	Achieved				Costs	per person	
St Steel Scrap									
	kte	kte	Euro/te	Euro M	Euro M	Euro/te	Euro M	Euro K	
Collectors	0.1	1	704	1	1	170	0	25	8
Dismantlers	0.1	1	704	1	1	135	0	25	6
Fabricators & Service Centres Scrap	0.0	0	704	0	0	30	0	30	0
[Middlemen]	0.2	2	774	2	0	5	0	35	0
Net Imported Scrap	0.3	3	704	2	na	na			0
[Scrap Processors]	0.5	6	882	5	1	30	0	35	5
Mill Home Scrap	0.0	0	882	0	0	30	0	30	0
Total	0.5	6		5	3		1		19
Additional transit port activities	7.0	78			8	60	5	35	133
Grand Total	7.5	83.3			10.3		5.2		152.0

Notes

- (1) Based on NiDI "Nickel Flows" analysis and study estimates
(2) Assumes nickel content of 9%
(3) Estimates based on BHP Billiton study
(4) Sales Volume of Nickel based Stainless steel scrap * sell-out price achieved (Column 2 * Col 3)
(5) Sales value less previous stage in the value chain
(6) Labour cost per tonne = study estimate
(7) Sales Volume of Nickel based Stainless steel scrap * labour cost per tonne (Col 2 * Col 6)
(8) Labour cost per person = study estimate based on EU Average Production Worker rates
(9) Total labour costs / labour cost per person (Col 7 / Col 8)

ANNEX 2

FIRST USE & INTERMEDIARIES

"First Use" in The Netherlands

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	Annex 2 (12)	Notes
	<i>Nickel</i>	<i>Cost of</i>	<i>Average</i>	<i>Total Volume</i>	<i>Average Sell-out</i>	<i>Value of</i>	<i>Value</i>	<i>Value</i>	<i>Direct Jobs</i>	<i>Contracted out</i>	<i>Jobs</i>	<i>Total Employment</i>	
	<i>Units</i>	<i>Nickel Input</i>	<i>Nickel Content</i>	<i>of Metal Based on Ni</i>	<i>Price to users</i>	<i>Ni-based Sales</i>	<i>of Imports</i>	<i>Added</i>	<i>Dependent on Nickel</i>	<i>Jobs dependent on Nickel</i>	<i>Multiplier Effect</i>	<i>Dependent on Nickel</i>	
	<i>kte</i>	<i>Eur M</i>	<i>%</i>	<i>kte</i>	<i>Eur/te</i>	<i>Eur M</i>	<i>Eur M</i>	<i>Eur M</i>					
Stainless Steel	0.0	0	10.5	0	2000	0	0	0	0	0	0	0	0 (13)
Alloy Steels	0.0	0	1.5	0	600	0	0	0	0	0	0	0	0 (14)
Non-Ferrous Alloys													
Nickel Based	0.2	1	50.0	0	5000	2	0	1	7	2	3	12	(15)
Copper Based	0.1	1	15.0	1	3000	2	0	1	7	2	3	12	
Foundry	0.7	4	5.0	14	1000	14	1	8	47	14	24	85	(16)
Plating	0.4	3	na	na	na	29	3	24	336	50	155	541	(17)
[Other]	1.9	na	na	na	na	na	na	na	na	na	na	na	(18)
TOTAL	3.3	9		15		47	5	34	396	68	186	650	
[Intermediaries]	na	na	na	na	na	na	na	200	2500	375	1150	4025	(19)
GRAND TOTAL	3.3	9		15		47	5	234	2896	443	1336	4675	

Notes

General - all data will be rounded in final report

(1) As per published data

(2) Volume x LME (Euro 6340)

(3) NiDI broad estimates

(4) Nickel units/nickel content x 100

(5) NiDI broad estimate

(6) Total volume based on nickel x average sell out price of metal to its users

(7) Estimated value of other (non-nickel) imports e.g. chrome

(8) Value of nickel based sales less cost of nickel input less cost of other imported inputs

(9) Value of nickel based sales/sales per employee

(10) Assumes ratio of direct to indirect jobs of 0.5 (BSSA estimate)

(11) Assumes overall average multiplier of 0.4

(12) Direct jobs + contracted out jobs+ Multiplier effect

(13) Total Volume of Stainless Steel = published figure. Sales per employee based on review of major Stainless companies

(14) Estimated Sales per employee

(15) Estimated Sales per employee

(16) Estimated Sales per employee

(17) Plating - see separate sheet

(18) Other = not part of Phase One review

(19) Intermediaries - see separate sheet

Stainless Steel and Alloy Intermediaries in The Netherlands: Summary Annex 2.1.1.

	Direct Jobs	Value-Added (Eur M)
Stainless Steel		
Distributors	1524	137
Fabricators	519	37
Metal Formers	267	12
Surface Engineering	112	11
<i>Sub-total</i>	2422	197
Alloy Steels		
Distributors	33	3
<i>Sub-total</i>	33	3
Non-Ferrous Alloys	0	0
<i>Sub-total</i>	0	0
Total	2455	200

Intermediaries in The Netherlands - Distributors

Annex 2.1.1.

	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	<i>Indirect Sales</i>	<i>Purchase Cost</i>	<i>Purchase Cost</i>	<i>Gross Margin</i>	<i>Sell-out Price</i>	<i>Sales Value</i>	<i>Value Added</i>	<i>Employment</i>	<i>Employment</i>
	<i>(kte)</i>	<i>(Euro te)</i>	<i>(Euro M)</i>	<i>(% sales)</i>	<i>(Euro te)</i>	<i>(Euro M)</i>	<i>(Euro M)</i>	<i>Sales per man</i>	<i>Direct Jobs</i>
Stainless Steel	160	2000	320	30	2857	457	137	300	1524
Alloy Steels	10	700	7	30	1000	10	3	300	33
Non-Ferrous Alloys	0	N/A	0	N/A	N/A	0	0	300	0
TOTAL	170		327		3857	467	140		1557
<i>Indirect Sales (1)</i>	<i>Consumption</i>	<i>Indirect Sales</i>	<i>Indirect Sales</i>						
	<i>(kte) (2)</i>	<i>(%)</i>	<i>(kte)</i>						
<u>Stainless Steel</u>									
France	477	60	286						
Germany	1350	50	675						
Italy	1376	50	688						
Spain	431	60	259						
UK	289	75	217						
Other Europe	700	80	560						
The Netherlands	200	80	160						
Total	4823	60	2845						
<u>Alloy Steels</u>									
France	360	25	90						
Germany	1240	25	310						
Italy	613	25	153						
Spain	40	25	10						
UK	100	25	25						
Other Europe	137	25	34						
The Netherlands	40	25	10						
Total EU	2530	25	633						
<u>Non-Ferrous Alloys</u>									
EU		0	0						

Notes

General - all data will be rounded in the final report

Valuation - Stainless steel distributors serve smaller customers, providing product availability, break of bulk and inventory services. They are specialist businesses - C. 85-90% of sales are stainless steel. Although not all stainless steel includes nickel, the specialist nature of these businesses and their dependency on stainless steel means that the overall economics of the business depends on nickel. The valuation is based on a whole-business approach. Similar arguments apply to distributors of alloy steels

(1) Figures for indirect sales by country and for each main metals sector are BSSA broad estimates

(2) INCO data and NiDI estimate

(3) NiDI broad estimates

(4) Indirect sales x purchase cost per te (col 2 x col 3)

(5) BSSA broad estimate

(6) Based on estimated gross margin (raw material cost is purchase cost of metal - distributors take ownership) and purchase cost

(7) Indirect sales x sales price per te (col 2 x col 6)

(8) Sales value minus metal cos. Metal costs are sell-out prices from stainless steel and alloy producers. Value added by these sales has been accounted for elsewhere in the value chain.

(9) Study estimate based on discussions with BSSA and assessment of activities, gross margin and relative importance of different key inputs (labour, capital, ideas)

(10) Sales divided by revenues per man (col 7 / col 9)

Intermediaries in The Netherlands - Fabricators, Metal Formers & Surface Engineering companies (1)

Annex 2.1.2.

	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Intermediary Type	Market Size (% SSteel Consumption)	Market Size (kte)	Purchase Cost (Euro M)	Gross Margin (%)	Engineering Charge (% metal cost)	Sell-out Price (Euro te)	Sales Value (Euro M)	Value Added (Euro M)	Sales per employee (Euro '000)	Employment Direct Jobs
Fabricators	10	20	56	40	N/A	4667	93	37	180	519
Metal Formers	5	10	28	30	N/A	4000	40	12	150	267
Surface Engineering (2)	10	20	0	N/A	20	N/A	11	11	100	112
Total	25	50	2026				145	61		897

Stainless Steel Consumption (kte)

France	477
Germany	1350
Italy	1376
Spain	431
UK	289
The Netherlands	200
Other Europe	700
Total	4823
<i>Purchase cost from distributors (Euro/te)</i>	<i>2800</i>

Notes

General - all data will be rounded in the final report

Valuation - all employment and value-added is based on an income-stream basis because these types of business tend to be multi-material and stainless steel is not the dominant part of their business. It is assumed that non-nickel based stainless steel use in these sectors is not material

(1) These sectors are assumed to be limited to stainless steel only

(2) These business do not take ownership of the metal. They charge for a service, including material costs. Charges are based on a % of metal value

(3) BSSA broad estimate

(4) EU stainless steel consumption x % penetration

(5) All materials are supplied from distributors. Purchase costs equals market size (kte) x distributor sell out price (Euro 2,800)

(6) BSSA broad estimate

(7) BSSA broad estimate

(8) Based on gross margin (%) and purchase cost

(9) Market size (kte) x sell out price for Fabricators and Metal Formers (col 3 x col 7). Engineering charge rate x distributor supply price x market size (kte) for Surface Engineering

(10) Sales value less purchase cost of metal (col 8 - col 4)

(11) Study estimate based on discussions with BSSA, activities performed, margins, and relative importance of key inputs (labour, capital, and ideas)

(12) Sales value divided by sales per employee

Nickel Use in the Plating Sector in The Netherlands

Annex 2.2.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Plating Sectors	<i>Nickel Units (kte)</i>	<i>Cost of Nickel Input (Euro M)</i>	<i>Plating Charge (% of nickel input cost)</i>	<i>Nickel Plating Revenues (Euro M)</i>	<i>Non-EU Costs (Eur M)</i>	Value Added (Eur M)	<i>Sales per employee Euro '000s</i>	Employment Direct Jobs
Engineering	0.1	1	5	13	1	11	85	149
Decorative	0.3	2	12	16	2	12	85	187
TOTAL	0.4	3		29	3	23		336
<i>Nickel Price (Euro te)</i>	6,350							

Notes

General - all data will be rounded in the final report

Plating sector - NiDI estimate that there are c. 6,000 independent plating companies in the EU (4,000 'formal' - members of trade associations; and 2,000 'informal'). Of these businesses only 1,500 carry out some form of nickel plating: 750 'formal' and 750 'informal'. Nickel plating is carried out by independents and in-house plating shops. 80% of nickel plating shops are independents and 20% in-house. If this is taken into account then there are c. 1,875 nickel plating shops in the EU - 1,500 independent, and 375 in-house

Valuation basis - for plating shops that carry out nickel plating it represents 30-50% of sales. We have valued only the nickel-based revenues and jobs linked to them i.e. an income stream approach rather than a whole-business approach

(1) NiDI estimate of sector consumption x use by sector

(2) Nickel price per te x consumption of nickel

(3) Plating companies do not take ownership of metal parts: they charge for a service, including costs of raw materials consumed. NiDI broad estimate of relationship between costs of nickel and final plating charge. These are point estimates derived from ranges: engineering 2-10%; and decorative 10-15%.

(4) Grossed up from cost of nickel as % of total revenues

(5) Study estimate of costs from non-nickel costs from suppliers outside the EU. Estimate is 10% of revenues

(6) Sales revenues less nickel cost and non-EU costs

(7) Study estimate based on relative use of critical resources (capital, labour, ideas) to add value within typical plating shops

(8) Plating revenues divided by sales per person i.e. an income stream approach rather than a whole-business valuation

ANNEX 3

END USE

Product Manufacturers in The Netherlands that are Nickel Dependent

Annex 3

	(1) Total End-User Sales Value	(2) Sales Per Employee	(3) Direct Employment in Product Manufacturers	(4) Contracted out Jobs	(5) Employment Multiplier Effect	(6) Total Employment
	Euro M	Euro K				
<i>Nickel Dependent Segments</i>						
Automotive Diesel Turbo Chargers	0	120	0	0	0	0
Aerospace - Jet Engines	0	220	0	0	0	0
Gas Turbines	0	220	0	0	0	0
Process Plant in Food and Drink Industry	250	100	2500	750	1300	4550
Process Plant in Oil and Gas Production	35	150	233	70	121	425
Process Plant in Petroleum Refining	45	150	300	90	156	546
Process Plant in Chemicals	120	150	800	240	416	1456
Process Plant in Pharmaceuticals	80	100	800	240	416	1456
Commercial Catering Equipment *	20	85	235	71	122	428
Beer Kegs	0	100	0	0	0	0
Medical & Dental Instruments and Hospital Equipment	75	200	375	113	195	683
High Precision replication - CD & DVD pressing	220	130	1692	508	880	3080
High precision replication - textile & wallpaper printing	175	150	1167	350	607	2123
TOTAL	1020		8103	2431	4213	14747

Value-Added Analysis

Total End User Market Value	1020
less Ni Stainless Steel/alloy value & other imported raw materials	204
equals Value-added by Product Manufacturers	816

Notes

- General - All numbers will be rounded for final report
(1) Derived from wide variety of sources (see separate sheet)
(2) Based on review of relevant company accounts plus study estimates
(3) Total End User market value / sales per employee
(4) Study Estimate
(5) Assumed to be 0.4 average income and supplier multiplier
(6) Direct employment + Contracted out activities + Multiplier effect

