

# ICF NEWS

Issue 48 | June 2004

## THE MAJOR OEMS RANKED BY COPPER WIRE & CABLE CONSUMPTION IN 2002

| Company             | Cable (kt) | Home Base     | Business Group               | Main Business Area   |
|---------------------|------------|---------------|------------------------------|--|
| Yazaki Corp.        | 269        | Japan         | intermediates                | automotive parts, wire & cable   |
| Siemens A.G.        | 211        | Germany       | electrical/electronic equip. | power & automation, telecom equipment, transport equipment                   |
| General Motors      | 187        | United States | automotive assembly          | automotive assembly  |
| Hitachi Ltd.        | 182        | Japan         | electrical/electronic equip. | electrical/ electronic equipment, industrial equipment, wire & cable         |
| Emerson Electric    | 173        | United States | intermediates                | motors & systems   |
| Ford                | 158        | United States | automotive assembly          | automotive assembly  |
| Delphi Corporation  | 142        | United States | intermediates                | automotive parts, wire & cable   |
| DaimlerChrysler     | 128        | United States | automotive assembly          | automotive assembly  |
| General Electric    | 120        | United States | electrical/electronic equip. | power systems, aircraft engines, industrial & consumer electrical, financial |
| Matsushita Electric | 100        | Japan         | electrical/electronic equip. | consumer & industrial electronic equipment                                   |
| Volkswagen          | 86         | Germany       | automotive assembly          | automotive assembly  |
| Hewlett Packard     | 79         | United States | electrical/electronic equip. | computers & peripherals  |
| Dell Inc.           | 78         | United States | electrical/electronic equip. | computers  |
| Mitsubishi Electric | 78         | Japan         | electrical/electronic equip. | power & automation systems, electrical /electronic equipment                 |
| United Technologies | 70         | United States | electrical/electronic equip. | air conditioners, aerospace, elevators                                       |
| Honda Motor         | 69         | Japan         | automotive assembly          | automotive assembly  |
| Nissan Motor        | 60         | Japan         | automotive assembly          | automotive assembly  |
| Sony Corp.          | 60         | Japan         | electrical/electronic equip. | electronic, entertainment  |
| Toshiba Corp.       | 59         | Japan         | electrical/electronic equip. | Consumer & industrial electrical & electronic equipment                      |
| Peugeot Citroën     | 59         | France        | automotive assembly          | automotive assembly  |
| Samsung Electronics | 51         | S.Korea       | electrical/electronic equip. | consumer & industrial electronic products                                    |
| Denso Corporation   | 50         | Japan         | intermediates                | automotive radiators & other parts   |
| Electrolux          | 50         | Sweden        | electrical/electronic equip. | domestic & professional electrical appliances                                |
| Whirlpool Corp.     | 47         | United States | electrical/electronic equip. | electrical appliances  |
| IBM Corp.           | 45         | United States | electrical/electronic equip. | electronic equipment   |
| BMW                 | 44         | Germany       | automotive assembly          | automotive assembly  |
| ABB AB              | 42         | Switzerland   | electrical/electronic equip. | power & automation technologies  |
| Fiat                | 41         | Italy         | automotive assembly          | automotive assembly  |
| Philips Electronics | 40         | Netherlands   | electrical/electronic equip. | electrical equipment, electronic equipment                                   |

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#### **I.C.F**

P.O.BOX 26  
Graben 30  
A-1014 Wien  
Austria

**Phone** +43-1-532 96 40

**Fax** +43-1-532 97 69

**Web** [www.icf.at](http://www.icf.at)

**Contact** [renate@icf.at](mailto:renate@icf.at)

The ICF Newsletter is published several times each year by the **International Cablemakers Federation**.

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# ICF NEWS

## NEW MEMBER

We are pleased to welcome **ACOME** as new member of our Federation. Information about **ACOME's** activities can be found on their website under [www.assume.fr](http://www.assume.fr)

## ICF CONGRESS 6<sup>th</sup> TO 10<sup>th</sup> OCTOBER 2004 IN PRAGUE

This year's Congress will be held at the Hotel InterContinental in Prague, located in the heart of the city, close to the Old Town Square and within walking distance to many other attractions. Invitations have been sent to all members and we would like to ask you to support our work by registering before 16 July 2004.

The topics presented at this year's Congress are:

- \_ Investment Opportunities in Power Networks
- \_ Opportunities for Cablemakers in the Oil & Gas Industry and
- \_ Market & Technology in Broadband Access

The Business Session will be complemented by a keynote speech on the Enlargement of the European Union, a presentation on the current metal supply situation and the Industry Outlook Round Table with distinguished members of ICF Council. Renate Mück is busily working on the social parts of the Congress which we will inform you about as soon as all arrangements are finalized.

Thanks to the excellent work of the members of the ICF Standing Commission headed by Hans Meiring it has already been possible to engage high-level presenters for basically all Business Sessions. A key to a successful Congress is of course the attendance itself and the Secretariat would like to encourage members to support the Prague event by sending their most senior management to this unique and international forum which the ICF Congress offers.

## ICF WEBSITE

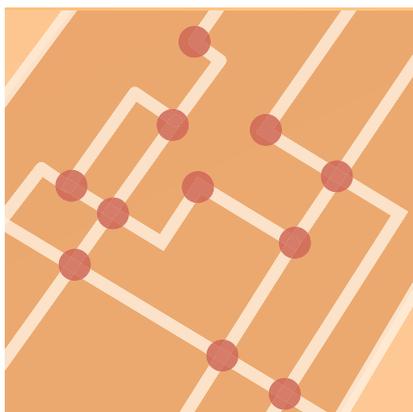
Unfortunately we have not been able to meet our target of end of April for our new website. We have however made very good progress and we are reasonably optimistic that we can present our work to you in the coming weeks. Please note that due to ongoing work our current website might not be available at all times.

Thomas Neesen



# OEM WIRE AND CABLE BUYERS

## IMPORTANCE, STRUCTURE AND PERFORMANCE



OEM business forms one of the three generic end use markets for wire and cable, alongside Building Construction and Infrastructure. The term »OEM« (»Original Equipment Manufacturer«) applies to the market for wire and cable within the manufactured products of other companies.

Much of the data content of this article is based on Metalica's Copper Consumption Database, developed in collaboration with the International Copper Association (ICA).

... an undervalued sector ...

As the OEM business is almost exclusively a market for copper cable, the copper figures which are presented for 2002 are fairly definitive for this sector of the cable industry.

While the OEM sector is clearly of major significance as a consumer of cable, it is often undervalued by the major cable-makers unless they are OEM specialists. In most cases they tend to focus on the infrastructure and/or the building construction markets. In our report we

identify the size of the OEM business, the main business areas within it, the identity of the main OEM consumers and the role of cable within their business profile.

### Size of the OEM Business

In our analysis of the markets for cable, we look at the business by applying a nine cell products / application matrix with three product groups on one axis (energy cable, telecom/data cable and winding wire),

**OEM & General Market at US\$ 21.3 billion**

and three application groups on the other (»Infrastructure«, »Building Construction«, and »OEM & General«).

In the table on page four we show our estimate of the global OEM & General market for wire and cable in 2003 at 3.78 mio tonnes of conductor equivalent or 31.5% of total market volume. The term »conductor equivalent« is used as fibre optic cable is included at the notional equivalent of 80 fkm equals one tonne of conductor.

The relative importance of the OEM & General market becomes even more apparent if value rather than volume is taken as a measure. We estimate the segment's market value in 2003 at US\$21.3 billion, or 33.0% of the entire wire and cable market. The value is high, despite the large share of low-priced winding wire consumed, because of the high value of many of the insulated wire and cable products used in the OEM & General market.

As can be seen from the table, energy cable products account for the lion's share of OEM & General wire and cable consumption, although winding wire is also very important. Data cable, though significant, has a much smaller share. The energy cable products concerned include primarily wires linking components within items of machinery and leads linking machines to the electricity outlet.

While our three-tier division of the wire and cable market into generic application groups is useful, it does not tell the whole story about the OEM sector. We break down the OEM & General sector into four application subgroups, labelled »Transport«, »Industrial Equipment«, »Other Equipment« and the »General Market«. The first three subgroups, which are roughly equivalent in size, form true OEM markets, where wire and cable is incorporated within items of assembled machinery.

The »General Market« is rather different. We define the General Market to include items that are not incorporated within machinery and are not destined for the Infrastructure or Building Construction markets. This group includes products such as extension cords that have intrinsic value in their own right, and products that form part of an aftermarket relating to OEM equipment. Winding wire sold for rewinding is the prime example of the latter, although there is also a large aftermarket for automotive insulated wire and cable.

As the General Market cannot really be considered to be part of the OEM group, its estimated US\$ 2.11 billion market size should be subtracted from the OEM mar-

## THE ROLE OF OEM IN WIRE & CABLE'S APPLICATIONS MATRIX (2003)

### Market Volume (conductor weight equivalent)

|                              | Conductor Weight Equiv ('000 t) |             |             |              | Percentage   |              |              |               |
|------------------------------|---------------------------------|-------------|-------------|--------------|--------------|--------------|--------------|---------------|
|                              | Energy                          | Telecom     | Winding     | Total        | Energy       | Telecom      | Winding      | Total         |
| <b>Infrastructure</b>        | <b>1,92</b>                     | <b>1,37</b> | <b>0,45</b> | <b>3,74</b>  | <b>16,0%</b> | <b>11,4%</b> | <b>3,8%</b>  | <b>31,1%</b>  |
| Telecom                      | 0,02                            | 1,29        | 0,02        | 1,33         | 0,1%         | 10,8%        | 0,2%         | 11,1%         |
| Power                        | 1,71                            | 0,03        | 0,38        | 2,11         | 14,2%        | 0,2%         | 3,1%         | 17,6%         |
| Other                        | 0,19                            | 0,04        | 0,05        | 0,29         | 1,6%         | 0,3%         | 0,4%         | 2,4%          |
| <b>Building Construction</b> | <b>3,73</b>                     | <b>0,46</b> | <b>0,31</b> | <b>4,50</b>  | <b>31,0%</b> | <b>3,8%</b>  | <b>2,6%</b>  | <b>37,4%</b>  |
| <b>OEM &amp; General</b>     | <b>2,09</b>                     | <b>0,17</b> | <b>1,53</b> | <b>3,78</b>  | <b>17,4%</b> | <b>1,4%</b>  | <b>12,7%</b> | <b>31,5%</b>  |
| Transport                    | 0,81                            | 0,02        | 0,37        | 1,20         | 6,7%         | 0,2%         | 3,1%         | 10,0%         |
| Industrial Equipment         | 0,45                            | 0,05        | 0,49        | 0,99         | 3,8%         | 0,4%         | 4,1%         | 8,3%          |
| Other Equipment              | 0,59                            | 0,09        | 0,47        | 1,14         | 4,9%         | 0,7%         | 3,9%         | 9,5%          |
| General Market               | 0,24                            | 0,01        | 0,20        | 0,45         | 2,0%         | 0,1%         | 1,7%         | 3,8%          |
| <b>Total</b>                 | <b>7,73</b>                     | <b>2,00</b> | <b>2,29</b> | <b>12,02</b> | <b>64,3%</b> | <b>16,6%</b> | <b>19,0%</b> | <b>100,0%</b> |

### Market Value (US\$ billion)

|                              | Value (US\$ mn) |              |             |              | Percentage   |              |              |               |
|------------------------------|-----------------|--------------|-------------|--------------|--------------|--------------|--------------|---------------|
|                              | Energy          | Telecom      | Winding     | Total        | Energy       | Telecom      | Winding      | Total         |
| <b>Infrastructure</b>        | <b>10,96</b>    | <b>9,98</b>  | <b>1,33</b> | <b>22,27</b> | <b>17,0%</b> | <b>15,5%</b> | <b>2,1%</b>  | <b>34,6%</b>  |
| Telecom                      | 0,11            | 9,33         | 0,08        | 9,51         | 0,2%         | 14,5%        | 0,1%         | 14,8%         |
| Power                        | 9,69            | 0,27         | 1,10        | 11,05        | 15,0%        | 0,4%         | 1,7%         | 17,2%         |
| Other                        | 1,17            | 0,37         | 0,16        | 1,70         | 1,8%         | 0,6%         | 0,2%         | 2,6%          |
| <b>Building Construction</b> | <b>14,74</b>    | <b>5,21</b>  | <b>0,91</b> | <b>20,85</b> | <b>22,9%</b> | <b>8,1%</b>  | <b>1,4%</b>  | <b>32,4%</b>  |
| <b>OEM &amp; General</b>     | <b>14,52</b>    | <b>1,82</b>  | <b>4,92</b> | <b>21,26</b> | <b>22,6%</b> | <b>2,8%</b>  | <b>7,6%</b>  | <b>33,0%</b>  |
| Transport                    | 5,64            | 0,23         | 1,29        | 7,15         | 8,8%         | 0,4%         | 2,0%         | 11,1%         |
| Industrial Equipment         | 3,12            | 0,56         | 1,45        | 5,13         | 4,8%         | 0,9%         | 2,3%         | 8,0%          |
| Other Equipment              | 4,37            | 0,91         | 1,59        | 6,87         | 6,8%         | 1,4%         | 2,5%         | 10,7%         |
| General Market               | 1,39            | 0,13         | 0,59        | 2,11         | 2,2%         | 0,2%         | 0,9%         | 3,3%          |
| <b>Total</b>                 | <b>40,22</b>    | <b>17,01</b> | <b>7,16</b> | <b>64,38</b> | <b>62,5%</b> | <b>26,4%</b> | <b>11,1%</b> | <b>100,0%</b> |

ket. Counterbalancing this, a portion of product that is eventually used in either Infrastructure or Building Construction but which is also incorporated within items of manufactured equipment goes through OEM buyers. Although we have not included these within our »OEM« classification in the products / application matrix shown, it is appropriate to do so when looking at the importance of OEM customers to the wire and cable industry.

So, how large is the OEM component within the Infrastructure and Building Construction end use groupings? We suggest that all winding wire in these groups may alternatively be defined as an OEM product. This group includes utility, non-utility generators, transformers and lamp ballast as its main components. With the comparatively small amount of energy and information cable going into manufactured goods used in Infrastructure and Building Construction, we estimate the total non

the OEM Business is intrinsically multinational

»OEM & General« business that goes through OEM buyers at about US\$2.5 billion. Including this, and taking out General Market wire and cable use, gives us a total of around US\$21.7 billion of cable products sold to OEM buyers. This represents nearly 34% of the entire wire and cable industry.

**Structure of the OEM Market**

The OEM business is quite different in structure from Infrastructure and Building Construction. Whereas the latter two groups tend to be local in nature (despite the emergence of multi-national power and telecom utilities and electrical distributors), the OEM business is intrinsically multi-national. The world's largest fifty OEM's which account for the lion's share of the entire market, are mostly organised on a global or at least multi-regional scale. This means that customers have a manufacturing presence in more than one country,

»Intermediates and Assembly Sectors«

differentials in production cost and logistics are being given at least equal weight in the choice of location as local market presence, often much more. The sale of the finished assembled products is often at some considerable distance from the point of assembly.

Another key feature of the OEM business is its multi-tier structure. Manufacturing is not simply a process of collecting together raw materials, processing them and producing final goods. The manufacturers of complex products typically assemble many items that have themselves

gone through a manufacturing process by companies that may or may not be close by and to which they may or may not have corporate links. It is therefore valid to look at the OEM business in two categories: the »intermediates« sector and the »assembly« sector.

»Intermediates« producers are companies that make manufactured goods with little or no value other than their ability to be incorporated within items of manufactured equipment produced by someone else. The prime example of an intermediate in insulated wire and cable is the automotive (or other) wire harness. For winding wire, most processing goes through an intermediates stage, primarily through motor manufactures.

We have identified two groups of »assembly« companies. Firstly, the automotive group which form a clearly recognisable sub-market for OEM goods.

The home base of really large OEMs is still in the United States, Western Europe and Japan but...

Secondly, there is what we have defined as the »electrical / electronic equipment« group. In reality this latter group, account-

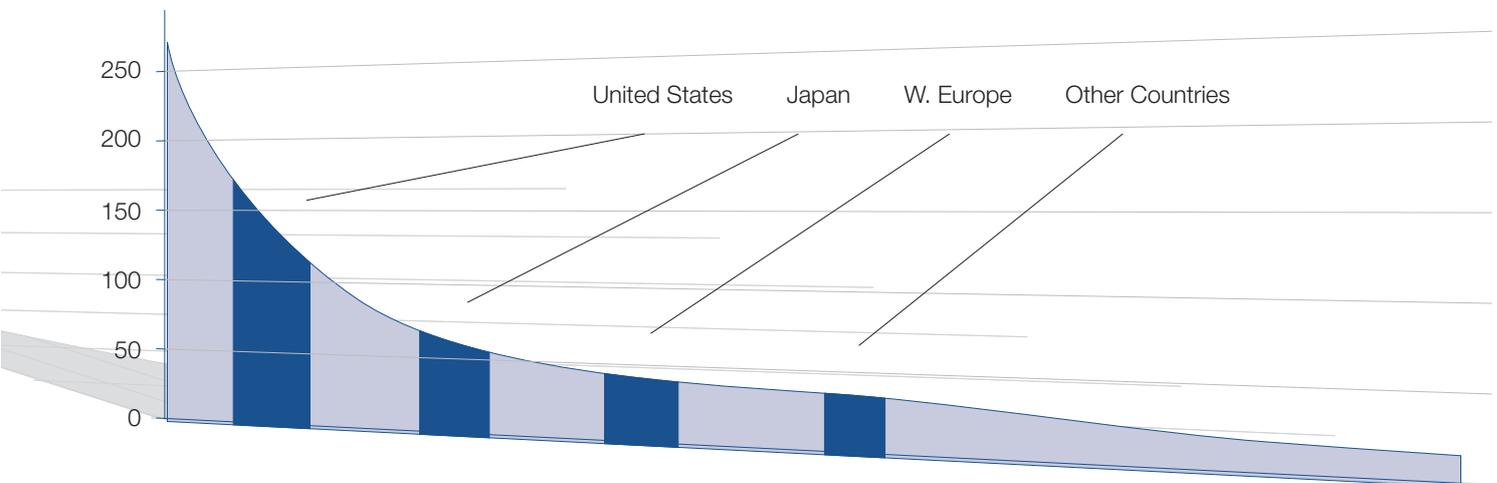
ing for over two-thirds of the OEM assembly market, includes many different types of product. We have put them together in one category because the assembly companies involved tend to make a range of products, with their areas of expertise overlapping to such an extent that it is not possible to define separate business groups.

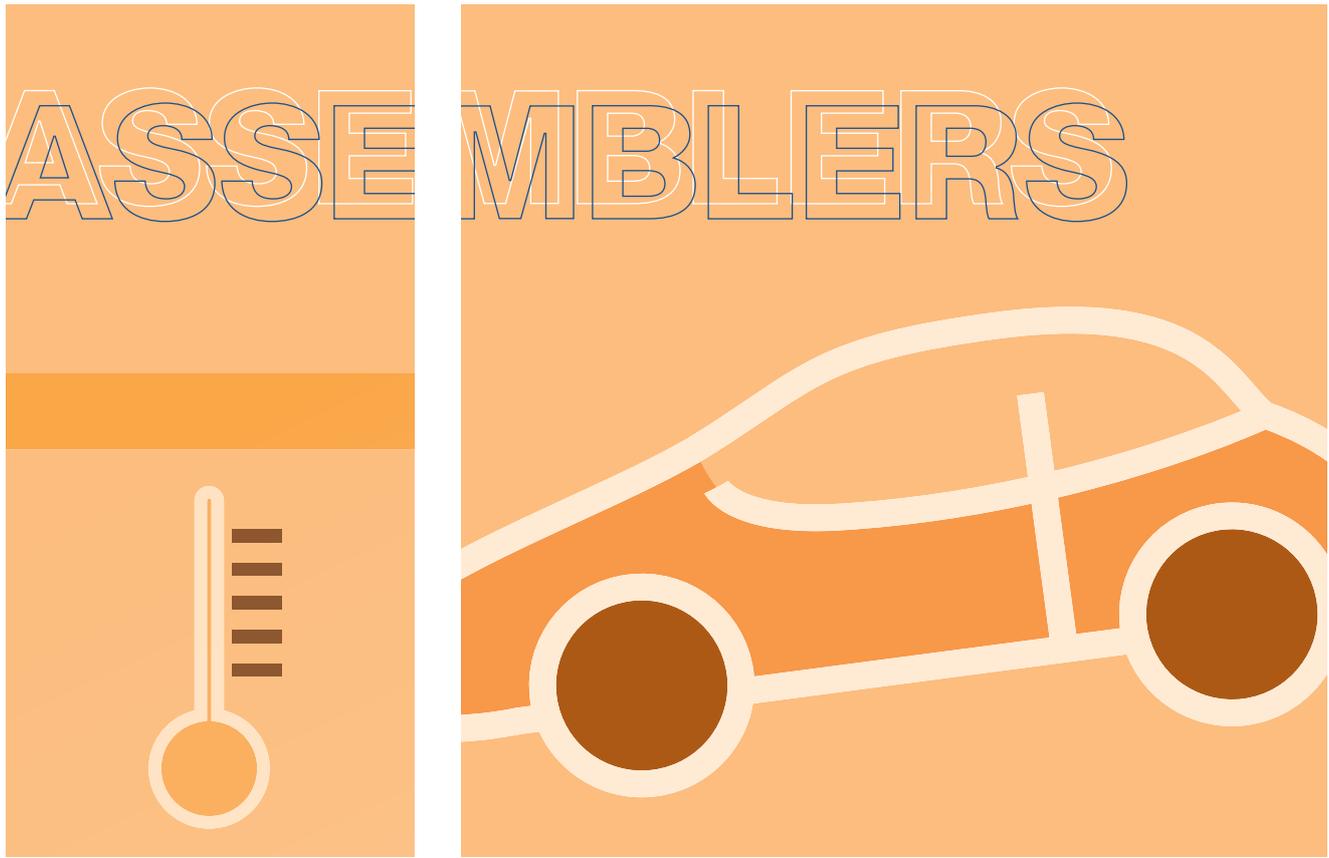
The home base of most of the really large OEMs is still in the mature markets for industrial and consumer goods, namely the United States, Western Europe and Japan. However, this picture is beginning to change, with Korean companies being well established in the ranking and more recently companies from China and one from Brazil entering the list. Despite this, the dominant position of the biggest existing OEMs in their home markets remains and many have managed to penetrate emerging markets successfully, thus ensuring their continued presence at the top of the OEM ranking.

**Which are the Major OEMs?**

In the discussion above we refer to the top OEMs for wire and cable. It is perhaps relevant to make a note on how we define them.

**GEOGRAPHICAL HOME BASE OF THE MAJOR OEMS**  
'000 tonnes copper conductor





We have attempted to rank OEM buyers of wire and cable by the amount of wire and cable that passes through their factories. Where cable passes through more than one process phase in a company, it is counted only once to avoid double counting. It should be noted that the top OEMs include companies that make wire and cable, some of which is for external sale. This is included in the wire and cable »pass through« figure, and thus, companies such as Yazaki and Hitachi Ltd. (with its subsidiary Hitachi Cable) are artificially pushed up the rankings. Other companies, which we have deemed to be primarily cable companies rather than OEMs, such as Sumitomo Electric, have not been included on the list.

Our estimates as to the amount of wire and cable passing through the OEMs are based in part on direct company information. However, even where company information is available, the actual figure is often unknown, cable being taken in

different assembled forms and often through distinct purchasing channels.

**Top 51 OEM Assemblers account for US\$ 16.2 billion or almost 80% of total OEM business**

In most cases, the volume figures are calculated. Our calculation is based on the product mix made at each OEM and the business units within it, taking an assumed cable content figure of each item or group of items of manufactured product.

Our OEM rankings table, derived by this procedure, shows that there is no clear pattern as to the business area of the main OEM companies. The top ten ranked companies, each taking 100,000 tonnes or more of conductor in cable in 2002, include automotive assembly companies, electrical and electronic equipment companies and makers of intermediate products. Motor makers

tend to come lower down the ranking than automotive parts companies.

In our listing of the top OEM consumers of wire and cable, we identify a total market of slightly over 3.7 million tonnes conductor, with an estimated value of US\$21.1 billion in 2002. As this figure is nearly as high as the US\$21.7 billion total of cable estimated as going to the OEM sector in 2003, some explanation is required. The apparent anomaly reflects the fact that a large proportion of OEM cable is purchased twice, firstly by the companies that make intermediate products such as wire harnesses or motors, then by the OEM assemblers. Taking the OEM assemblers alone, we estimate the value of the wire and cable passing through the top 51 companies identified at US\$16.2 billion in 2002. This is equivalent to slightly less than 80% of the entire OEM business, much of the remainder being fragmented between small, regional consumers.

## OEM ASSEMBLERS PERFORMANCE AND THE IMPORTANCE OF WIRE & CABLE (2002)

|  | Financial Performance<br>(US\$ bn) |                  |                 |                     | Copper Cable Use<br>('000t conductor) |                   |                 |                | Approx. Cable<br>Value | Ratios of<br>Cable to Sales   |                                  |  |
|--|------------------------------------|------------------|-----------------|---------------------|---------------------------------------|-------------------|-----------------|----------------|------------------------|-------------------------------|----------------------------------|--|
|  | Net<br>Sales                       | Cost of<br>Sales | Gross<br>Profit | Operating<br>Profit | Energy<br>Cable                       | Tel/Data<br>Cable | Winding<br>Wire | Total<br>Cable | (US\$'000)             | t conductor/<br>US\$ mn sales | US\$'000 cable/<br>US\$ mn sales |  |
| <b>Automotive Assembly</b>             |                                    |                  |                 |                     |                                       |                   |                 |                |                        |                               |                                  |  |
| General Motors                         | 186.8                              | 153.3            | 33.4            | -0.4                | 129                                   | 3                 | 56              | 187            | 1105                   | 1.0                           | 5.9                              |  |
| Ford                                   | 162.6                              | 128.4            | 34.2            | 0.3                 | 108                                   | 2                 | 47              | 158            | 930                    | 1.0                           | 5.7                              |  |
| DaimlerChrysler                        | 141.0                              | 114.5            | 26.5            | 6.5                 | 88                                    | 2                 | 38              | 128            | 758                    | 0.9                           | 5.4                              |  |
| Volkswagen                             | 81.9                               | 69.9             | 12.0            | 4.5                 | 59                                    | 1                 | 26              | 86             | 505                    | 1.0                           | 6.2                              |  |
| Honda Motor                            | 65.4                               | 44.4             | 21.0            | 5.7                 | 47                                    | 1                 | 20              | 69             | 405                    | 1.1                           | 6.2                              |  |
| Nissan Motor                           | 56.0                               | 40.0             | 16.0            | 6.0                 | 41                                    | 1                 | 18              | 60             | 352                    | 1.1                           | 6.3                              |  |
| Peugeot Citroën                        | 49.9                               | 37.9             | 12.0            | 2.4                 | 40                                    | 1                 | 18              | 59             | 348                    | 1.2                           | 7.0                              |  |
| BMW                                    | 39.9                               | 29.7             | 10.1            | 3.2                 | 31                                    | 0                 | 13              | 44             | 257                    | 1.1                           | 6.4                              |  |
| Fiat                                   | 52.4                               | 45.8             | 6.6             | -0.7                | 27                                    | 0                 | 14              | 41             | 234                    | 0.8                           | 4.5                              |  |
| Renault S.A.                           | 34.2                               | 26.6             | 7.7             | 1.1                 | 26                                    | 1                 | 11              | 38             | 227                    | 1.1                           | 6.6                              |  |
| Mitsubishi Motors                      | 31.9                               | 25.9             | 5.9             | 0.7                 | 26                                    | 1                 | 11              | 37             | 219                    | 1.2                           | 6.9                              |  |
| Hyundai Motor                          | 38.5                               | 28.3             | 10.1            | 2.5                 | 25                                    | 1                 | 11              | 36             | 212                    | 0.9                           | 5.5                              |  |
| Mazda Motor                            | 19.4                               | 14.2             | 5.2             | 0.3                 | 13                                    | 0                 | 6               | 19             | 113                    | 1.0                           | 5.8                              |  |
| Suzuki Motor                           | 16.5                               | 12.2             | 4.3             | 0.6                 | 13                                    | 0                 | 6               | 19             | 110                    | 1.1                           | 6.6                              |  |
| <b>Subtotal</b>                        | <b>976.4</b>                       | <b>771.2</b>     | <b>205.2</b>    | <b>32.7</b>         | <b>672</b>                            | <b>14</b>         | <b>294</b>      | <b>980</b>     | <b>5773</b>            | <b>1.0</b>                    | <b>5.9</b>                       |  |
| <b>Electrical/Electronic Equipment</b> |                                    |                  |                 |                     |                                       |                   |                 |                |                        |                               |                                  |  |
| Siemens A.G.                           | 79.2                               | 57.3             | 21.9            | 2.3                 | 86                                    | 11                | 115             | 211            | 1077                   | 2.7                           | 13.6                             |  |
| Hitachi Ltd.                           | 67.2                               | 51.2             | 16.0            | 1.3                 | 105                                   | 16                | 62              | 182            | 1095                   | 2.7                           | 16.3                             |  |
| General Electric                       | 131.7                              | 98.6             | 33.1            | 18.9                | 86                                    | 10                | 24              | 120            | 780                    | 0.9                           | 5.9                              |  |
| Matsushita Electric                    | 60.7                               | 43.7             | 17.0            | 1.0                 | 35                                    | 5                 | 60              | 100            | 490                    | 1.6                           | 8.1                              |  |
| Hewlett Packard                        | 56.6                               | 41.4             | 15.2            | 1.0                 | 46                                    | 7                 | 26              | 79             | 476                    | 1.4                           | 8.4                              |  |
| Dell Inc.                              | 35.4                               | 29.1             | 6.3             | 2.8                 | 45                                    | 6                 | 27              | 78             | 463                    | 2.2                           | 13.1                             |  |
| Mitsubishi Electric                    | 29.9                               | 22.8             | 7.0             | 29.3                | 39                                    | 8                 | 31              | 78             | 455                    | 2.6                           | 15.3                             |  |
| United Technologies                    | 28.0                               | 20.2             | 7.8             | 3.3                 | 9                                     | 1                 | 60              | 70             | 267                    | 2.5                           | 9.6                              |  |
| Sony Corp.                             | 61.3                               | 40.8             | 20.5            | 1.5                 | 36                                    | 5                 | 18              | 60             | 367                    | 1.0                           | 6.0                              |  |
| Toshiba Corp.                          | 46.4                               | 34.0             | 12.4            | 0.9                 | 27                                    | 2                 | 30              | 59             | 308                    | 1.3                           | 6.6                              |  |
| Samsung Electronics                    | 47.6                               | 29.5             | 18.1            | 7.4                 | 26                                    | 3                 | 23              | 51             | 278                    | 1.1                           | 5.8                              |  |
| Electrolux                             | 13.8                               | 10.5             | 3.3             | 0.8                 | 27                                    | 4                 | 19              | 50             | 288                    | 3.6                           | 20.9                             |  |
| Whirlpool Corp.                        | 11.0                               | 8.5              | 2.6             | 0.7                 | 26                                    | 2                 | 19              | 47             | 263                    | 4.2                           | 23.8                             |  |
| IBM Corp.                              | 81.2                               | 50.9             | 30.3            | 7.5                 | 26                                    | 4                 | 15              | 45             | 271                    | 0.6                           | 3.3                              |  |
| ABB AB                                 | 18.3                               | 13.8             | 4.5             | 0.5                 | 17                                    | 9                 | 17              | 42             | 266                    | 2.3                           | 14.6                             |  |
| Philips Electronics                    | 30.0                               | 20.6             | 9.3             | 0.4                 | 23                                    | 3                 | 13              | 40             | 242                    | 1.3                           | 8.1                              |  |
| NEC Corp.                              | 39.8                               | 28.3             | 11.4            | 2.3                 | 20                                    | 3                 | 17              | 40             | 224                    | 1.0                           | 5.6                              |  |
| Canon                                  | 24.1                               | 12.6             | 11.5            | 2.8                 | 24                                    | 4                 | 12              | 39             | 240                    | 1.6                           | 10.0                             |  |
| Schneider Electric                     | 8.5                                | 5.0              | 3.5             | 1.0                 | 8                                     | 1                 | 29              | 37             | 153                    | 4.4                           | 17.9                             |  |
| Haier                                  | 8.7                                | n/a              | n/a             | n/a                 | 16                                    | 2                 | 18              | 36             | 191                    | 4.2                           | 21.9                             |  |
| American Standard                      | 7.8                                | 5.9              | 1.9             | n/a                 | 2                                     | 0                 | 31              | 34             | 117                    | 4.3                           | 15.0                             |  |
| Fujitsu                                | 37.9                               | 27.3             | 10.6            | 0.8                 | 17                                    | 3                 | 13              | 33             | 190                    | 0.9                           | 5.0                              |  |
| Robert Bosch                           | 33.2                               | 31.7             | 1.5             | 0.6                 | 18                                    | 2                 | 11              | 31             | 182                    | 0.9                           | 5.5                              |  |
| Ricoh Co. Ltd.                         | 14.3                               | 8.1              | 6.1             | 1.1                 | 18                                    | 3                 | 9               | 30             | 186                    | 2.1                           | 13.0                             |  |
| Daikin                                 | 4.7                                | 3.1              | 1.6             | 0.3                 | 3                                     | 0                 | 26              | 29             | 105                    | 6.2                           | 22.3                             |  |

## OEM ASSEMBLERS PERFORMANCE AND THE IMPORTANCE OF WIRE & CABLE (2002) ... CONTINUED

|                           | Financial Performance<br>(US\$ bn) |                  |                 |                     | Copper Cable Use<br>('000t conductor) |                   |                 |                | Approx. Cable<br>Value<br>(US\$'000) | Ratios of<br>Cable to Sales   |                                  |
|---------------------------|------------------------------------|------------------|-----------------|---------------------|---------------------------------------|-------------------|-----------------|----------------|--------------------------------------|-------------------------------|----------------------------------|
|                           | Net<br>Sales                       | Cost of<br>Sales | Gross<br>Profit | Operating<br>Profit | Energy<br>Cable                       | Tel/Data<br>Cable | Winding<br>Wire | Total<br>Cable |                                      | t conductor/<br>US\$ mn sales | US\$'000 cable/<br>US\$ mn sales |
| LG Electronics            | 11.1                               | 8.6              | 2.5             | 0.5                 | 13                                    | 2                 | 12              | 27             | 151                                  | 2.5                           | 13.6                             |
| Ericsson                  | 15.0                               | 10.1             | 4.8             | -2.2                | 6                                     | 12                | 8               | 26             | 191                                  | 1.7                           | 12.8                             |
| Black & Decker            | 4.4                                | 2.9              | 1.5             | 0.4                 | 8                                     | 0                 | 15              | 23             | 103                                  | 5.2                           | 23.4                             |
| Tyco Intl.                | 35.6                               | 55.2             | -19.5           | -1.6                | 11                                    | 9                 | 2               | 22             | 179                                  | 0.6                           | 5.0                              |
| Sanyo Electric            | 17.9                               | 14.0             | 3.9             | 0.6                 | 12                                    | 3                 | 8               | 22             | 133                                  | 1.2                           | 7.5                              |
| Thomson S.A.              | 9.6                                | 7.3              | 2.3             | 0.7                 | 9                                     | 1                 | 12              | 22             | 110                                  | 2.3                           | 11.5                             |
| Motorola                  | 26.7                               | 17.9             | 8.7             | -5.8                | 8                                     | 8                 | 4               | 19             | 148                                  | 0.7                           | 5.5                              |
| Sharp Corp.               | 16.0                               | 12.1             | 3.9             | 0.8                 | 10                                    | 2                 | 7               | 19             | 115                                  | 1.2                           | 7.2                              |
| Alstom                    | 20.1                               | 18.1             | 2.0             | -0.5                | 8                                     | 1                 | 9               | 18             | 97                                   | 0.9                           | 4.8                              |
| York Intl                 | 3.8                                | 3.1              | 0.8             | 0.2                 | 2                                     | 0                 | 16              | 18             | 65                                   | 4.7                           | 17.0                             |
| Midea Holding             | 1.6                                | n/a              | n/a             | n/a                 | 5                                     | 0                 | 12              | 17             | 74                                   | 10.7                          | 46.5                             |
| Nokia Corp.               | 28.3                               | 17.2             | 11.1            | 4.5                 | 6                                     | 6                 | 3               | 16             | 124                                  | 0.6                           | 4.4                              |
| <b>Subtotal</b>           | <b>1167.4</b>                      | <b>n/a</b>       | <b>n/a</b>      | <b>n/a</b>          | <b>882</b>                            | <b>155</b>        | <b>834</b>      | <b>1871</b>    | <b>10466</b>                         | <b>1.6</b>                    | <b>9.0</b>                       |
| <b>Total of the Above</b> | <b>2143.7</b>                      | <b>n/a</b>       | <b>n/a</b>      | <b>n/a</b>          | <b>1554</b>                           | <b>168</b>        | <b>1129</b>     | <b>2851</b>    | <b>16239</b>                         | <b>1.3</b>                    | <b>7.6</b>                       |

Source: Metalica Copper Consumption Database

### Financial Performance of the Large OEMs and the Role of Cable

While the US\$61 billion wire and cable business recorded in 2002 was dwarfed in scale by the US\$2.26 trillion in turnover recorded by the major OEMs, there was a remarkable similarity in their accounts in 2002. For industry in general, 2002 was a very bad year. Companies in most business areas made very little profit, even at operating level. For the major OEM assembly companies for which we have financial data, there was an average operating margin of just 6.8%.

OEM consumers do not always have a clear strategy towards wire and cable.

The OEM intermediates performed slightly worse, with an average operating margin of 5.9%. Though the figure for

the wire and cable industry was even lower, at 5.6% it was still very much in the range of the companies it supplied.

Like the wire and cable companies, much the OEMs turnover is offset by direct costs of sale. The average 25.2% gross margin recorded by cable companies in 2002 compares with 23.3% for the OEMs. The cost of sale includes purchased materials as its main component.

The situation was slightly different for the OEM intermediates, where wire and cable plainly has a larger (though still not imposing) role in their business profile. For the two groups of OEM intermediates research (motor and auto harness makers), we show an average purchase of 7.6 tonnes of conductor per US\$ million in sales. In terms of value, we show that

cable accounted for 4.21% of final sales value, and only 5.14% of the cost of sales.



While a growing centralisation of purchasing (and a reduction in the number of suppliers) is a common theme for many OEMs, a diversity of business activities, the relatively small volumes purchased in relation to the business overall and the fact that cable is not always a visible item in its own right (being pre-assembled in other products) means that OEM consumers do not always have a clear strategy towards wire and cable.

### OEMs and the Cable Industry

At the beginning of this article we referred to the frequent under-estimation of the size of the OEM sector by the cable industry. There are good reasons for this. One of the main reasons is that specialist wire and cable companies dominate the OEM business.

In volume, winding wire accounts for a huge 40% of total wire and cable sales to OEM buyers. While the value share of winding wire, at 30%, is somewhat less, this product group still forms a very significant part of the overall OEM market. It has long been the case that winding wire has been considered as somewhat separate from the rest of the wire and cable industry. In terms of industry grouping, it is not uncommon for winding wire producers to consider themselves to be more allied to their

customers than to other cablemakers. A large, and growing, proportion of the world's winding wire is made by companies that do not make other wire and cable products. While some of the major diversified cablemakers still make winding wire, some have made no secret of the fact that they would divest this business if the opportunity arose.

Insulated OEM wire and cable production is also often carried out by companies that are quite distinct in philosophy from the mainstream cablemakers. In this insulated OEM business, there tends to be a very high level of downstream integration. Indeed, the world's two largest automotive harness makers, Delphi and Yazaki, are also significant cablemakers, especially so in the case of Yazaki. Though they make cable, nei-

ther Delphi nor Yazaki would call themselves cablemakers. Indeed, it would be ridiculous for them to do so, as far more added value is achieved by these companies in the assembly of harnesses and in other products than in the production of wire and cable.

Some cablemakers with a diverse range of cable products have managed to secure a high level of OEM cable business by integrating downstream, notably Sumitomo Electric, with its wire harness business. Others have succeeded in integrating OEM business in non-value added products within their cablemaking operation. For many others, OEM sales form either a small proportion of the total business or are entirely absent. Clearly, the OEM sector is one that must be addressed seriously by a cablemaker if it is to be addressed at all.



# COMPANY NEWS IN BRIEF

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**Pirelli and Draka Rationalise Their UK Energy Cable Interests:** The United Kingdom subsidiary of **Pirelli & Co. SpA, Pirelli Cables Ltd.** has signed a Long Term Agreement with **Draka Holding NV** whereby Pirelli will supply **Draka UK Ltd.** with certain low voltage cables, primarily building wire, for the UK market. The deal, affecting around 15 million (US\$18 million) in annual sales, will allow Pirelli to optimise production at its site in Aberdare, South Wales, while allowing Draka to focus on industrial cables. Draka UK will cut 60 jobs, which will lead to a restructuring charge of 3 million (US\$4 million). The company expects to reduce costs by about 10 million (US\$12 million) as a result of the deal.

**Pirelli Also Makes a Deal with Alcatel:** An agreement has been reached between **Pirelli** and **Alcatel** regarding their submarine telecom cable business units. Alcatel will pay Pirelli 52.5 million (US\$62.5 million) for certain submarine telecom cable business assets and intellectual property rights, while Pirelli will pay Alcatel 45 million (US\$53.6 million) for a 5% shareholding in Alcatel's submarine telecom cable business. The deal should allow Alcatel to strengthen its global lead in optical submarine networks, while for Pirelli it represents a step forward in focussing on cables, optic fibres and new products for broadband access and second-generation photonics.

**ABB Withdraws Further from Cable:** The cabling subsidiary of **ABB** in Ireland, **Wessel Industries**, is to close its plant in Finglas, Dublin, with the loss of 120 jobs. The company will concentrate its production of telecom, data and power cables at its remaining site in Longford, Ireland, where currently 100 people are employed. A spokesman for ABB in Ireland blames the closure on rising production costs, saying »the cheaper economies in eastern Europe are an increasing problem for manufacturing in Ireland«.

**Investment in Serbia:** The Cyprus-based **East Point Holdings Group** (EPH Group) is soon to start production of fibre optic cables at its 84.7%-owned **Fabrika Kablova Zejecar**. EPH agreed to invest US\$2.7 million in Fabrika Kablova when it purchased the company in December 2003 for US\$0.5 million.

**Auto Harness Business in Europe Continues to Move East:** The French car parts company **Valeo SA** is to close its Santo Tirso wire harness plant in Portugal and downsize at its Villaverde windscreen wiper assembly plant in Spain. Iberian restructuring is part of a more general drive by Valeo to reform its business. The company intends to more than double sales and to raise the share of its low cost country supply base from 20% to 70% by 2010. Meanwhile, other automotive harness and car parts companies continue to invest in Central Europe. **Sumitomo Electric Industries** is to invest 7 million (US\$8.4 million) in building its third automotive wire harness plant in Romania at Alba Iulia, near Bucharest, which will employ 1,500 people and is due for completion in December. **Yazaki Corp.** plans a major expansion at its **Yazaki Debnar** unit in Prievidza. The subsidiary was established in 1994 and currently employs around 1,900 people.

**Sumitomo Electric Expands its Autoharness Presence in China:** Japanese cabling maker **Sumitomo Electric Industries** is to form a joint venture with China's **Dongfeng Motor Corp.** to make automotive wire harnesses. This is the first such venture between a Japanese cabling maker and one of China's top three automakers.

**Consolidation in Japanese Power Cable:** Cable companies **Furukawa Electric Co.** and **Fujikura Ltd.** are to combine their power cable businesses in their existing joint venture company, **Viscas Corp.** The joint venture, formed in

September 2001, covers design, research and development and overseas sales of underground power cable. From October 1st 2004, Viscas will be responsible for all of the companies' power cable operations, including their production. Viscas is expected to achieve annual revenues of ¥55-60 billion (US\$517-564 million). A staff cut of 300, taking the number of employees down to 800, is expected. The move is related to a prolonged downturn in Japan's utility power cable business and follows the transfer of domestic HV power cable sales by **Sumitomo Electric Industries Ltd.** and **Hitachi Cable Ltd.** to the 50/50 joint venture **J-Power Systems Corp.** This deal is recognised by the two companies as being a major step in integrating their domestic power utility businesses.

**Taihan Electric Moves to Acquire Jinro:** Korean cabling maker **Taihan Electric Wire Co.**, along with **Goldman Sachs**, is a major creditor in the bankrupt Korean alcoholic beverages giant, **Jinro Ltd.** Taihan dropped its initial plan to acquire the company, having offered Won 1.3 trillion (US\$1.1 billion) in combination with **HSBC Holdings**, following opposition to this plan from Goldman Sachs. Now, the creditors of Jinro Ltd. have submitted a reorganisation plan for the company, initiating a bidding process for Jinro and avoiding the commencement of bankruptcy proceedings. Taihan Electric Wire Co., claims that it will take part in the bidding process for the whole of Jinro, but has recently indicated a particular interest in the group's wire and cable making subsidiary, **Jinro Industries Co.** Taihan has spent Won 26.3 billion (US\$22.9 million) on buying one-quarter of the Won 280 billion (US\$244 million) debt of Jinro Industries as part of its effort to secure its purchase. Jinro Industries is a power, shipboard and telecom cable manufacturer, which currently sells much of the output of its 50,000 tpy copper wire rod line to third

parties. Jinro Industries achieved sales of Won 165 billion (US\$145 million) in 2003, about one-eighth of that of Taihan.

**Corporate Developments in African Wire and Cable:** A 30% stake in leading South African power, telecom and data cable company **Aberdare Cables** has been sold to a **Black Economic Empowerment (BEE)** group, led by the **Izingwe Consortium**, for R165 million (US\$24.7 million). Aberdare Cables employs 2,500 people, with a total turnover in excess of R2 billion (US\$300 million). In 1999, Aberdare Cables had sold 10% of its equity to **Kwezi Investments**, another BEE group. In Zambia, more than 48 million shares in **Zambia Metal Manufacturers Ltd. (ZAMEFA)** are being offered to the Zambian public by the **HE Zambia Privatisation Trust Fund (ZPTF)**, representing 18% of company equity. ZAMEFA makes copper wirerod, energy and telecom cables, winding wire and bare aluminium conductors, and employs around 300 people. In Egypt, the country's largest diversified cable company, **Electro Cable Egypt (ECE)**, has taken the unusual step of initiating a 25% capital decrease to LE223 million (US\$36.3 million) by cutting the par value of its shares. The move comes despite a strong 40% rise in sales in 2003 to LE325 million (US\$52.7 million) and achieving a net profit of LE3.6 million (US\$0.6 million), after recording a LE39.6 million loss in 2002 (US\$6.4 million).

**Developments at Encore Wire:** In March, US building wire company **Encore Wire** allocated US\$6.5 million to a 162,000 sq.ft expansion of its distribution centre at its McKinney, Texas production base. Business is booming for Encore, the company recording a 137% year-on-year increase in sales in the first quarter of 2004.

**Developments at Superior Essex:** Following an agreement in March to sell its copper telecom cable business to **Superior Essex Inc.** for US\$95 million, **Belden Inc.** has announced that it is to close its Phoenix, Arizona telecom cable plant, with the loss of 740 jobs. Cablemaking equipment on the Phoenix site had formed part of Belden's deal with Superior Essex, but the real estate had not. Superior Essex Inc. also has

announced that its operating subsidiaries, **Superior Essex Communications LLC** and **Essex Group Inc.**, intend to offer US\$275 in bonds. The capital increase is intended, to fund the acquisition of telecom cable assets from Belden and to improve the company's capital structure.

**IWG in Chapter 11:** Having reached agreement on debt restructuring with its creditors. US bare wire producer **International Wire Group Inc. (IWG)** filed for Chapter 11 bankruptcy protection in March. The plan is to reduce long-term debt from US\$389 million to US\$163 million. Majority ownership (96%) is to transfer to bondholders from leveraged buy-out firm **Hicks, Muse, Tate & First Inc.**, which will retain the remaining 4%. Under the plan, suppliers, employees and other creditors will not be affected by the bankruptcy. At the end of April, International Wire, received final court approval for a US\$140 debtor-in-possession loan from its senior lenders, led by **Highbridge/Zwirn Special Opportunities Fund L.P.**

**Krone Group Sold to ADC:** The US structured wiring equipment supplier **ADC Telecommunications Inc.** is to buy the **Krone Group** for US\$350 million from **Gentek Inc.** Krone, based in Denver, makes copper and fibre optic data cable.

**Alcoa Fujikura Cuts its Workforce in Mexico:** Automotive harness maker **AFL Automotive**, a division of **Alcoa Fujikura Ltd. (AFL)**, is to cut 2,350 jobs in Mexico, 9.6% of its workforce in the country. The Piedra Negras operation will lose 1,050 of its 4,464 employees, Torreon 1,300 of 4,139 employees. The move follows AFL staff cuts in Mexico mid-2003, when 4,250 people lost their jobs.

**Superconductor Wires to Become Commercial?** The long-awaited commercial production of **high-temperature superconductive (HTS) wires** came a step closer mid-May with the announcement by **Sumitomo Electric Industries (SEI)** that it intended to begin mass production by end-2004. The company already has commercial production facilities at its Osaka plant. HTS wire, with electricity transfer capability of about 130 times that of conventional

wire, is seen by SEI to have major applications as utility power cable (especially in the United States), in transport propulsion systems where weight and high efficiency is required (especially in trains) and for high-magnetic-field magnets in a variety of markets. SEI's copper-bismuth HTS product is made using a newly developed technique labelled a »controlled over pressure sintering process«.

**New Copper Wirerod Capacity:** India's **Sterlite Industries** plans to add a third wirerod line in Tuticorin in southern India by early 2005, raising capacity from 125,000 tpy to 200,000 tpy. This development will occur in parallel with a smelter expansion on the site. In Mongolia, the Mongolia-Russia mining joint venture, **Erdinet-Mining Corp.**, plans to move downstream to make cathode and also wirerod, with the installation of a 25-30,000 tpy wirerod line in joint venture with **Outokumpu OY**. The line will be designed to use low-grade concentrates rather than cathode as feed. The other new wirerod installations listed are smaller, including a 16,000 tpy Outokumpu unit by Copper World of Iran, scheduled for delivery by end-2004. In Zambia, the cablemaker **ZAMEFA** is to invest US\$1.3-1.5 million in upgrading its copper wirerod line, doubling capacity from 15,000 tpy to 30,000 tpy. There are also small Rautomead lines being installed this year in Sweden, Australia, Taiwan and Iran.

**Metrod Diversifies into Winding Wire:** The Malaysian copper wirerod company **Metrod (Malaysia) Bhd**, through its subsidiary **Metrod Sdn Bhd**, is to acquire the Austrian winding wire cable company **Asta KG** for 32.7 million (US\$39.8 million) and its parent **Asta Electrodraht GmbH** for 1.5 million (US\$1.8 million). The seller is Austrian power transmission and distribution system supplier VA Technologie.

**Metals Exchange and Logistics Developments in Asia:** The **London Metal Exchange** has approved the port of Johor in Malaysia as a good delivery point for nonferrous metals. Johor will be added to the short list of Asian delivery points for LME copper, which includes Singapore, Dubai, and, since early 2003, Gwangyang and Busan in South Korea.



ICF

# NEWS

|                    |    |               |                              |  |
|--------------------|----|---------------|------------------------------|--|
| NEC Corp.          | 40 | Japan         | electrical/electronic equip. | computers & peripherals, componetns, telecom equipment           |
| Lear Corp.         | 39 | United States | intermediates                | automotive parts   |
| Canon              | 39 | Japan         | electrical/electronic equip. | Computer periperals, optical equipment                           |
| Renault S.A.       | 38 | France        | automotive assembly          | automotive assembly  |
| Valeo              | 38 | France        | intermediates                | automotive parts   |
| Schneider Electric | 37 | France        | electrical/electronic equip. | electricity distribution & automation products                   |
| Mitsubishi Motors  | 37 | Japan         | automotive assembly          | automotive assembly  |
| Haier              | 36 | China         | electrical/electronic equip. | electrical appliances, electronic equipment                      |
| Johnson Electric   | 36 | Hong Kong     | intermediates                | small motors   |
| Hyundai Motor      | 36 | S.Korea       | automotive assembly          | automotive assembly  |
| Mabuchi Motor      | 36 | Japan         | intermediates                | motors & systems   |
| American Standard  | 34 | United States | electrical/electronic equip. | air conditioners, bathroom fittings                              |
| Fujitsu            | 33 | Japan         | electrical/electronic equip. | telecom & electronic equipment, software                         |
| Robert Bosch       | 31 | Germany       | electrical/electronic equip. | automotive systems, electrical appliances, industrial technology |
| Ricoh Co. Ltd.     | 30 | Japan         | electrical/electronic equip. | office equipment   |
| Daikin             | 29 | Japan         | electrical/electronic equip. | air conditioners, chemicals                                      |
| A. O. Smith        | 29 | United States | intermediates                | motors, water heaters  |
| Alcoa Fujikura     | 28 | United States | intermediates                | automotive components (ahrnesses), telecom equipment             |
| LG Electronics     | 27 | S.Korea       | electrical/electronic equip. | electronic equipment, telecom equipment                          |
| Ericsson           | 26 | Sweden        | electrical/electronic equip. | mobile phones, network equipment                                 |
| WEG                | 24 | Brazil        | intermediates                | motors & transformers  |
| Black & Deck       | 23 | United States | electrical/electronic equip. | power tools, fasterning & assembly                               |
| Tyco Intl.         | 22 | United States | electrical/electronic equip. | electronics,security systems, genral industrial                  |
| Sanyo Electric     | 22 | United States | intermediates notors         |  |
| Thomson S.A.       | 22 | France        | electrical/electronic equip. | electrical euqipment, electronic equipment                       |
| Motorola           | 19 | United States | electrical/electronic equip. | mobile phones and components                                     |
| Mazda Motor        | 19 | Japan         | automotive assembly          | automotive assembly  |
| Sharp Corp.        | 19 | Japan         | electrical/electronic equip. | electrical & electronic equipment & components                   |
| Suzuki Motor       | 19 | Japan         | automotive assembly          | automotive assembly  |
| Alstom             | 18 | France        | electrical/electronic equip. | power & distribution equipment, electrical & railway             |
| York Intl          | 18 | United States | electrical/electronic equip. | air conditioners, compressors                                    |
| Midea Holding      | 17 | China         | electrical/electronic equip. | electrical appliances  |
| Nokia Corp.        | 6  | Finland       | electrical/electronic equip. | mobile phones, network equipment                                 |

Source: Metalica Copper Consumption Database