The Outlook for the copper and copper alloy industry in Japan
- The Electrical Sector

Japanese Cable Industry

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Kazuhiko Ohashi
Chairman
The Japanese Electric Wire & Cable Makers' Association
(JCMA)

Agenda

1. Outline of Japanese cable industry
2. Introduction of JECTEC
3. CO_2 emissions reduction
   by increased conductor size

Outline of Japanese Cable Industry

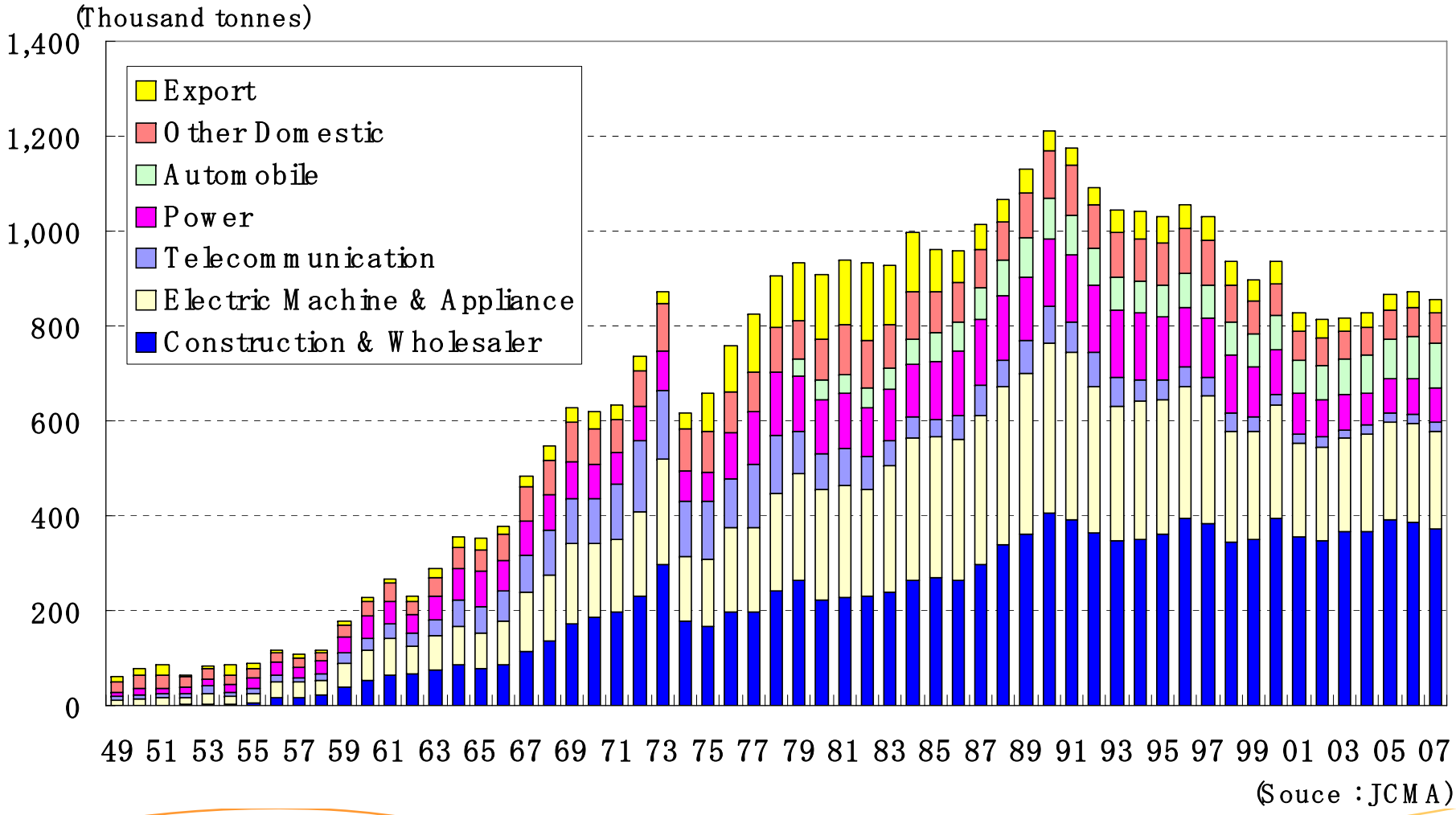
(2007)

Number of Companies ;	About 400 (134)
Number of Employees ;	21,600 (Incl. fibre cable)* * Ministry of Economy, Trade & Industry (METI)
Production quantity ;	856,000 tonnes (copper) 24,000 tonnes (aluminium) 31,849,000 core-km (fibre)
Turnover ;	1,666,000 million yen (metal) + 328,100 million yen (fibre) = $16,900 million

(Source：JCMA）

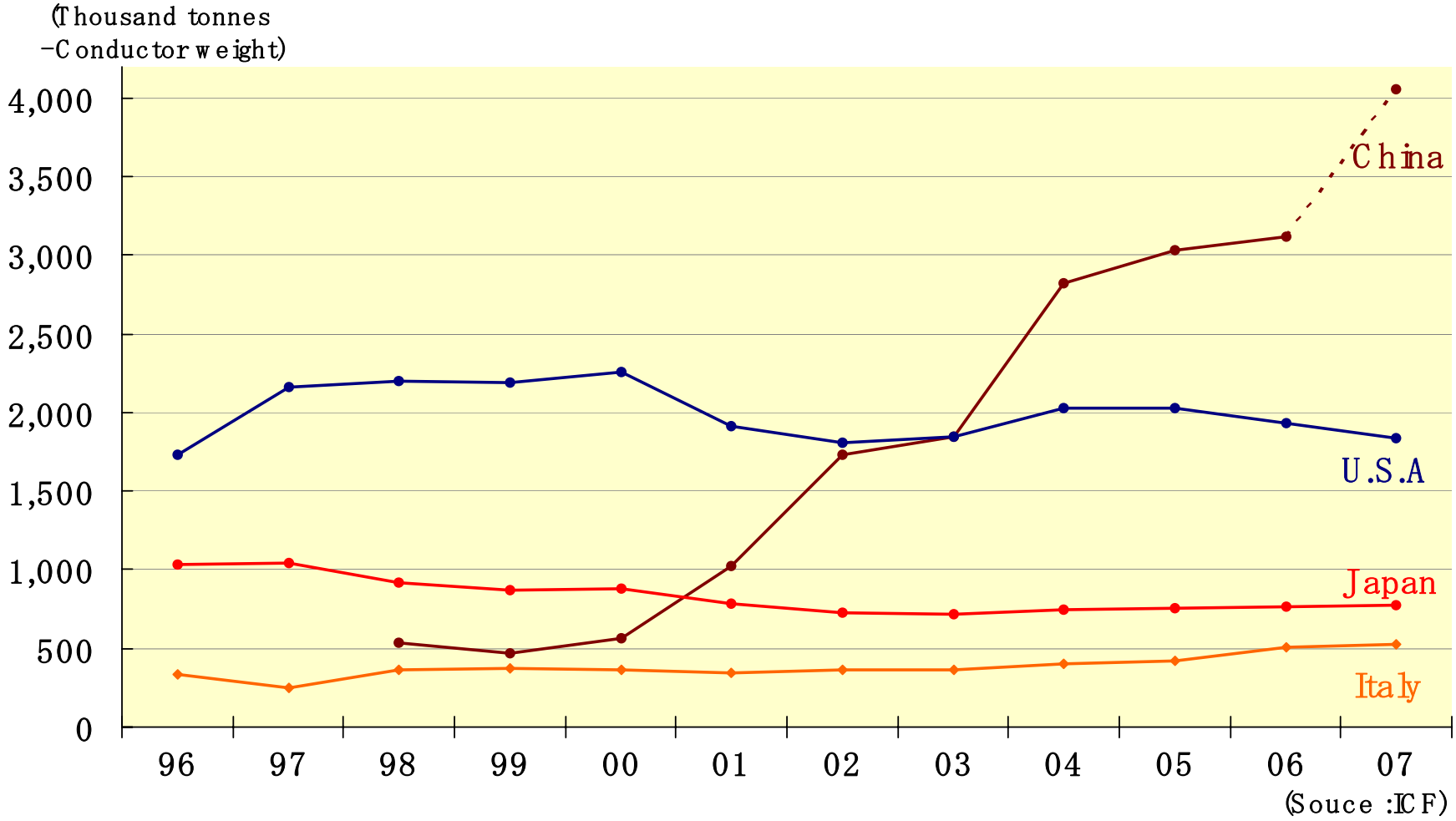
Progress of Domestic Shipments

Production Quantity of Wire & Cable (Copper) in Japan



Production of insulated wire & cable in major countries

（1996～2007）



Reasons for the decrease

① Recession & economic slowdown after the burst of bubble in early 1990's

② Shift of plants from Japan to overseas countries (= "Globalisation")

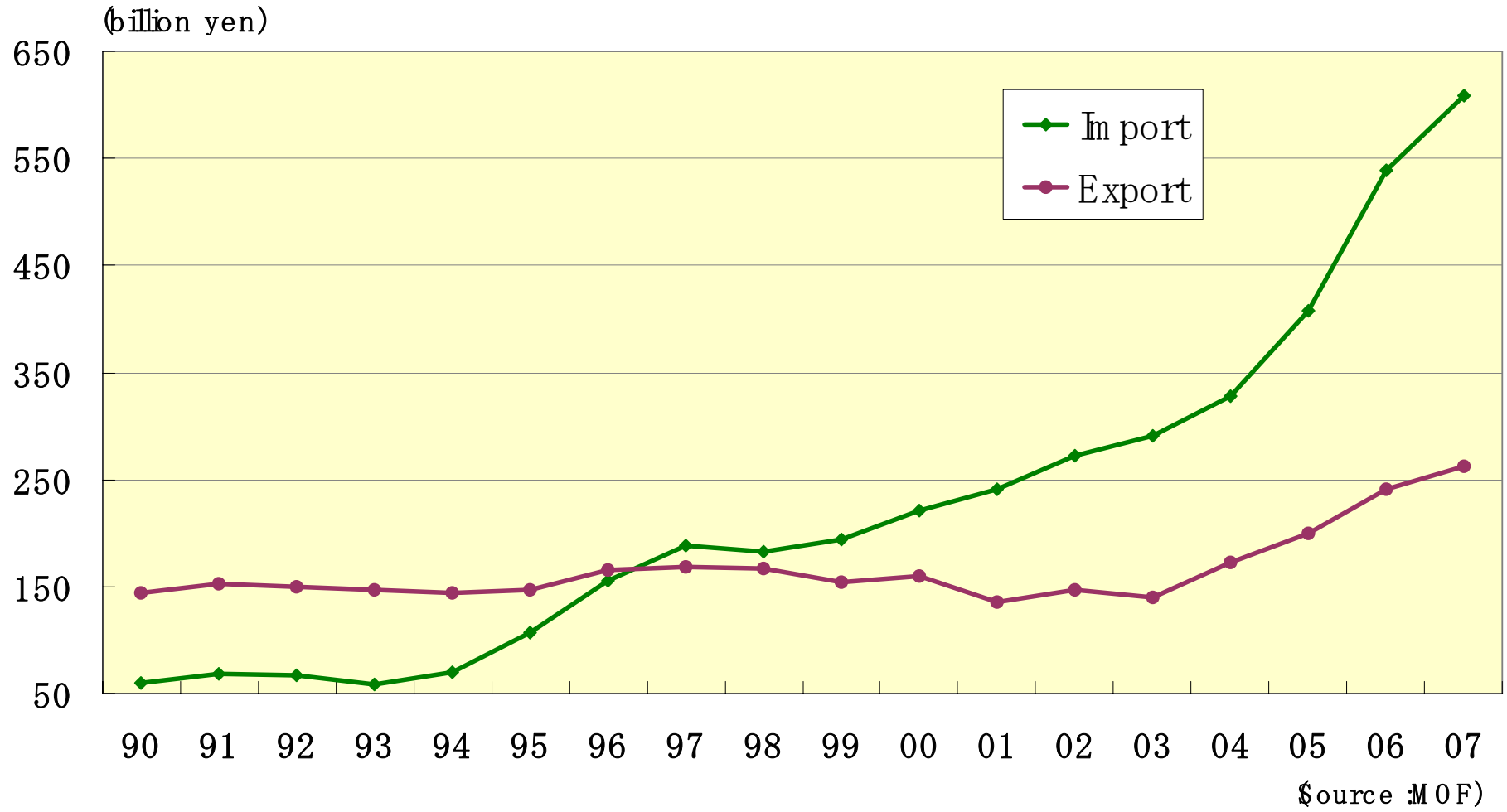
③ Increase of import of electric wire and cable

④ Technical innovation (miniaturisation & substitution)

※ 2 & 3 are the most important & primary reasons for decrease

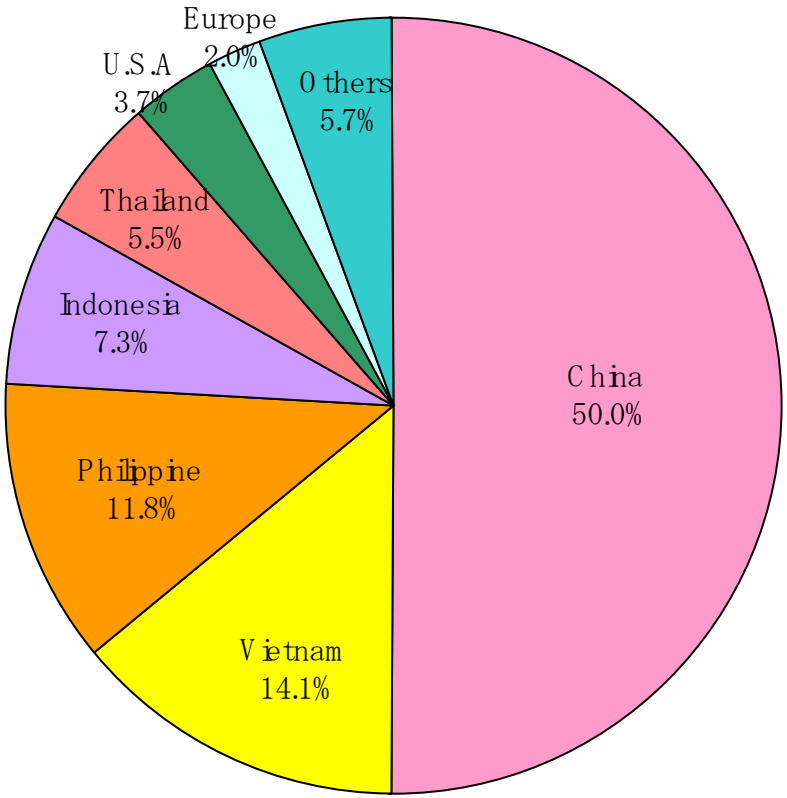
Trade of Cable of Japan

Export & Import of Insulated Wire & Cable of Japan



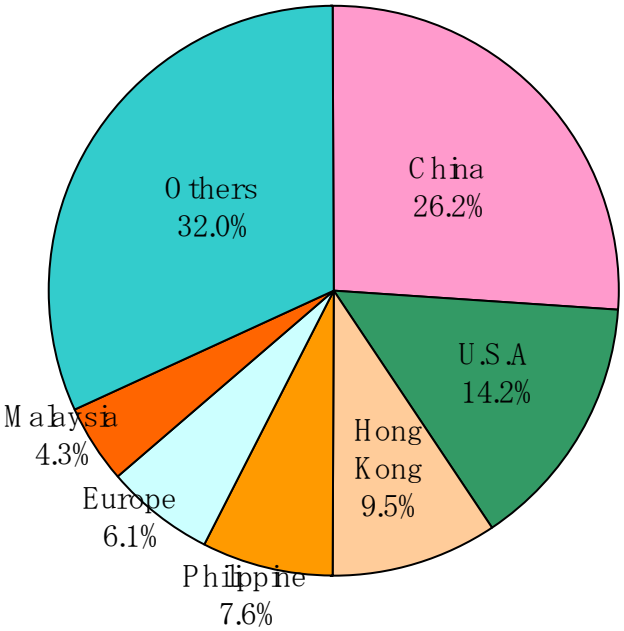
Main Trading Partners of Japan (2007)

Export & Import of insulated Wire & Cable of Japan



Import

608 billion yen



Export

263 billion yen

(Source : MOF)

Location of Overseas Japanese Cable Plants

Number of plants – July, 2007

Asia 227 (75% of total)

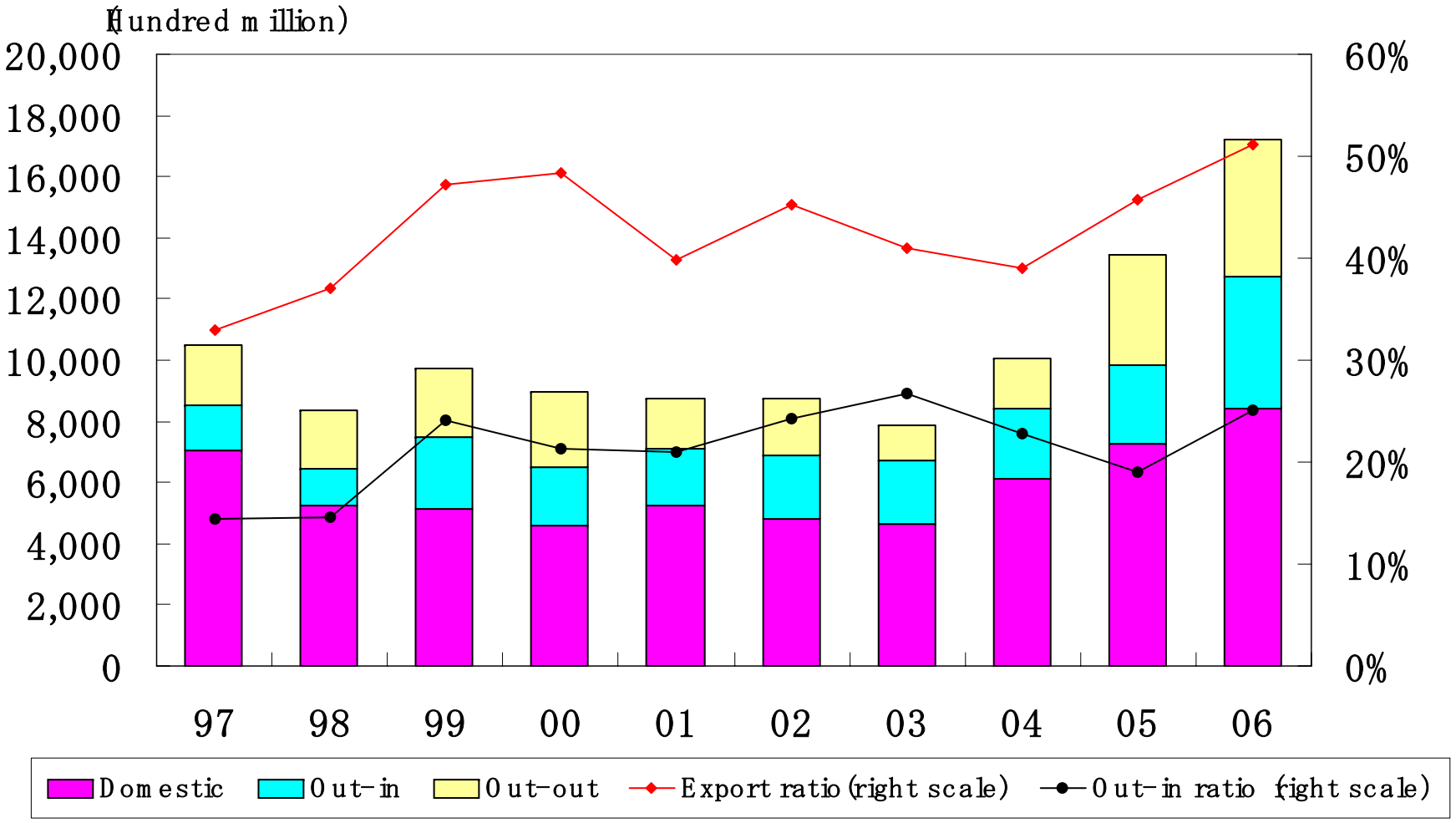
China	91
Thailand	27
Malaysia	22
Indonesia	21
Hong Kong	14
Vietnam	13
Taiwan	12
Philippines	12
Others	15
	(227)

Europe	32
North America	28
Others	13

Total 300

(Source : JCMA)

Sales of Overseas of Japanese Nonferrous Materials Plants



(Source : METI)

Japan Electric Cable Technology Center Inc.

- Location : HAMAMATSU, SHIZUOKA
- Establishment : February 8, 1991
- Employees : 32
- Annual Budget : approx. 400 million yen
- Site : approx. 13,000m^2
- Membership : Regular members 71
  Supporting members 40

Mission of JECTEC

Supporting Environmental-friendly Globalization
Electric Wires and Cable

① Research and Development
② Certification Services
③ Testing Services
④ Education and Information Services

Amount of Copper for Power Transport Cables (From Power Plants to Customer's Loads)

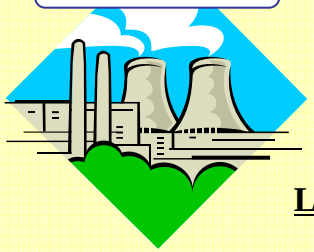
		Type of Cable	Overall Length	Amount of Copper
(1) Power company	Power transmission	• ACSR (Aluminum) • Extra high voltage CV	90 thousand km	1.2 million tons (Aluminum in copper equivalence)
	Power distribution	• High-voltage CV • OC, OW	1.3 million km	
(2) Building/factory		• Low-voltage CV-T	1.7 million km	3.5 million tons
(3) House		• VVF	27 million km	1.5 million tons

Three times

JCMA focused its attention on low-voltage CV-T containing 3.5 million tons of copper, 3 times that of power transmission and distribution cables, and believed that such CV-T causes a great amount of electrical loss. An estimate has been conducted.

Loss Reduction by Increased Conductor Size of Low-Voltage CV-T <JCMA's Estimate>

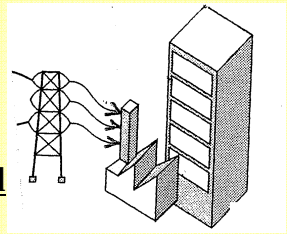
Power Plant



Amount of generation
971 billion kWh
(100%)

Loss by transmission and distribution cables
68 billion kWh
(7%)

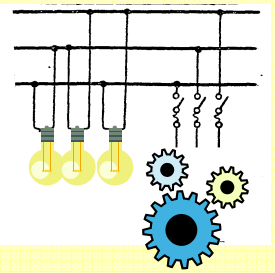
Customers



(Building/factory)

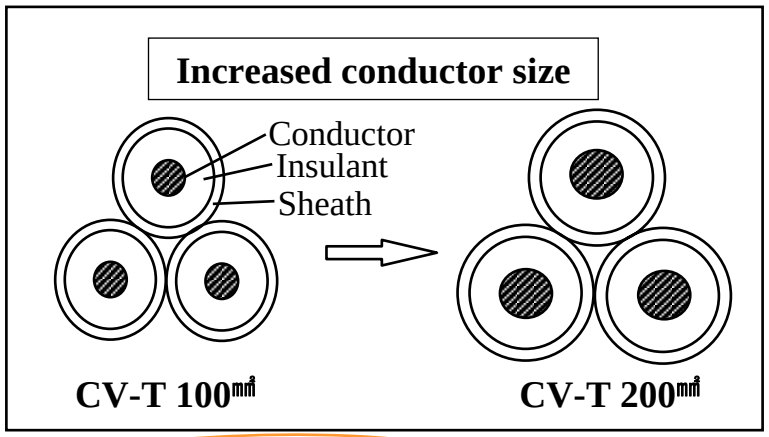
Loss in customer's premises
70 billion kWh
(7%)

Loads



Increased size

If increased conductor size is completed (20 years later),
Loss in customer premises will be halved
To 35 billion kWh (3.5%).

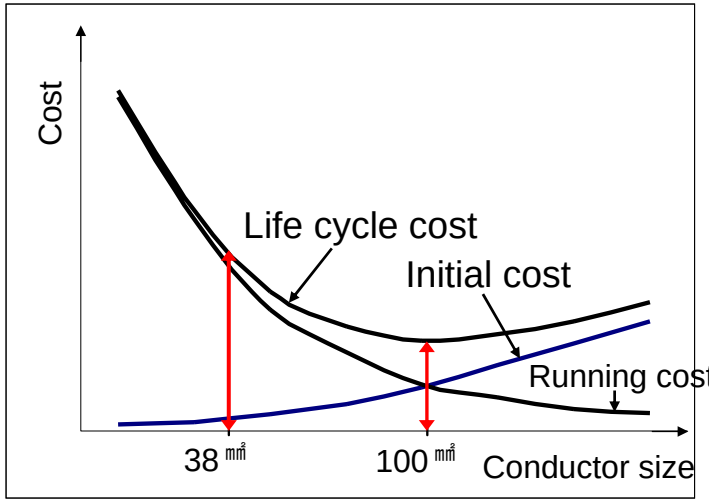


This leads to 1% reduction in the total CO_2 emissions in Japan.

Expected Effect by Increased Conductor Size

(1) Economically advantageous to customers

An increase from 38mm^2 to 100mm^2, for example, results in a significant reduction in running costs (power charges resulting from 20 years' electricity loss), despite an increased initial cost (cable costs). The sum of both leads to a minimum of life cycle cost at 100mm^2.



(Yen/m)	CV-T 38mm^2	CV-T 100mm^2	(Balance)
(1) Initial cost	1,300	3,300	(2,000)
(2) Running cost (for year)	460	175	(285)
(3) Running cost (for 20 years)	9,200	3,500	
(4) Life cycle cost ((1)+(3))	10,500	6,800	
(For information) Years of depreciation	2,000 divided by 285 = 7 years		

(2) Significant CO_2 emissions reduction

1% reduction for all customers across the country

(3) Increase of copper demand

0.2 million tons annually × 20 years = 4 million tons

〈JCMA & JECTEC got the Japan Copper Development Center Prize in 2008〉

Thank you