Contribution by JAMA

CARS 21 Public Consultation on "The Automotive Regulatory Framework of the Next 10 Years"

Executive Summary

Japan Automobile Manufacturers Association, Inc. (JAMA) is the trade association representing Japanese automotive manufacturers. It comprises 14 companies[1], which manufacture passenger cars, trucks, buses and motorcycles, and most of whom are key players in the European automotive market:

- In 2003 they produced a total of 1.24 million units, which equates to 60 percent of all Japanese brands sold in Europe and over 7.5 percent of the total EU production.
- JAMA members have made significant investments in a number of EU countries, creating over 200,000 jobs, which in turn have contributed to the dynamism of the EU economy.
- Today, EU car parts manufacturers deliver more than 80% in value of the parts used in the European production plants of Japanese automotive manufacturers. Purchasing of EU parts by JAMA members has steadily increased and is estimated to have exceeded €10 billion in 2004.
- According to a WMRC survey on the productivity of the European Automotive sector, Japanese manufacturers lead the way in terms of vehicles per person (VPP) out of the 44 plants surveyed. Four plants owned by JAMA members, surveyed in the 2003 Index, rank amongst the highest performers in Europe in terms of labour productivity.

JAMA members are determined to contribute to the further development of the automotive sector in Europe. They are committed to strengthening the sector's competitiveness via direct investments in production and research and development (R&D), as well as implementing commercial strategies stimulating local businesses and the wider EU economy.

JAMA feels that it is important that the work performed by the *CARS 21* high level group does not reduce to a hunt for 'poor' regulations. JAMA believes that it is the cumulative effect of regulations, which individually may have strong

[1] JAMA members include Daihatsu Motor Co., Ltd., Fuji Heavy Industries Ltd., Hino Motors, Ltd., Honda Motor Co., Ltd., Isuzu Motors Limited, Kawasaki Heavy Industries, Ltd., Mazda Motor Corporation, Mitsubishi Motors Corporation, Mitsubishi Fuso Truck and Bus Corporation, Nissan Diesel Motor Co., Ltd., Nissan Motor Co., Ltd., Suzuki Motor Corporation, Toyota Motor Corporation, and Yamaha Motor Co., Ltd.

persuasive merits, but are often not mutually consistent, which presents the sector with significant burdens.

This paper highlights the current contribution of the European subsidiaries of Japanese brands to the competitiveness of the European Motor Industry. Amongst other things it highlights how best practices in manufacturing, employment and training have enabled them to do so thus far. It focuses on:

- JAMA contributions to the European economy
- High productivity
- Global alliances
- Market access
- CO_2 reduction technologies, including alternative powertrains
- Fiscal incentives
- Fuel quality
- Global harmonisation of technical standards
- Intellectual property rights

JAMA does not see this paper as an end in itself, but rather as its first contribution to an evolving process. JAMA fully supports the *CARS 21* initiative and welcomes the opportunity to participate in the *CARS 21* consultation and forthcoming hearing. JAMA is willing to contribute in a significant manner to the objectives of *CARS 21*.

Introduction

1. Japan Automobile Manufacturers Association, Inc. (JAMA) is the trade association representing Japanese automotive manufacturers. It comprises 14 companies, which manufacture passenger cars, trucks, buses and motorcycles, and most of which are key players in the European automotive market. JAMA members are determined to contribute to the further development of the automotive sector in Europe. They are committed to strengthening the sector's competitiveness through direct investments in production and R&D, as well as implementing commercial strategies that stimulate local businesses and the wider EU economy.

2. JAMA welcomes the launch of a high level group to:

   "*Make recommendations for increasing the worldwide competitiveness of the EU automotive industry, while maximising the benefits of the European society and industry through a comprehensive approach to the sector.*"

   JAMA fully supports the *CARS 21* initiative and welcomes the opportunity to participate in the consultation and forthcoming hearing. JAMA is prepared to contribute in a significant manner to the objectives. The development of a European automotive regulatory framework for the next ten years that creates the preconditions for a sustainable and competitive automotive sector will have significant implications for JAMA members. Thus they are willing to contribute to the development of this framework and welcome all initiatives enabling their participation in this work.

   JAMA feels that it is important that *CARS 21*'s work does not reduce to a hunt for 'poor' regulations. JAMA shares the opinion expressed in the European Commission's Competitiveness Report 2004 that "*the regulatory environment is one of the major determinants of competitiveness*" (p 266). Together with the authors of the above-mentioned report, JAMA also recognises the difficulties in assessing the impact of regulation on competitiveness. JAMA agrees with them that one of the most important considerations to be taken into account is the complexity of the demands of society, which has led to an accumulation of regulations.

   JAMA believes that it is the cumulative effect of regulations, which individually may have persuasive merits, but are often not mutually consistent, that presents the sector with significant burdens.

Part I: Contribution to the Competitiveness of the European Automotive Industry

A) JAMA Contributions to the European Economy

3. JAMA members started production in Europe during the mid-80s and in 2003 produced a total of 1.24 million units, which equates to 60 percent of all Japanese brands sold in Europe and over 7.5 percent of the total EU production. Today the European subsidiaries of Japanese automakers are an integral part of the European automotive industry and are contributing significantly to its sustainable development. JAMA members are direct contributors to Europe's competitiveness through direct investment in production and R&D.

4. JAMA members operate 18 production facilities in conjunction with 15 R&D facilities in the EU, aiming to ensure that the specific market needs of the European consumer are met. This commitment represents an investment of over €16 billion by JAMA members in the EU.

5. JAMA members have made significant investments in a number of EU countries, thereby creating high skill jobs, which in turn have contributed to the dynamism of the EU economy. Over 200,000 jobs have been created by the activities of Japanese automakers in Europe. Of these, 38,500 are direct employment: over 36,000 in production and more than 2,500 in R&D. In addition, 163,000 jobs have been created indirectly in headquarters, parts distribution centres, distribution, financial services and sales.

6. JAMA members are adopting optimised purchasing policies, which have stimulated local businesses and the wider EU economy. Purchasing by JAMA members has strengthened the competitiveness of European suppliers and resulted in increased purchasing of parts from European suppliers. Figures for 2003 point to a 22% increase on the previous year in Japanese manufacturers' purchases of automotive parts manufactured in the EU. Today, EU car parts manufacturers deliver more than 80% in value of the parts used in the European production plants of Japanese automotive manufacturers. Purchasing of EU parts by JAMA members has steadily increased and is estimated to have exceeded €10 billion in 2004.

7. The development of mutually beneficial relations between Japanese manufacturers and European parts manufacturers is a priority for JAMA. With a view to fostering business partnerships between Japanese automotive manufacturers operating in Europe and European automotive suppliers, emphasis has been put on developing long-term business relations in the context of the JAMA-CLEPA (European Association of Automotive Suppliers) Business Conference. This goes hand-in-hand with the Commission's

observation that first tier suppliers are becoming close partners in the innovation and production process of vehicle manufacturers[2].

B) High Productivity

8. According to a WMRC survey [3] on the productivity of the European Automotive sector, Japanese manufacturers lead the way in terms of vehicles per person (VPP) out of the 44 plants surveyed during 2002. Four plants owned by JAMA members and surveyed in the 2003 Index rank amongst the highest performers in Europe in terms of labour productivity :

    a. Nissan Sunderland (UK);
    b. Honda Swindon (UK);
    c. Toyota Burnaston (UK); and
    d. Toyota Valenciennes (France).

    The average productivity of the four plants mentioned above was, according to the 2002 WMRC survey results, 87.5 VPP, which compares with a European average of 61 VPP. The Nissan Sunderland plant remains the most productive plant in Europe in terms of VPP.

9. JAMA members have managed to maintain high productivity in Europe since the beginning of the 1990s, despite a declining European car market. This is a strong indication that JAMA members are targeting improved productivity as a priority even in times of low demand.

10. As noted above, production of passenger cars by the European subsidiaries of Japanese brands reached 1.24 million vehicles in 2003. Furthermore, since 2001, EU production by JAMA members has exceeded imports from Japan. Japanese models produced in the EU are also exported outside the EU and have reached 160,000 vehicles in 2003, representing an increase of more than 300% from 2001. These exports have contributed significantly to the EU trade balance.

C) Global Alliance

11. Japanese automakers are strategically investing in markets such as the US, Europe and Asia in order to maintain their global competitiveness. In fact, the global operations of Japanese automobile manufacturers continue to grow, bringing significant benefits to local economies and host countries, including employment, industrial development, and technology transfer. The global outreach is also illustrated by an increasing number of extensive international alliances such as capital and technical tie-ups, joint R&D and production operations and cooperative sales ties.

[2] European Competitiveness report 2004, pp166
[3] World Market Research Centre (2003), European Automotive Productivity Index 2003

12. JAMA believes that European policymakers should take into account the outcome of the Global Automotive Industry meetings. These aim to promote progress and cooperation to provide more efficient, innovative and safer automobiles in all parts of the world. Through this forum, leading manufacturers from Europe, Asia and the USA are jointly working in productive partnerships with governments, consumers and stakeholders to advance important safety, environmental and intellectual property issues.

D) Market access

13. The current WTO Doha Development Agenda provides a unique opportunity to increase the liberalization of trade in industrial goods through the elimination of tariff barriers. The elimination of those barriers on industrial goods would have significant economic benefits. According to the World Bank, it would result in global income gains of $500 billion, three quarters of which would be realised in developing countries, and lift more than 300 million people out of poverty by 2015.

14. International trade in vehicles and parts accounts for 8.3% of the value of world trade. This means that the liberalization of trade in vehicles and parts through the elimination of tariff barriers would have significant benefits for the European economy. First and foremost, it would induce an increase in exports of vehicles and parts from Europe. But importantly, it would also benefit domestic vehicle producers, enabling them to reduce the costs of technologies and parts they wish to purchase abroad and thus improving their competitiveness. Effectively addressing tariff barriers affecting the trade of vehicles and parts will result in significant benefits in both developed and developing countries.

15. In addition, econometric analysis suggest that the elimination of the EU's 10% tariff on passenger cars could offer consumers more value for money and an increased choice of models. Consumers can only gain from tariff elimination.

16. JAMA members are strongly committed to free trade as it is an engine of growth. They fully agree that "*the economic benefits of greater openness – faster growth, cheaper imports, new technologies, and the spur of foreign competition – that the world has enjoyed in recent years are too easily taken for granted*" (The Economist). As such, trade liberalization, including the EU's 10 % tariff on passenger cars, is in fact a key factor to competitiveness. The CARS 21 high-level group is therefore encouraged to focus on trade liberalization and consider all practical and effective means to reach an agreement in the context of the WTO Doha Development Agenda.

Part II: Key factors to Competitiveness

1. Environment

A) CO2 Reduction Technologies

17. JAMA has signed a voluntary commitment with the Commission to significantly improve the fuel efficiency of their cars sold in the EU, and as such contributes substantially to the achievement of the EU's overall environmental objectives.

18. Reducing CO_2 emissions from vehicles is a key priority for JAMA. So far, JAMA members have decreased the average specific CO_2 emissions of passenger cars registered in the EU in 2003 to 172g CO_2/km (down by about 2g CO_2/km from 174 g CO_2/km in 2002). This means that JAMA met the 2003 intermediate target (165 - 175 g CO_2/km) for the above-mentioned voluntary agreement. Taking the reference year (1995) into account, average specific CO_2 emissions of petrol-fuelled cars recorded a decrease from 191 g CO_2/km in 1995 to 170 g CO_2/km in 2003 – an 11% reduction. The average specific CO_2 emission levels of diesel cars recorded a decrease from 239 g CO_2/km in 1995 to 173 g CO_2/km in 2003 – a 27.6% reduction. Figures to date indicate that JAMA is in line with its 2009 commitment and, in present circumstances, there is no reason to believe that JAMA would not live up to its commitment. However, in the light of factors indicated in paragraph 20, the 2009 target remains extremely ambitious for JAMA.

19. To achieve the CO_2 emission targets (average 140g CO_2/km) agreed in the commitment by 2009, JAMA members will continue to develop various technologies including Direct Injection (DI), hybrid vehicles and Continuous Variable Transmission Technology (CVT). The development of these technologies is in fact a priority. Today's vehicle market is developing a new dynamic based on rapid globalization and a race for new products and new environmental and safety technology. The Japanese car industry is currently leading a technological revolution by producing, commercialising and marketing modern cars that are more fuel efficient and produce fewer emissions. This is exerting downward pressure on GHG emissions, thus helping to curb the greenhouse effect.

    a. For example, Toyota and Honda have launched gasoline-electric cars (so-called hybrids) with best-in-class CO_2 emissions. These have been successfully commercialised in Europe for several years now. Other JAMA members, including Nissan, Mazda and Mitsubishi have also introduced hybrid technologies in Japan and the USA.

b. In addition to the commercialisation of hybrid vehicles in Europe, Honda and Toyota have also started to commercialise fuel cell powered vehicles in Japan and the USA. Nissan has started it in Japan.

c. Besides hybrid and fuel cell technologies, and as mentioned above, JAMA members are continuing to develop technologies such as CVT and DI, as well as diesel technologies. However, the true potential of technologies such as DI in terms of environmental performance will not be fully capitalised upon until sulphur-free fuels are widely available in the EU.

d. Other efforts aimed at improving the energy efficiency of vehicles focus on vehicle design and weight reduction through the use of lightweight materials such as aluminium, carbon fibre and plastics.

20. However, JAMA would like to take this opportunity to draw attention to a number of points of importance for the delivery of the 140g CO_2/km target.

    a. Today, automotive manufacturers face an increasing number of unknown and often conflicting factors, which render the planning and management of the manufacturer's CO_2 objectives very difficult to attain. Indeed, CO_2 reduction efforts will need to be balanced against factors such as increasing consumer demand for increased comfort and safety that require additional energy and therefore contribute to the vehicle's emissions.

    b. The cumulative effect of regulations which are often not mutually consistent also presents manufacturers with considerable burdens that must constantly be overcome with a view to continuously improve the environmental performance of the vehicle. While the latter is an objective in itself, the regulatory framework must ensure that it enables manufacturers (a) to do so effectively and economically and (b) to remain competitive at the same time.

21. JAMA is also considering the potential for reducing the level of CO_2 emissions to 120 g/km by 2012. The results of extensive studies carried out by the Mitsubishi Research Institute on behalf of JAMA show that in order to achieve the 120 g CO_2/km target by 2012, a hybrid market share of 26-30% would be required, with the total market average cost increase expected to amount to between $2,740 and $3,300 per unit. JAMA concludes that such market changes and cost increases would be unrealistic for the market.

22. JAMA is nonetheless fully committed to constant and ongoing efforts to develop technologies enabling reductions in CO_2 emissions and to expand the proliferation of low CO_2 emitting vehicles. However, JAMA believes that in addition to reducing CO_2 on the strength of technological innovation, studies will also be required into traffic flow measures, as well as biofuels and other

feasible alternatives that would contribute to efficiently reducing CO_2 emissions from the road transport sector in the EU.

B) Fiscal Incentives

23. JAMA fully supports the Commission's efforts to restructure and harmonise motor vehicle and fuel taxes in Europe. With regards to vehicle taxation, JAMA agrees with the Commission's finding that a gradual elimination of the registration tax would be beneficial in a number of ways:

    a. Shifting tax emphasis to car usage rather than purchase;

    b. Establishing, through increasing use of the annual circulation tax, more consistency in the taxation for consumers and in the related national revenues.

    The factual situation across the 25 Member States shows excessive divergence of policies and practices that have resulted in harmful fragmentation of the EU's internal market. This fragmentation has had significant negative impacts on industry and consumers as the disparities in taxation frameworks have remained a barrier to reduce price across Member States and effectively commercialise new vehicles in a single market fashion.

24. A key issue to be considered by the high level group is that of fiscal incentives to promote the take-up or production of passenger cars that significantly reduce GHG emissions. These incentives should be technology neutral. For instance, the Commission's guidelines on fiscal incentives for diesel particulate filters are in principle fully supported by JAMA. However on their own, these guidelines may indicate that diesel technologies form a priority and a preferred technology for achieving Europe's objective in terms of air quality and climate change. It is therefore crucial for the Commission to consider all existing technologies.

C) Fuel Quality

25. R&D objectives in the automotive industry should include efforts to develop environmentally friendly vehicles, in particular by finding the adequate technology and fuel solutions to ensure long-term security of supply.

26. JAMA supports the work of the Worldwide Fuel Charter, which has been signed by ACEA, JAMA, Alliance and EMA. The objective of the global fuels harmonisation effort is to develop common, worldwide recommendations for 'quality fuels', taking into consideration customer requirements and vehicle emission technologies, which will in turn benefit our customers and all other affected parties.

27. To cope with emerging needs, automobile and engine manufacturers have concluded from existing research that the sulphur levels of both gasoline and diesel fuel must be dramatically lowered to enable advanced and future motor vehicle technologies to meet these new requirements. The automotive industry has therefore started developing engines using sulphur-free gasoline, as outlined in the Charter.

28. JAMA encourages the high level group to take into consideration the work done in the context of the Worldwide Fuel Charter. A wider availability of better quality fuels enables to bring technologies on the market that will improve fuel efficiency and reduce greenhouse gas emissions.

2. Better Regulation

A) Global Harmonisation of Technical Standards

29. In future, the competitiveness of the industry will greatly depend on further progress in the harmonisation of motor vehicles technical regulation. JAMA would like to take this opportunity to highlight the importance of one key tool in achieving better regulation for the automotive industry: the international harmonisation of motor vehicle technical regulations through Global Technical Regulations (GTRs). This would ensure a higher level of safety, enhance environmental protection and reduce the financial burden on customers by eliminating redundancies in the development and certification of vehicles.

30. In particular, with the implementation by the EU and Japan this year of their own respective first phase pedestrian protection regulations, the global automobile industry has strong expectations that the second phase will be brought into reality in the form of a GTR on pedestrian protection.

31. In this context, the work carried out in Geneva within the framework of UN/ECE WP29 is of crucial importance and should constitute a clear priority for the industry. The potential for international harmonisation that will greatly simplify the technical and testing burden on automakers as they prepare vehicles for different markets and different technical requirements is significant.

B) Intellectual Property Rights

32. To ensure the sound growth of the global automotive industry, respect for intellectual property is important, both in industrialised and developing countries. The reason is that respect for intellectual property protects the interest of the holders of those rights. In turn this gives incentives to create intellectual property and preserves consumer trust in corporate brands, thereby ensuring suitable competition on the international market.

33. The circulation of copied goods, for which the performance of the originals cannot be guaranteed, is a problem that must not be overlooked given our responsibility for ensuring the safety of consumers and protecting the environment.

34. The European Commission is working to revise its Design Directive so as to disallow exercise of design rights for spare parts. Taking safety and environmental performance into account, JAMA opposes this move since the revision would not be in the best interest of the consumer.

35. Respect for intellectual property is essential for the transfer of cutting-edge technology and ensuring adequate levels of investments from industrialised and developing countries. Further it is essential to do whatever can be done to protect the huge investments in technologies made by companies, so that those who have not made such investments do not profit from them. It is an essential element that will contribute significantly to the growth of industry globally.

Part III: Conclusion

A) Global Solution

36. The increasingly global operations of automakers demand a global public policy solution. A key element to maintain competition will therefore be to ensure that regulations are internationally harmonized, so as to avoid redundant national or regional requirements.

B) Fair and Free Competition

37. We share the opinion of Commissioner Mandelson, as stated on 15 February, that, as the world's leading exporters of goods and services and the world's leading investors abroad, Europe's companies and investors rely on open and fair international trade to compete. Mr. Mandelson also said that Europe's trade policy "*must seek to eliminate or reduce the tariffs and non-tariff barriers that put up production costs. Industries should not be sheltered from the benefit of more competitive disciplines, a key effect of trade openness. Nor should regulation deter foreign direct investment, which is a key provider of jobs, skills and technologies*." JAMA fully support this view.

38. Trade liberalization will be key in achieving a competitive automotive industry. JAMA members are strongly committed to free trade as it is an engine of growth and ultimately greatly benefits the consumer. JAMA agrees with the fact that "*the economic benefits of greater openness – faster growth, cheaper imports, new technologies, and the spur of foreign competition – that the*

world has enjoyed in recent years are too easily taken for granted" (The Economist).

39. JAMA specifically encourages strengthened and concerted international motor vehicle industry action to achieve, as part of the Doha Round market access conclusions, a motor vehicle sectoral arrangement providing for both the elimination of tariffs on motor vehicle trade amongst the major motor vehicle trading partners and, in parallel, mechanisms to effectively address priority NTBs throughout this sector.

40. JAMA would like to take this opportunity to stress the importance of equal and fair treatment for all stakeholders, and especially in the context of the *CARS 21* initiative which is fully supported by JAMA. The contrary would not contribute to an improved competitiveness of the sector, as automotive businesses, as operated by JAMA members, are global businesses and operations.

C) Further Engagement

41. This paper highlights the current contribution of the European subsidiaries of Japanese brands to the competitiveness of the European Motor Industry. Among other things it highlights how best practices in manufacturing, employment and training have so far enabled them to do so. This was recognised by Alan Johnson (former UK Minister of State for Employment Relations, Industry and the Regions) at the launch of the UK SMMT Industry Forum: "*The skills and knowledge that the Jamasters*[4] *have imparted to our UK engineers will be used to build a more productive and competitive UK supply base*". This is again a good illustration that JAMA members are an integral part of the European automotive industry and are fully committed to the strengthening of the sector in the EU and globally.

42. JAMA does not see this paper as an end in itself, but rather as its first contribution to an evolving process. JAMA fully supports the *CARS 21* initiative and is willing to contribute in a significant manner to its objectives.

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[4] Honda, Nissan and Toyota

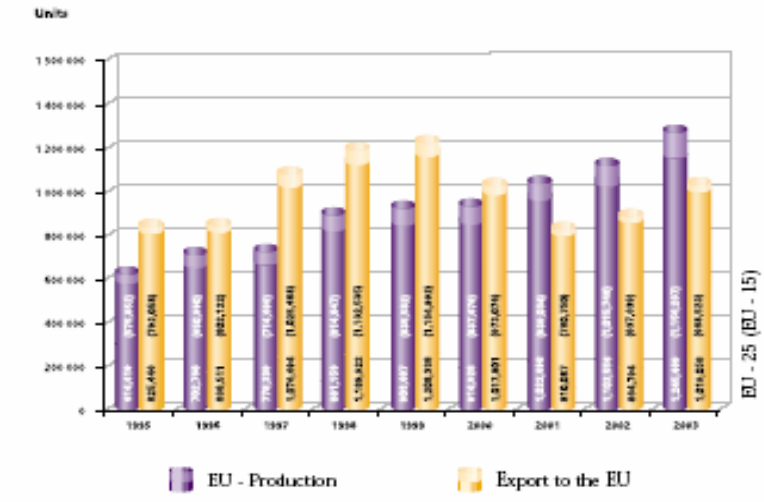
ANNEX - JAMA FACT SHEET

1. Production

Production Facilities Data

Manufacturer	*Location*	*Unit Produced (2003)*	*Employee*	*Total Investment (€million)*
1. Nissan	Sunderland (UK)	331,924	4,450	2,941
2. Nissan	Barcelona/Madrid (Spain)	98,024	3,682	1,625
3. Nissan	Avila (Spain)	18,565	750	-
4. Toyota	Valenciennes (France)	184,514	3,300	735
5. Toyota	Burnaston (UK)	210,878	4,300	2,500
6. Toyota	Ovar (Portugal)	2,413	350	-
7. Toyota	Walbrzych (Poland)	134,222	1,000	100
8. Toyota	Jelcz Laskowice (Poland) - 2005	-	350 (plan)	200
9. Toyota	Kolin (Czech Republic) - 2005	-	3,000 (plan)	1,500 (plan)
10. Honda	Swindon (UK)	184,698	4,000	1,691
11. Mitsubishi	Bairo (Italy)	8,704	537	-
12. Mitsubishi	Born (Netherlands)	163,080	4,000	2,206
13. Mitsubishi	Kölleda-Kiebitzhöle (Germany)	-	450	2,500
14. Mitsubishi Fuso	Tramagal (Portugal)	5,904	300	27.5
15. Isuzu	Tychy (Poland)	271,000	1,033	194
16. Suzuki	Linares (Spain)	21,947	589	-
17. Suzuki	Esztergom (Hungary)	88,500	2,100	-
18. Daihatsu	Pontedera (Italy)	7,970	5,000	-
TOTAL		Vehicles: 1.245 millions Others: 487,343	35,841 (39,191)	€14.7billion (€16.2billion)

Production Statistics and key facts



- Total of 18 Production facilities in 10 EU countries
- 1.245 million vehicles produced in 2003 (excluding engines)
- 2003: EU production exceeded imports from Japan
- 2003: Exports reached 160,000

2. Research &

Development

Key Facts

- 15 R&D and design centres in the EU
- Employ 2,500 people

R&D Facilities

Country	*Company*	*Employees*
UK	Honda	70
	Nissan	60
	Nissan	393
Germany	Honda	90
	Isuzu	125
	Mazda	231
	Mitsubishi	81
	Toyota	600
	Subaru	7
Netherlands	Mitsubishi	411
Spain	Nissan	197
	Subaru	2
France	Toyota	32
Belgium	Nissan	16
Belgium/Germany/UK	Toyota	233
TOTAL		2,548

3. Employment

- >36,000 jobs directly created by production facilities
- 2,500 jobs directly created by R&D centres
- 163,000 jobs indirectly in HQs, distribution centres, sales, etc
- TOTAL of about 201,500 jobs created by JAMA members (directly and indirectly)

4. Investments

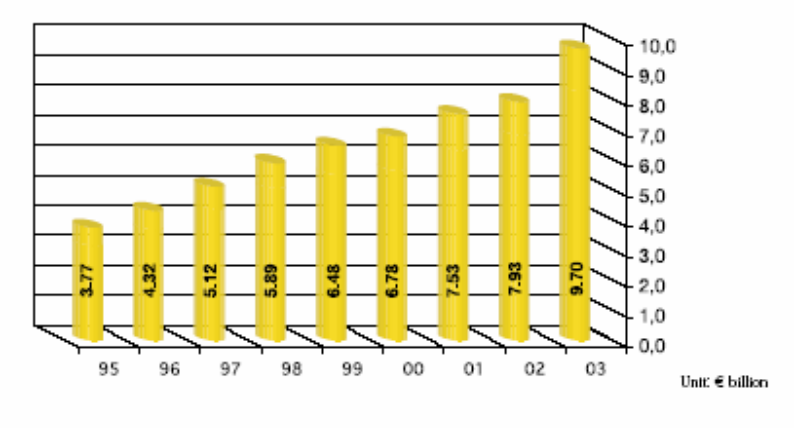
- Over €16billion invested in production facilities
- Investments in the pipeline (2005 onwards): €2.595billion

Investments in the Pipeline

Company	*Location*	*Job creation*	*Investment (€million)*
Toyota (2005)	UK	500	75
Toyota – Peugeot Citroën (2005)	Czech Republic)	3,000	1,500
Magyar - Suzuki (2005)	Hungary	400	230
Toyota (2005)	Poland	500	200
Nissan (2005)	UK	-	140
Nissan (2005)	Spain	-	400
Toyota (2009)	Belgium	200	75

5. Parts Purchasing

- Estimated at >€10billion in 2004
- European suppliers deliver >80% of the value of the parts
- To-date 7 JAMA-CLEPA conferences aimed at develop business relationship



6. Market Access

National tariffs – Passenger Cars and Commercial Vehicles

Country	*Passenger vehicle (HS:8703)*	*Commercial Vehicle (HS:8704)*
Australia	5 or 15%	5%
Brazil	35%	35%
Canada	6.1%	6.1%
China	30%	15-25%
EU	**10%**	**10/22%**
India	30%	20%
Japan	**0.00%**	**0.00%**
Malaysia	42-300%	50%
S. Korea	8%	10%
Russia	25%	5-15%
Thailand	60-80%	40-60%
USA	2.5%	4/25%

Note: it excludes special designed vehicles

7. Progress in Reducing CO_2 Emissions

- Average specific CO_2 emissions of passenger cars (petrol and diesel) registered in the EU (2003) decreased to 172g CO_2/km down from 174 g CO_2/km in 2002 (thereby meeting the 2003 intermediate target of 165 - 175 g CO_2/km). Petrol-fuelled car emissions dropped to 170g CO_2/km in 2003, down from 172g CO_2/km in 2002 and Diesel-fuelled car emissions dropped to 177g CO_2/km in 2003, down from 180g CO_2/km in 2002[5].

[5] It should be noted that JAMA data shows that the average figure for 2003 is 171 g CO_2/km (petrol + diesel). This represents a 1g deviation between official EU data and JAMA data.

- Taking the reference year into account (1995), average specific CO_2 emissions of petrol-fuelled cars recorded a decrease from 191 g CO_2/km in 1995 to 170 g CO_2/km in 2003 – an 11% reduction. The average specific CO_2 emission levels of diesel cars recorded a decrease from 239 g CO_2/km in 1995 to 173 g CO_2/km in 2003 – a 27.6% reduction.

- Successive technological improvements made these improvements possible: petrol and diesel direct injection (DI) engines, Continuous Variable Transmission Technology (CVT), hybrid technology and idle stop mechanism.

- JAMA also achieved good results with regards to low emission passenger cars: the first '120g CO_2/km or less' car on the EU market was released by JAMA in 1999, followed by a 119g CO_2/km car and a 80 g CO_2/km petrol hybrid car in 2000 and a 104 g CO_2/km petrol-hybrid car in 2003. In 2003, 74,679 JAMA cars with emissions of 120 g CO_2/km or less were registered in the EU, or a 92.5% increase on 1999 registrations.

- The positive impact of an increasing sale of low emitting passenger car is shown in the graph below which illustrates the changes in the JAMA fleet composition based on CO_2 performance. It clearly shows a shift to CO_2 efficient technologies, with the largest percentage (>25%) falling in the 141-160 g CO_2/km in 2003, whereas in 1995 the largest percentage (>30%) was in the 181-200 g CO_2/km bracket.

Table 1: JAMA's Fleet Composition per CO2 emissions (petrol + diesel) in 1995

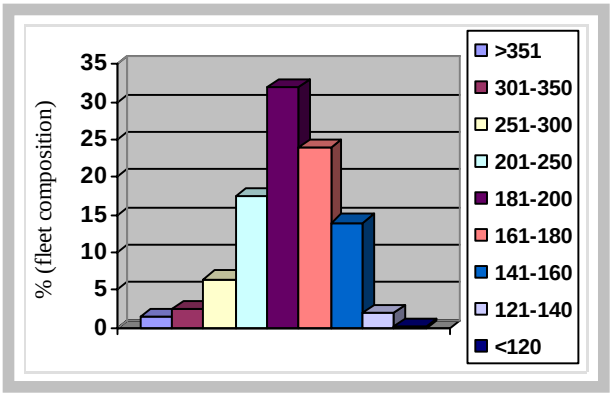
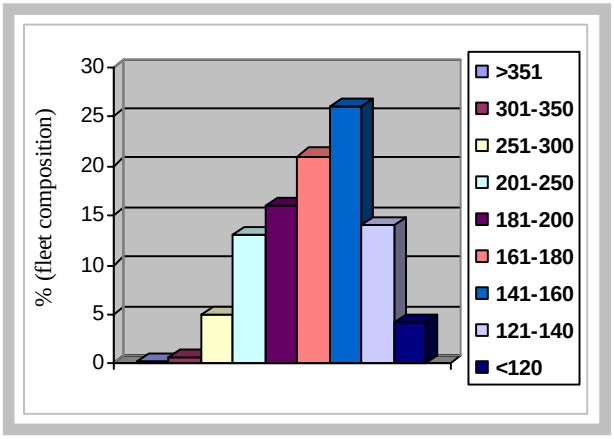


Table 2: JAMA's Fleet Composition per CO2 emissions (petrol + diesel) in 2003



8. Fuel Quality and Targets (World-Wide Fuel Charter)

In the EU the so-called category 4 in the WWFC applies to the EU and the recommended figures for fuel quality are:

1. Gasoline

PROPERTIES		UNITS	LIMIT	
			Min.	Max.
'91 RON' (1)	Research Octane Number	-	91.0	--
	Motor Octane Number	-	82.5	--
'95 RON' (1)	Research Octane Number	-	95.0	--
	Motor Octane Number	-	85.0	--
'98 RON' (1)	Research Octane Number	-	98.0	--
	Motor Octane Number	-	88.0	--
Oxidation stability		minutes	480	--
Sulfur content		mg/kg	--	Sulfur-free (2)
Metal content (Fe,Mn,Pb,other)		g/l	Non-detectable (3)	
Phosphorus content		mg/l	Non-detectable (3)	
Silicon content		mg/kg	Non-detectable (3)	
Oxygen content		% m/m	--	2.7 (4)
Olefins content		% v/v	--	10.0
Aromatics content		% v/v	--	35.0
Benzene content		% v/v	--	1.0
Volatility			See Following Tables, page 11	
Sediment		mg/l	--	1
Unwashed gums (5)		mg/100 ml	--	30
Washed gums		mg/100 ml	--	5
Density		kg/m³	715	770
Copper corrosion		merit	Class 1	
Appearance			Clear and Bright	
Fuel injector cleanliness		% flow loss	--	5
Intake-valve sticking		pass/fail	Pass	
Intake valve cleanliness II				
Method 1 (CEC F-05-A-93), or		avg. mg/valve	--	30
Method 2 (ASTM D 5500), or		avg. mg/valve	--	50
Method 3 (ASTM D 6201)		avg. mg/valve	--	50
Combustion chamber deposits (5)				
Method 1 (ASTM D 6201), or		% of base fuel		140
Method 2 (CEC-F-20-A-98), or		mg/engine	--	2500
Method 3 (TGA FLTM BZ154-01)		% mass. @ 450° C		20

2. Diesel

PROPERTIES	UNITS	LIMIT	
		Min.	Max.
Cetane Number	-	55.0 (1)	--
Cetane Index	-	52.0 (2)	--
Density @ 15°C	kg/m³	820 (3)	840
Viscosity @ 40°C	mm²/s	2.0 (4)	4.0
Sulfur content	mg/kg	--	sulfur-free (5)
Total aromatics content	% m/m	--	15
Polyaromatics content (di+tri+)	% m/m	--	2.0
T90 (6)	°C	--	320
T95 (6)	°C	--	340
Final Boiling Point	°C	--	350
Flash point	°C	55	--
Carbon residue	% m/m	--	0.20
CFPP (7) or LTFT or CP	°C	--	Maximum must be equal to or lower than the lowest expected ambient temperature
Water content	mg/kg	--	200
Oxidation stability	g/m³	--	25
Foam volume	ml	--	100
Foam vanishing time	sec.	--	15
Biological growth	-	'Zero' content	
FAME content	% v/v	Non-detectable (8)	
Ethanol/Methanol content	% v/v	Non detectable (8)	
Total acid number	mg KOH/g	--	0.08
Ferrous corrosion	-	--	Light rusting or less
Copper corrosion	merit	Class 1	
Ash content	% m/m	--	0.01
Particulates	mg/l	--	10 (9)
Appearance		Clear and bright	
Injector cleanliness	% air flow loss	--	85
Lubricity (HFRR wear scar dia. @ 60°C)	micron	--	400

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