



SOCIO-ECONOMIC ASPECTS

PROHIPP – 4TH REPORTING PERIOD GENERAL MEETING

VIC (Barcelona) on 26th and 27th May 2008

PROHIPP- 4th Reporting Period General meeting – VIC (Barcelona) on 26th and 27th May 2008 - WP10 SOCIO-ECONOMIC ASPECTS



T10.1 Potential impacts

1. Tracker markets for mobile hydraulic cylinders:

- a) Construction machinery (≈8 cylinders/machine)
- b) Agricultural tractors (≈4 cylinders/machine)

2. Mobile hydraulic cylinder markets (estimated)

3. Conditioning factors:

- a) Raw material availability/cost
- b) Exchange rates
- c) Others

4. Potential impact from PROHIPP knowledge:

- a) Improved and PREDICTABLE product life
- b) Reduced material content without downside
- Innovative materials and processes > original & costeffective design solutions

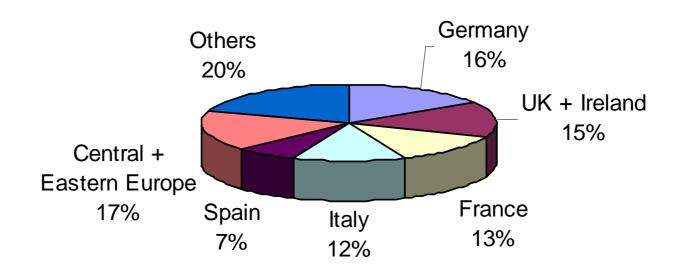


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T10.1 Tracker markets – 1a Construction machinery

Construction machinery sales in Europe 2007 (total quantity = 219 000 units)



Sources: Committee for European Construction Equipment, Off-Highway Research (UK),



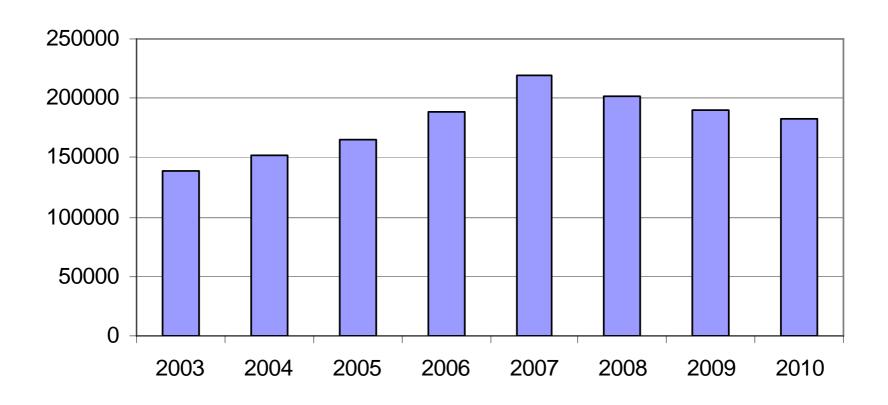
UNACOMA (IT), VDMA (D)

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T10.1 Tracker markets – 1a Construction machinery

Construction machinery sales in Europe (units)



Sources: Committee for European Construction Equipment, Off-Highway Research (UK), UNACOMA (IT), VDMA (D)



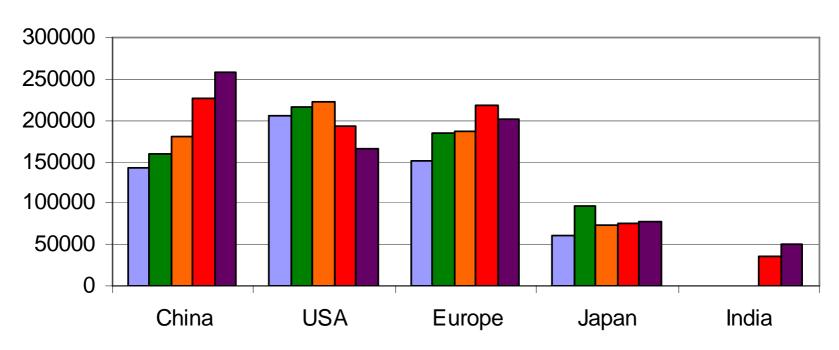
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T10.1 Tracker markets – 1a Construction machinery

Construction machinery sales (units)





Sources: Committee for European Construction Equipment, Off-Highway Research (UK), UNACOMA (IT), AEM (USA)

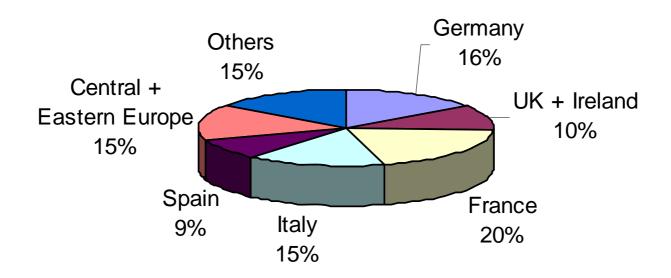


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T10.1 Tracker markets – 1b Agricultural tractors

Agricultural tractor sales in Europe 2007 (total quantity = 190 079 units)



Sources: VDMA (D), SYGMA (F), ACAP (P), DGT (E), Kubota (Spain, USA & Japan)

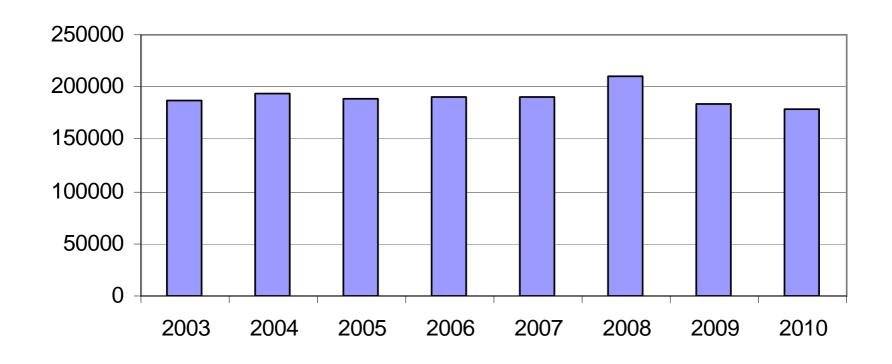


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T10.1 Tracker markets – 1b Agricultural tractors

Agricultural tractor sales in Europe (units)



Sources: VDMA (D), SYGMA (F), ACAP (P), DGT (E), Kubota (Spain)



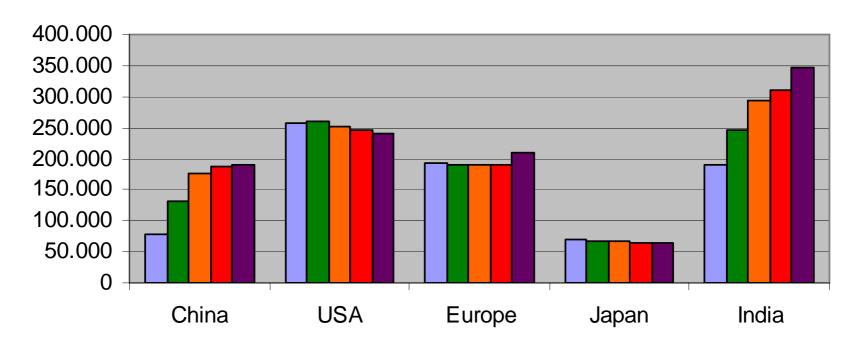
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T10.1 Tracker markets – 1b Agricultural tractors

Tractor sales (units)





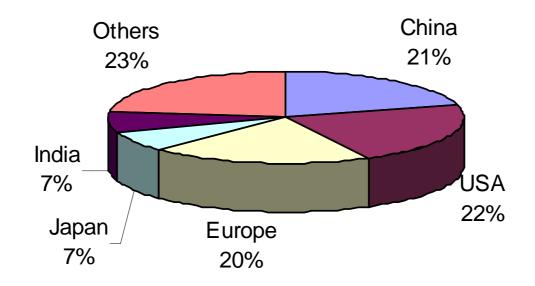
Sources: VDMA (D), SYGMA (F), ACAP (P), DGT (E), Kubota (Spain, USA & Japan), Off-Highway Research (UK)





T10.1 Mobile hydraulic cylinder markets (estimated)

Mobile hydraulic cylinder markets (2007 estimated world market 58 million cylinders)



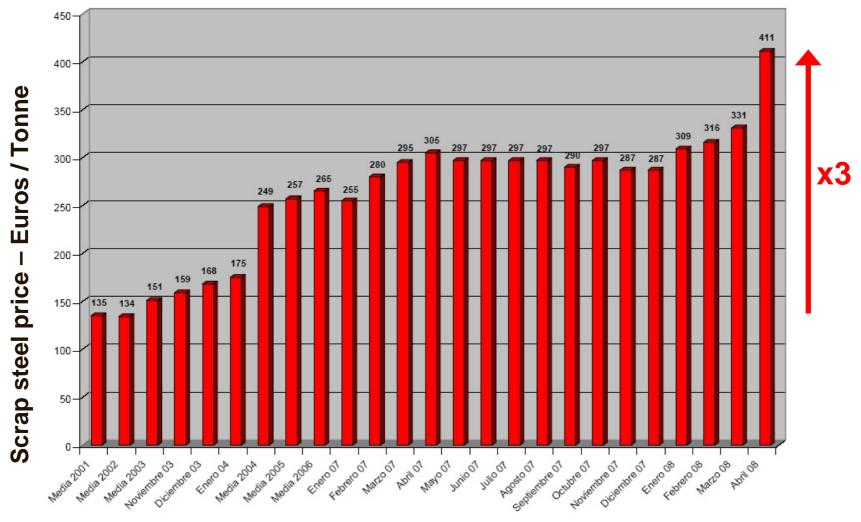
Sources: CETOP, AIFTOP, BFPA, NFPA, JFPA, + Roquet estimations



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T10.1 Conditioning factors – 2a Raw material availability/cost



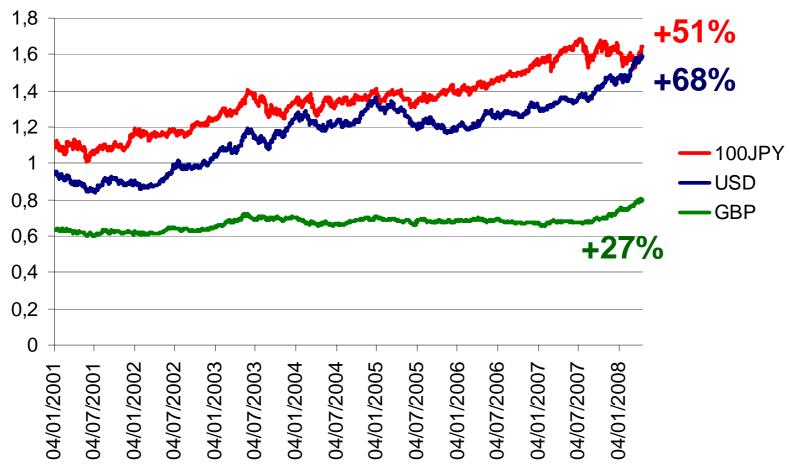
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T10.1 Conditioning factors – 2b Exchange rates

Euro exchange rates



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T10.1 Conditioning factors – 2c Others

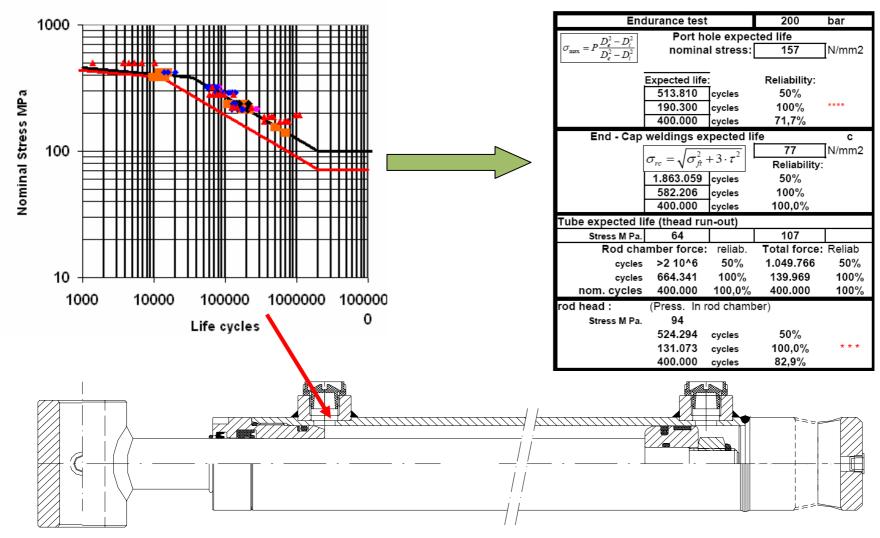
- Housing/bank crisis USA (early-2007) and UK (early 2008)
- Housing crisis Spain and Ireland (mid-2007) other countries to follow?
- Payment terms large rental customers
- Oil Price / Energy prices
- Cereal prices
- Rising interest rates and inflation
- Political uncertainty in USA
- Low-cost machines from China?
- "Grey" market imports from Japan etc.
- CE marking, noise and safety standards etc.



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T10.1 PROHIPP knowledge impacts – 4a product life

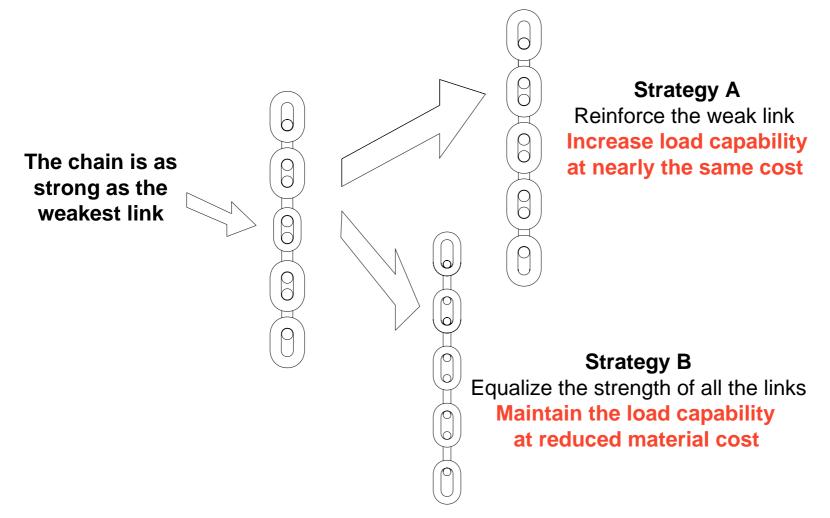


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T10.1 PROHIPP knowledge impacts – 4b less material content





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T10.1 PROHIPP impacts – 4c innovative materials / processes

1. Cast-iron cylinders

- a) Short-stroke cast vertically for high-yield
- b) Hollow cores for low cost and excellent gasremoval

2. Cylinder piston-over-port damping

- a) Low cost if honing tubes after welding
- b) Not highly diameter-tolerance dependant
- c) "Tuneable" to application with groove spacing

3. Cylinder rod plating process

- a) Less chrome
- b) Higher corrosion resistance



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T10.2 Diffusion factors

1. Resistance to change

- a) Change = risk and/or threat
- b) Investment for new product or process
- c) Perceived "pay-off"

2. Visibility

- a) Exhibitions
- b) Technical press / magazines
- c) Internet

3. Peer pressure

- a) Major customers using technology
- b) Competitors using technology



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- a) Change = risk and/or threat
- b) Investment for new product or process
- c) Perceived "pay-off"

2. Visibility

- a) Exhibitions BAUMA Shanghai 2006, Hannover 2007, BAUMA (D) 2007, BICES Beijing 2007, CONEXPO (USA) 2008, BAUMA Shanghai 2008
- b) Technical press / magazines IVT Annual Review July 2008
- c) Internet PROHIPP.com, project participant webs etc.
- d) Video May 2008

3. Peer pressure

- a) Major customers using technology
- b) Competitors using technology



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