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Transformational Changes: Putting Sustainability at the Heart of Action



環境省 戦略的研究開発領域課題 (S-16)  
**PECoP-Asia**  
Policy Design and Evaluation to Ensure Sustainable  
Consumption and Production Patterns in Asian Region

# Looking at SDGs Through a Resource Lens

*Upper stream approach  
from life cycle perspective*

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# New-generation vehicle is good for climate change, but needs new materials



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**HV & PHV**



*Nickel, Lithium & Misch Metal, etc.*

*Platinum Group Metals (catalysts)*

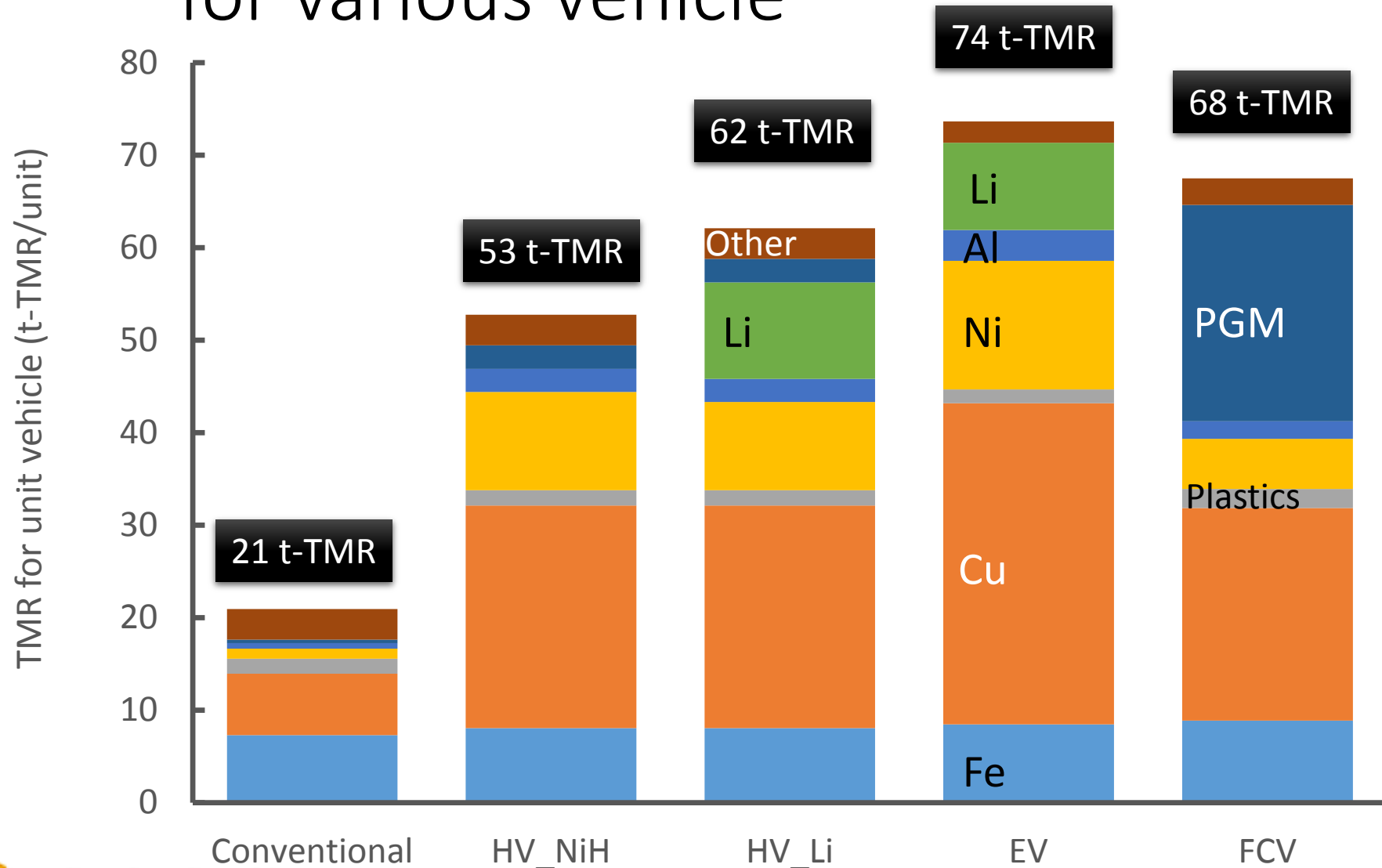


**FCV**

*Materials not used so far are newly and extensively used.*

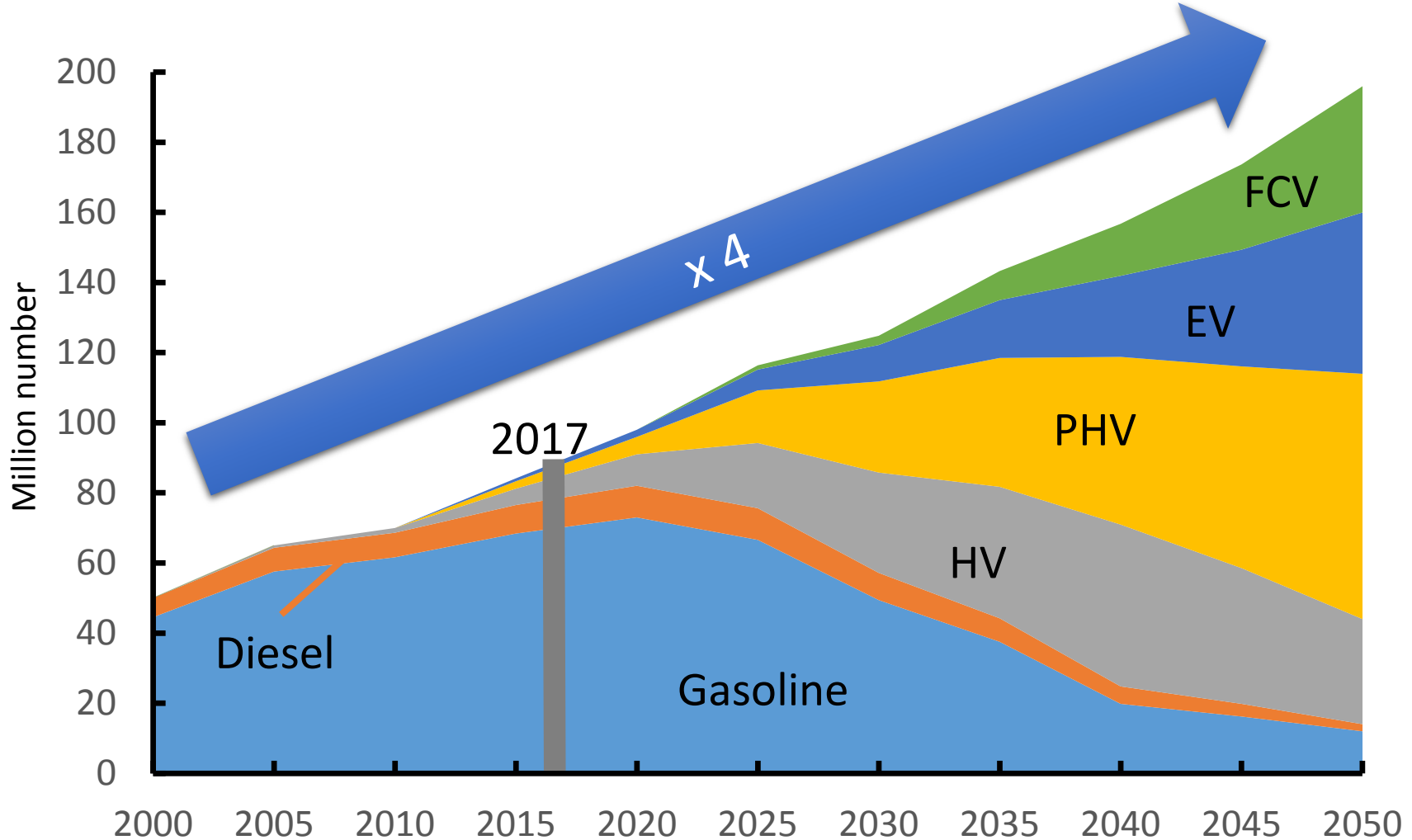


# TMR: Primary resource for various vehicle



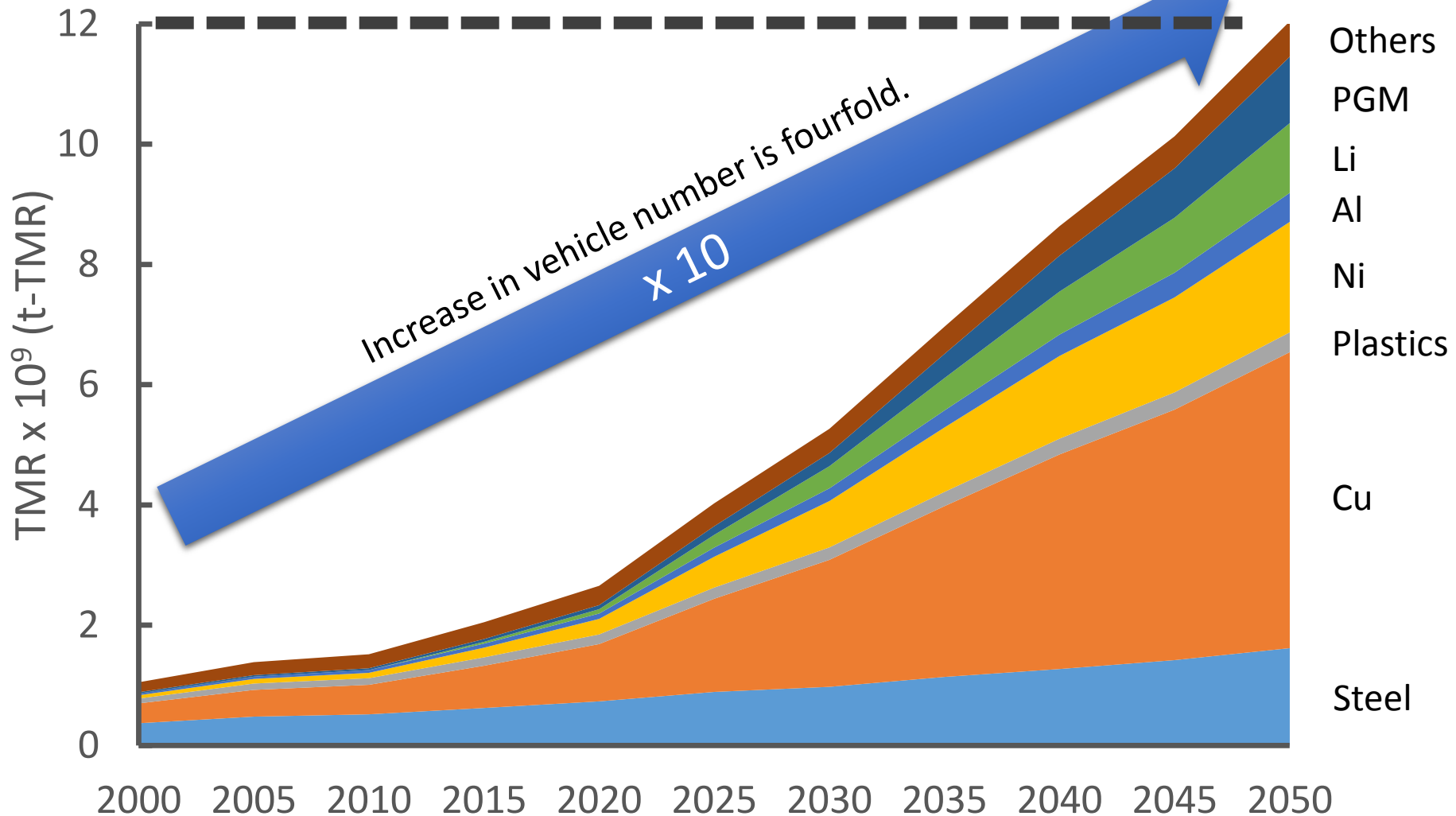


# Global sales trend of vehicles



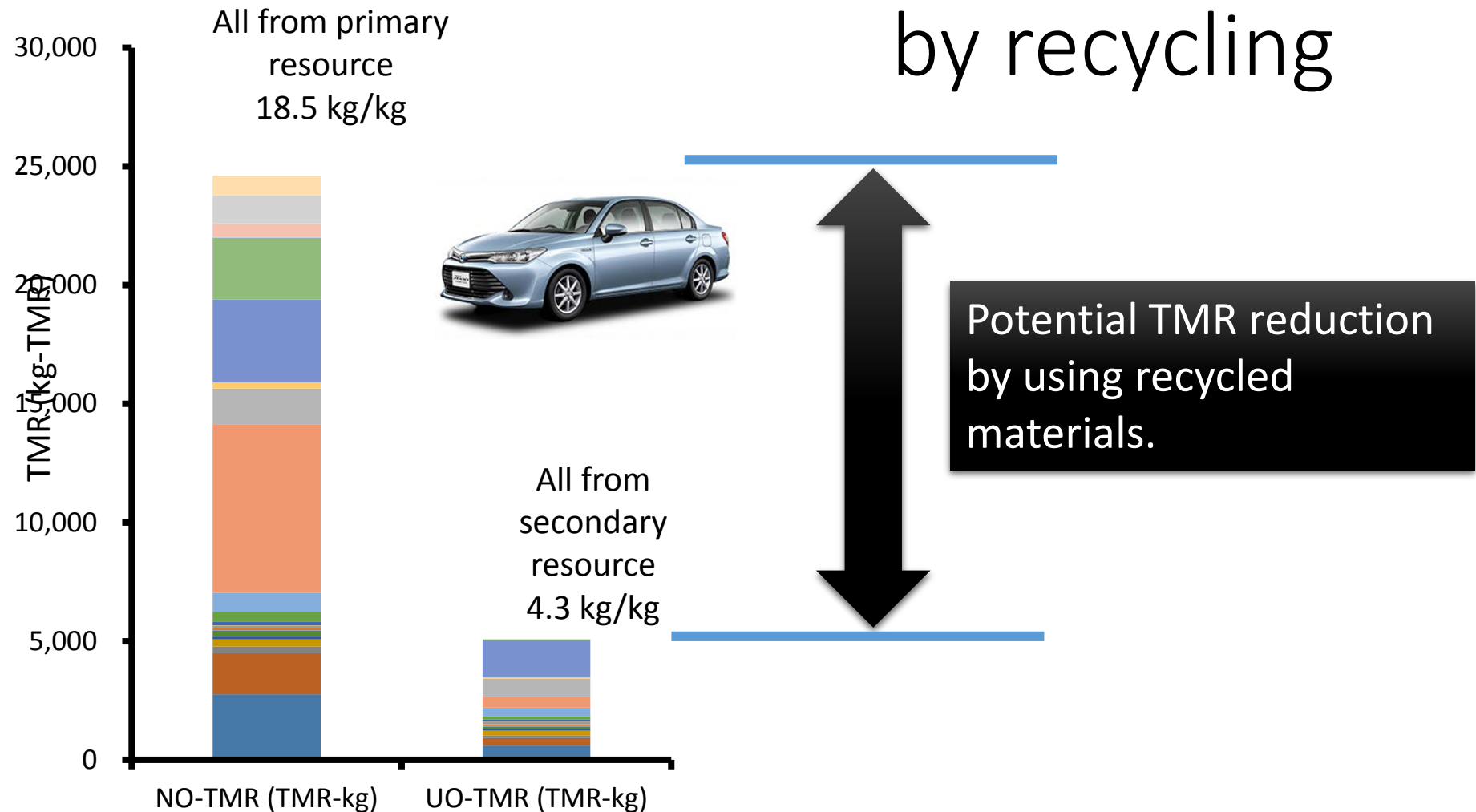


# TMR for the vehicles production





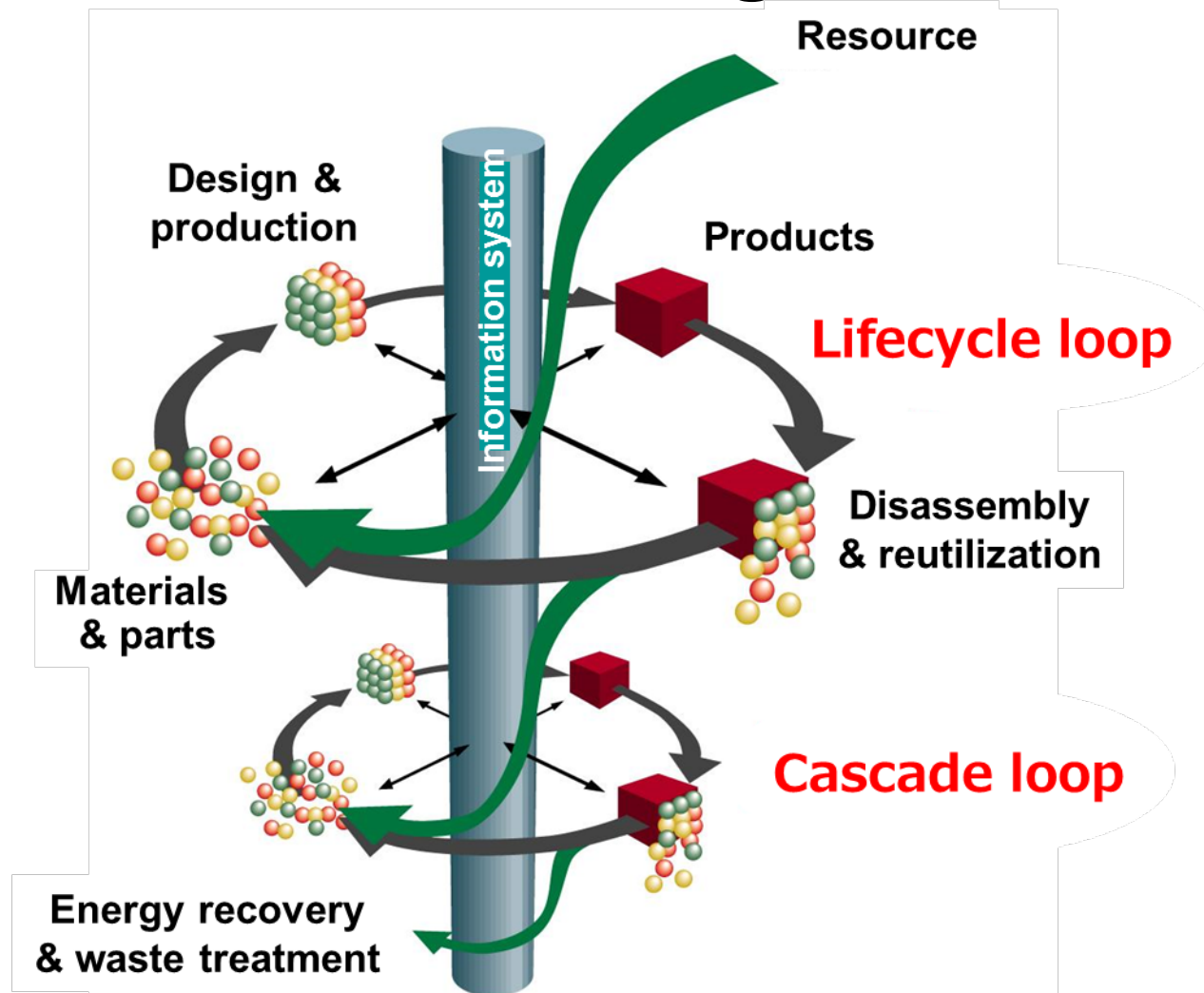
# Potential of TMR reduction by recycling



*By using urban resource, TMR can be extremely reduced to 1/5~1/4.*

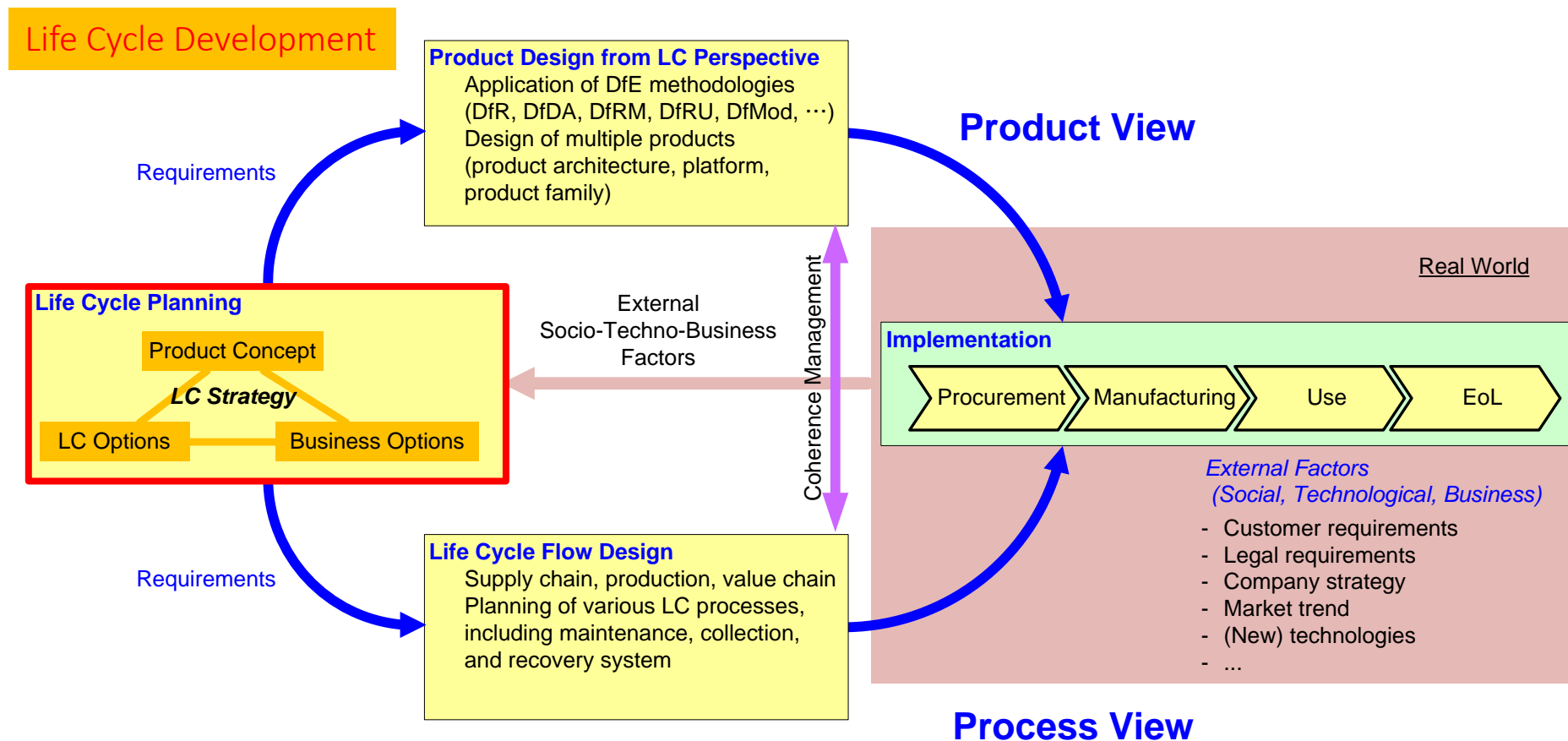


# Inverse Manufacturing: since 1990's





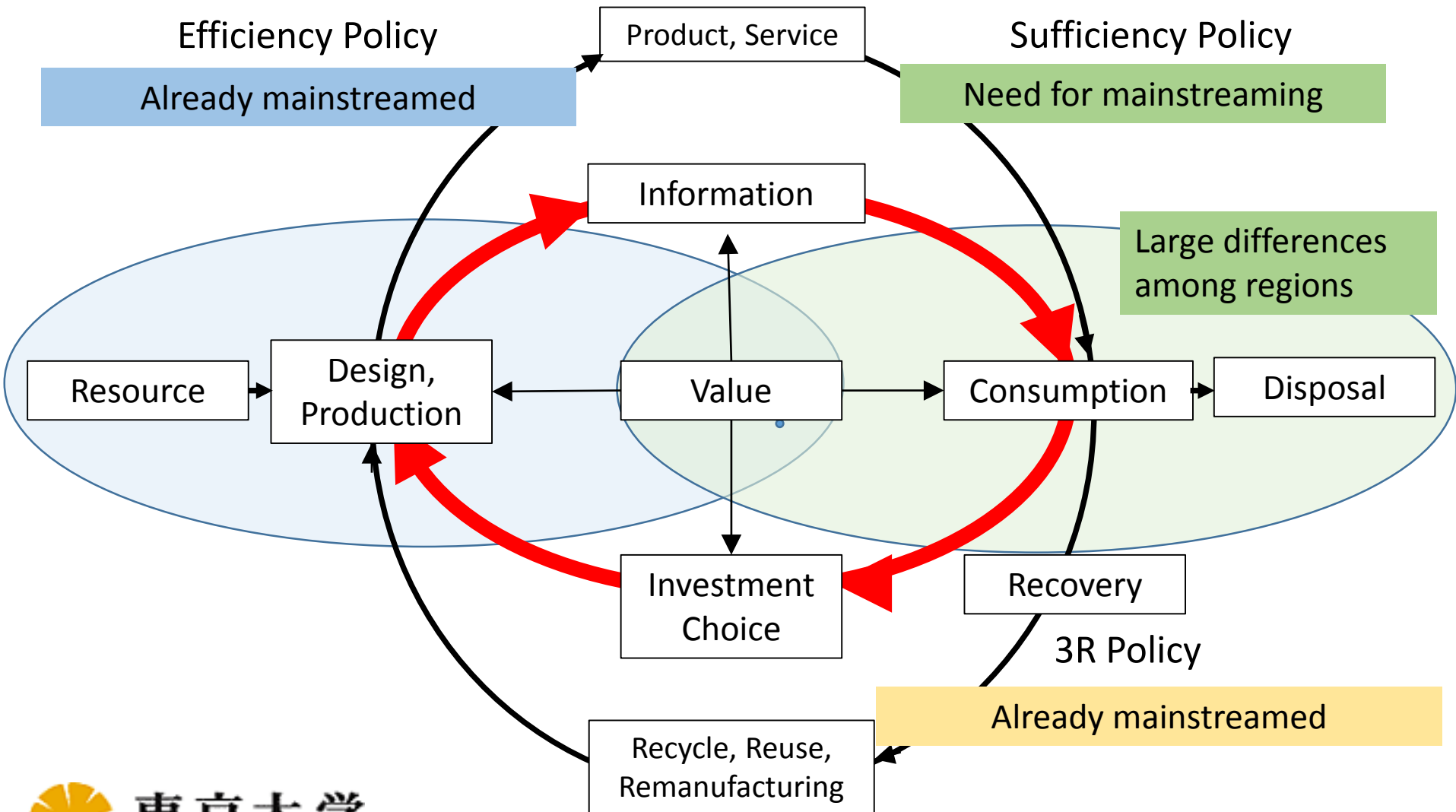
# Integration of product design and life cycle flow design







# Mainstreaming Sustainable Consumption and Production





# Upper stream approach from life cycle perspective

- Consider resource efficiency (Goal12) as well as energy efficiency (Goal13)
  - Design and production from life cycle perspective
  - Product life extension by reuse, re-manufacturing
  - Materials recycling
- Collaboration with “Consumption”
  - Collection of used products
  - New business model ex. Servicizing, Sharing