



# **PERSIDANGAN KEBANGSAAN TEKNOLOGI HIJAU**

**June 9-10, 2014**

## **Private Sector's Role in Green Technology Development in Malaysia**

**by**

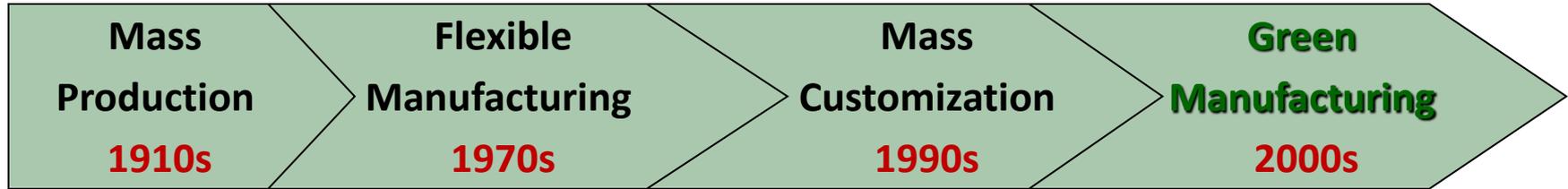
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**Energy Management Committee**



# Evolution of Manufacturing Process



Move non-essential elements outside productive time



Minimise working capital



Include whole life cycle cost of environmental impact, externalities

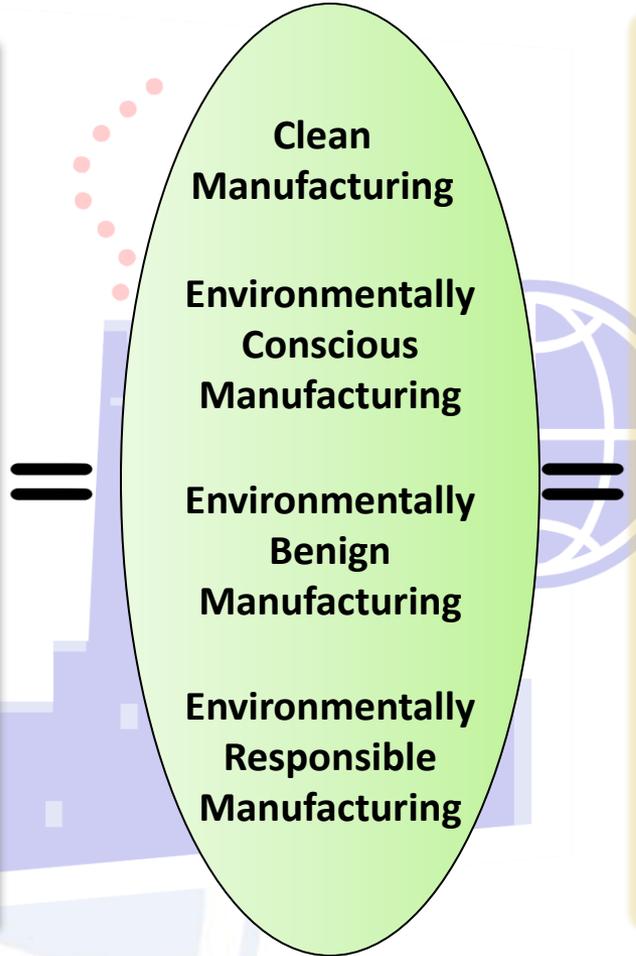


New facility: Kasai Green Energy Park



# Relation between Green Technology & Green Manufacturing?

**Green Technology**  
- The development and application of products, equipment and systems used to conserve the natural environment and resources, which minimizes and reduces the negative impact of human activities.



**Green Manufacturing**  
- system that integrates product & process design issues with issues of manufacturing, planning & control in such a manner as to identify, quantify, assess & manage the flow of environmental waste with the goal of reducing & ultimately minimizing environmental impact while also trying to maximize resource efficiency

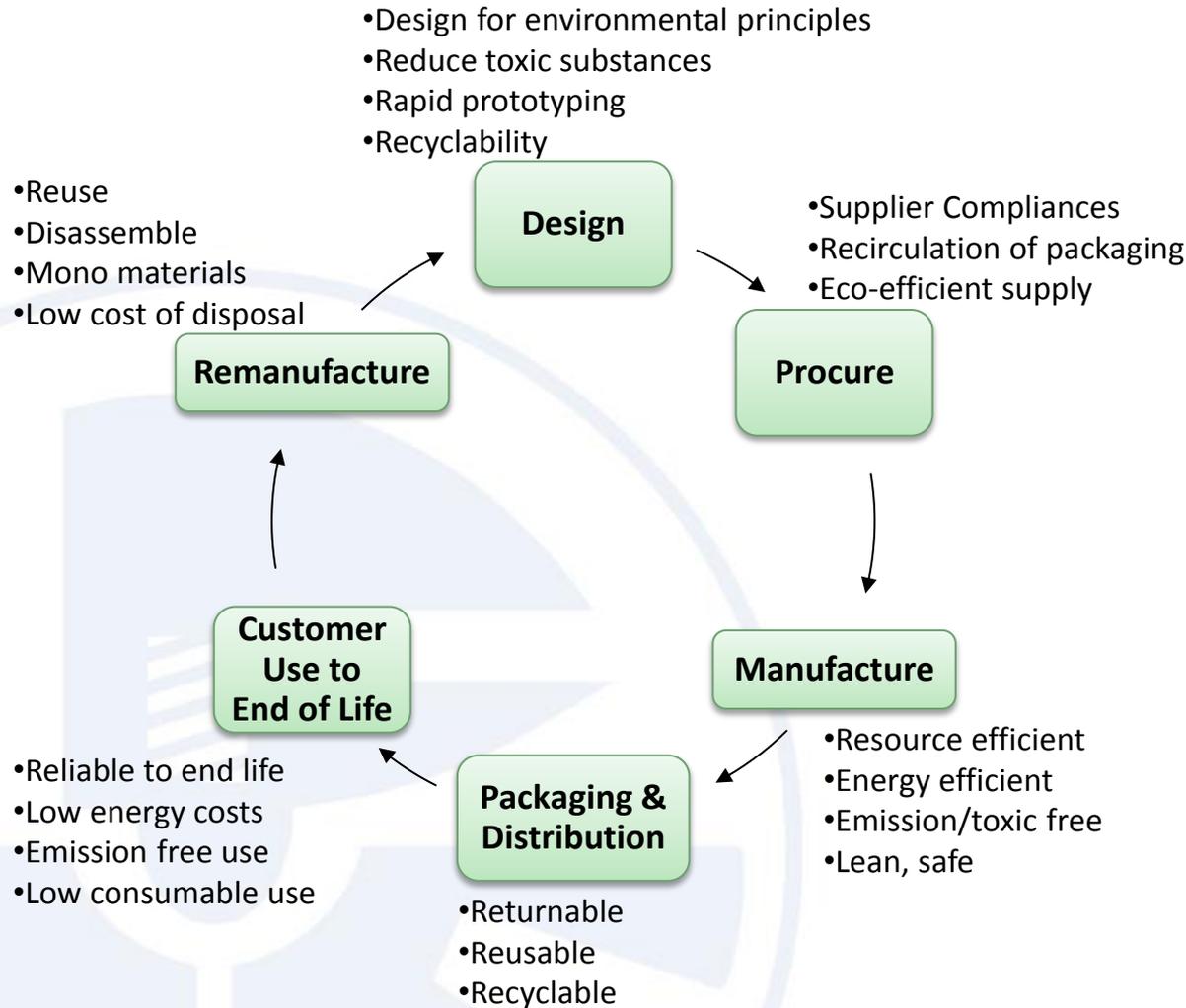
- *Melnyk and Smith*

**Primary Goals**

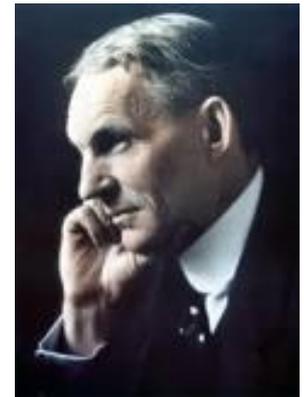
**Design & deliver products that minimize negative effects on the environment through production, use & disposal**



# Green Manufacturing: The Fundamentals



*“... we will not so lightly waste material simply because we can reclaim it – for salvage involves labor. The ideal is to have nothing to salvage.” – Henry Ford’s “Today and Tomorrow” (1926)*





# Why Green Manufacturing?

## Competitiveness

- Potential competitive advantage
- Growth opportunity
- New technology opportunities
- Ability to enter new markets
- Product development
- Leverage existing markets
- Potential cost savings/increase efficiency
- Scarcity of resources/risk

## Corporate Social Responsibility

- Reduce CO2
- Greener Image
- Customer /consumer/society expectations/ requirements

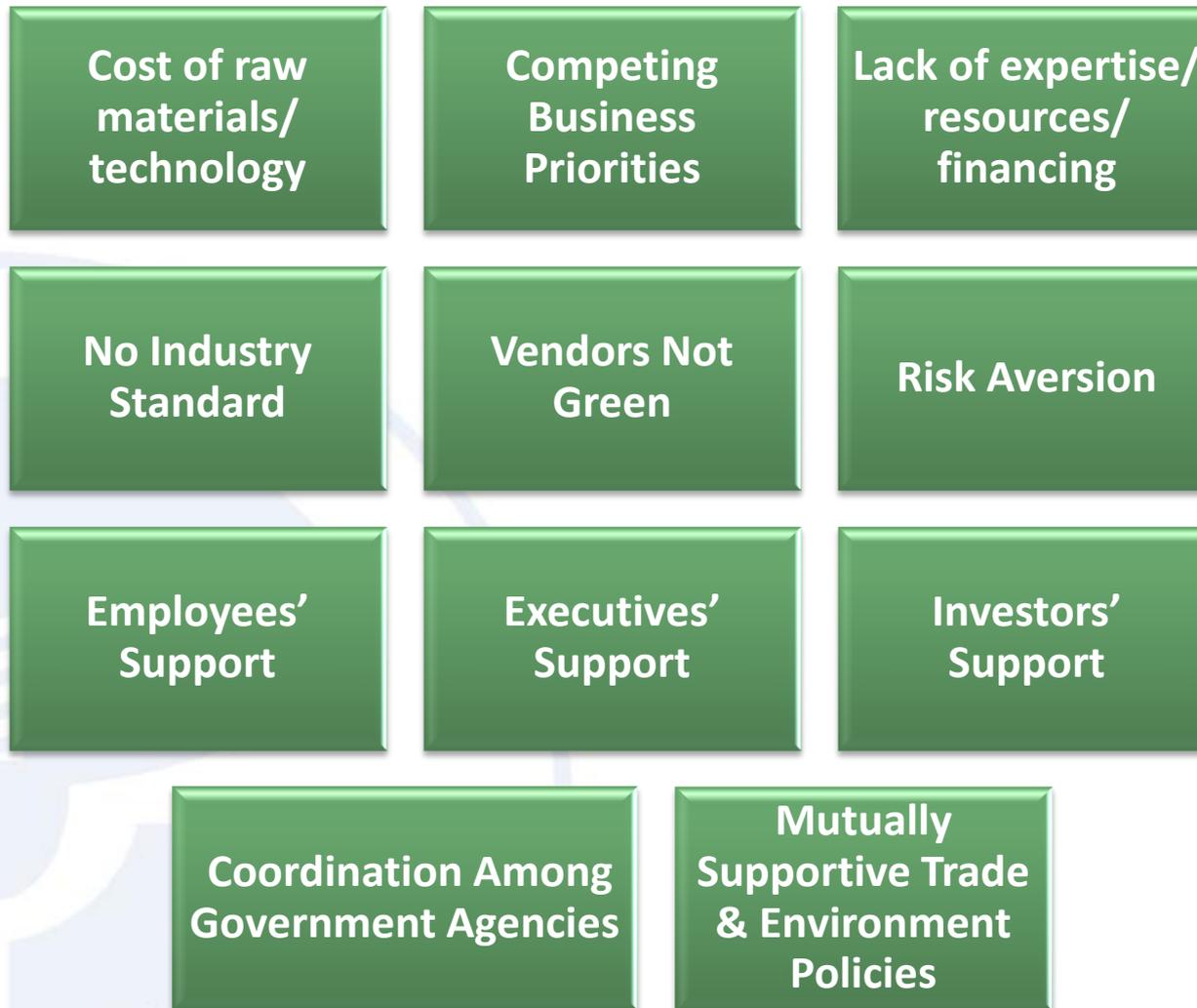
## Legislation

- Regulations
- Penalties
- Tax Benefits

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# Challenges in Applying GT in Manufacturing





# GT Opportunities in Manufacturing



Manufacturing for energy & environmentally aware consumers



Developing systems for energy & environmentally aware sectors - energy, transport, medical/health, lifestyle, dwelling, defense & food/water supply



Developing/manufacturing machine tools using less energy, materials, space



Efficient factory operation



Complying with legislation requirements



# Private Sector Roles in GT Development

## Support & Participation in Voluntary Programmes

- UNIDO Industrial Energy Efficiency in Malaysian Manufacturing Sector (IEEMMS) – ISO 50001
- MYCarbon Programme
- E-Waste Take Back Scheme

## Investment in R&D

- Product/ packaging improvement
- Production waste minimisation
- Sustainable consumption of resources – energy, water etc

## Sharing of Best Practices

- Dissemination across supply chain – vendors
- Industry Forum/Seminar/Workshop
- Consumer education

## Constructive Engagement with Government Agencies

- Exchange of ideas on effective instruments to facilitate industries transition to GT



## Conclusion

Applying GT in manufacturing presents big opportunities for industry/manufacturing

- New products/services/market leadership
- Improve overall performance & efficiency
- Competitive edge, reduce risk (environmental impact & penalty for non-compliance)
- Take advantage of growing regulatory environment
- Part of successful sustainable business strategy

Concerted Effort of Various Stakeholders to Move Forward

- Individual companies alone could not solve the environmental problems
- Consolidated and concerted efforts of industry, government and society



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**THANK YOU**