
BEYOND
SMART CITIES
LEARN.BEYONDSMARTCITIES.IN
WELCOME TO
BEYOND SMART SUSTAINABLE MANUFACTURING - BSSM
ONLINE TRAINING
KRISHNAJI PAWAR - CEO & FOUNDER



04. SUSTAINABILITY: WHAT ARE THE ISSUES?

SECTION - SMART SUSTAINABLE MANUFACTURING

BEYOND SMART CITIES

ENVIRONMENTAL INITIATIVES

- Industry executives are increasingly aware that the environment is a restricting resource rather than a commercial component.
- This understanding has encouraged over 30 South African firms and industry organisations to join a voluntary Energy Efficiency Accord with the DME to minimize their energy use. This deal aims to reduce industrial "final energy demand" by 15% and increase energy efficiency in all sectors by 12% by 2015.
- To succeed, firms require customer help in many areas. Hybrid automobiles that substantially lower carbon dioxide emissions are being produced by more automakers, which is promising. Caterpillar's ACERT Tier-3 engine emissions technology is also lowering emissions.
- The number of organizations with ISO 14001 environmental management systems is a useful indicator of environmental awareness. ISO 14000 standards examine how an organization reduces its environmental impact and improves its environmental performance. In 2004, ISO 14000 certifications increased 37% to approximately 90,500.
- Carbon credit trading between greenhouse gas reducers and polluters is intriguing. The 2002 Johannesburg Earth Summit introduced this notion. Manufacturers now include it into investment choices. Green energy premiums in several countries are providing new economic prospects for enterprises like ours.

BEYOND
SMART CITIES



Businesses need to be accountable

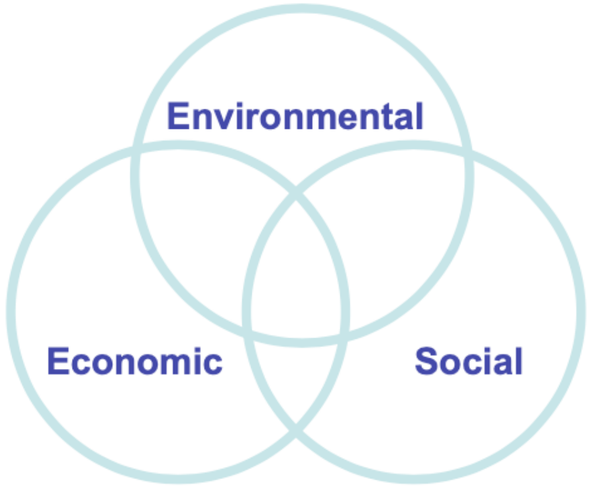
The participation of stakeholders and transparent communication with them is an essential part of sustainable development. The rapidity with which many manufacturing organizations are adopting the reporting framework developed by the Global Reporting Initiative (GRI) is indicative of the degree to which corporations have acknowledged the need to be transparent and are willing to accept scrutiny from stakeholders over all of their operations.

BEYOND SMART CITIES

SUSTAINABILITY: WHAT ARE THE ISSUES?

United Nations indicators of “sustainability”:

- Greenhouse gas
- Ozone layer
- Air quality
- De-forestation
- Desertification
- Agriculture
- Bio-diversity
- Toxic chemicals
- Non-renewable material
- Hazardous waste
- Waste volume
- Water



- Poverty
- Gender equality
- Nutrition
- Child mortality
- Sanitation
- Health
- Education
- Housing
- Crime
- Population
- (Employment)

http://www.un.org/esa/sustdev

BEYOND SMART CITIES



SUSTAINABILITY IS THE KEY TO FUTURE SUCCESS

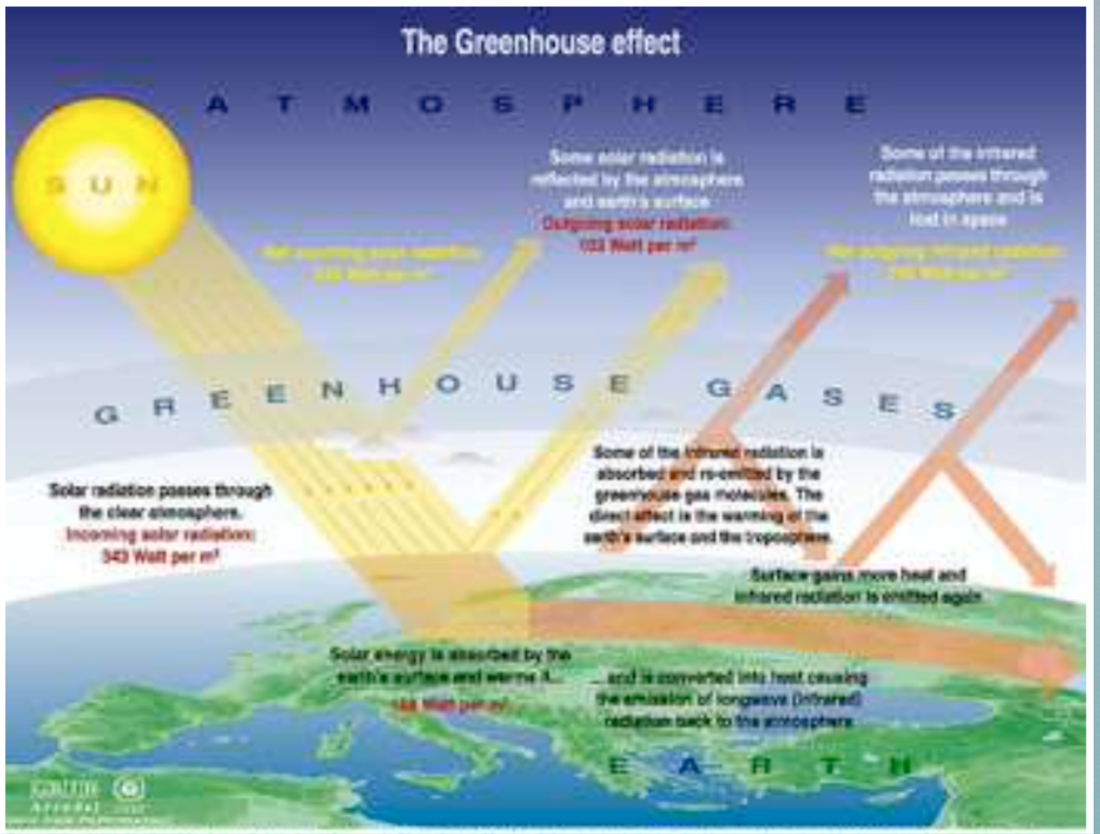
Sustainable development must be an inherent part of any company's culture if it is to thrive over the long term. Value-Based Management is the process of creating value for all stakeholders, shareholders, employees, customers and social and environmental communities. Companies must strive to move faster and gain societal support to sustain growth.



SUSTAINABILITY: WHAT ARE THE ISSUES?

- Greenhouse gas
- Ozone layer
- Air quality
- De-forestation
- Desertification
- Agriculture
- Bio-diversity
- Toxic chemicals
- Non-renewable material
- Hazardous waste
- Waste volume
- Water

Source http://www.grida.no/climate/vital/index.htm

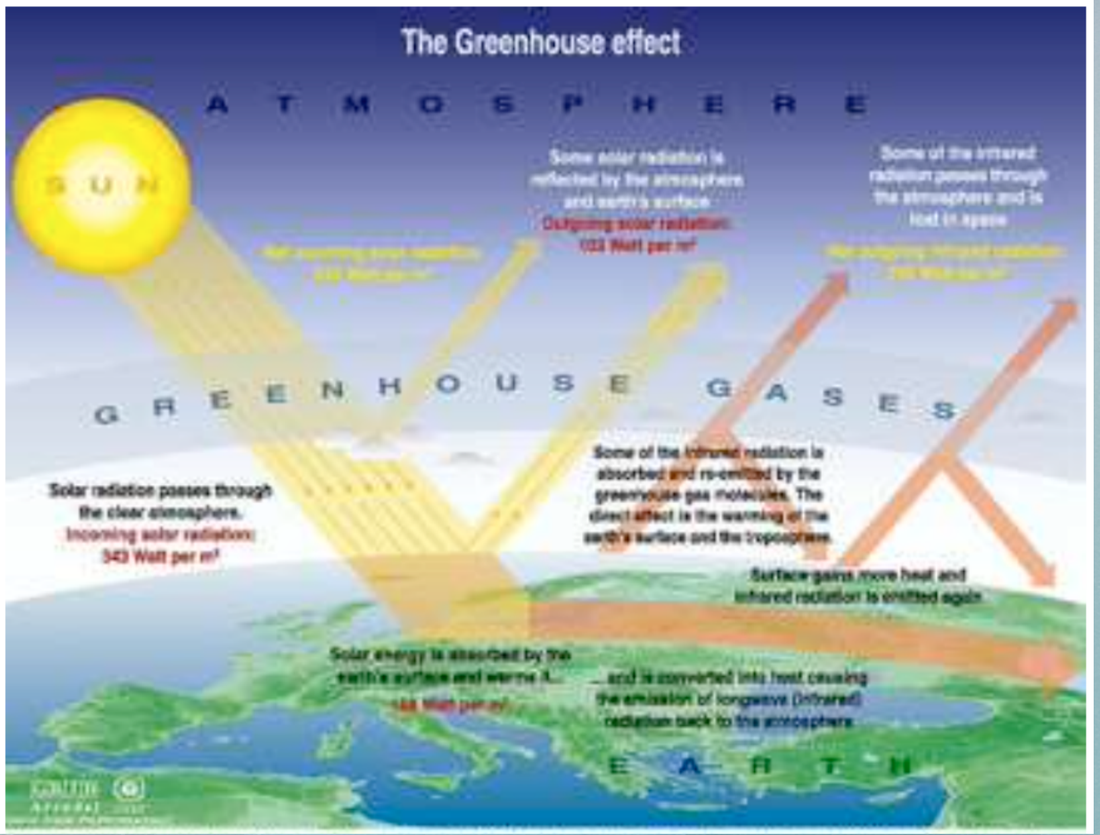


BEYOND SMART CITIES

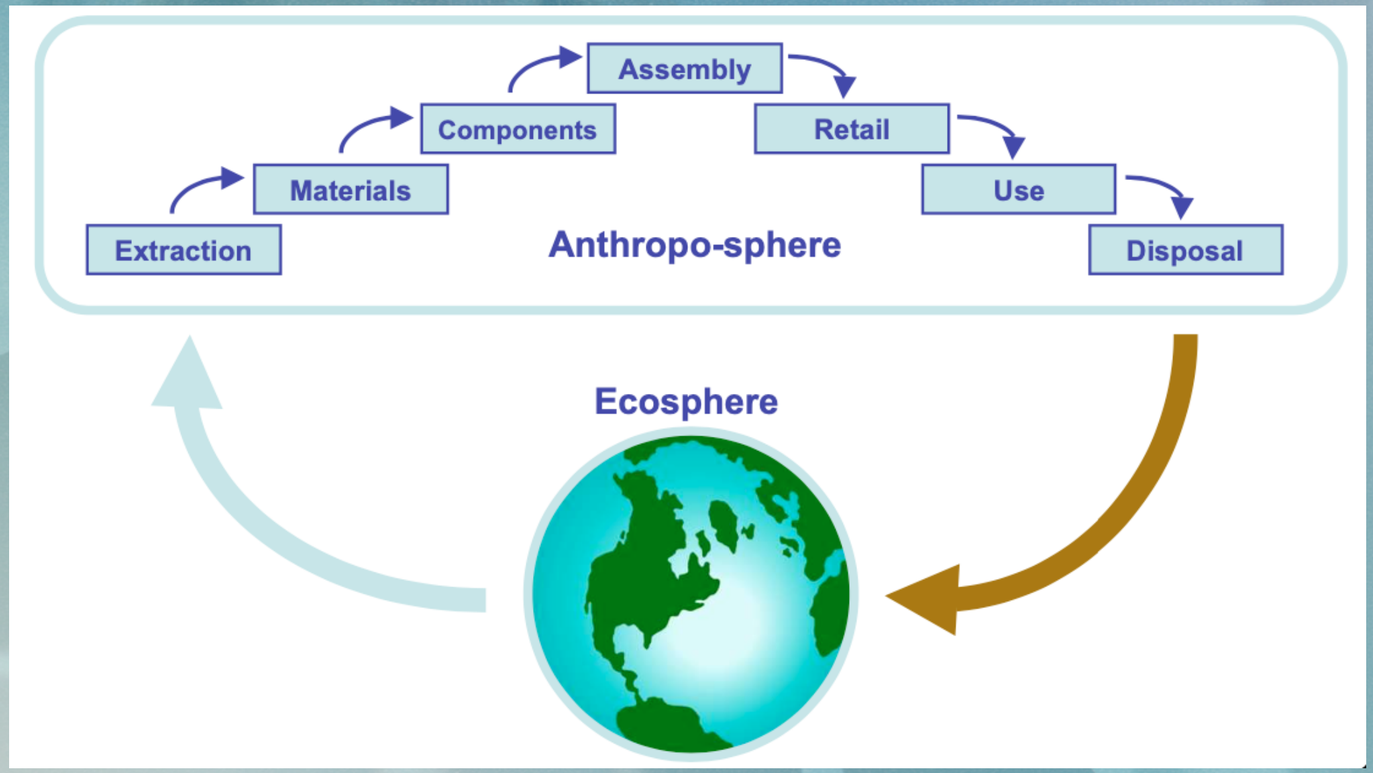
SUSTAINABILITY: WHAT ARE THE ISSUES?

- Greenhouse gas
- Ozone layer
- Air quality
- De-forestation
- Desertification
- Agriculture
- Bio-diversity
- Toxic chemicals
- Non-renewable material
- Hazardous waste
- Waste volume
- Water

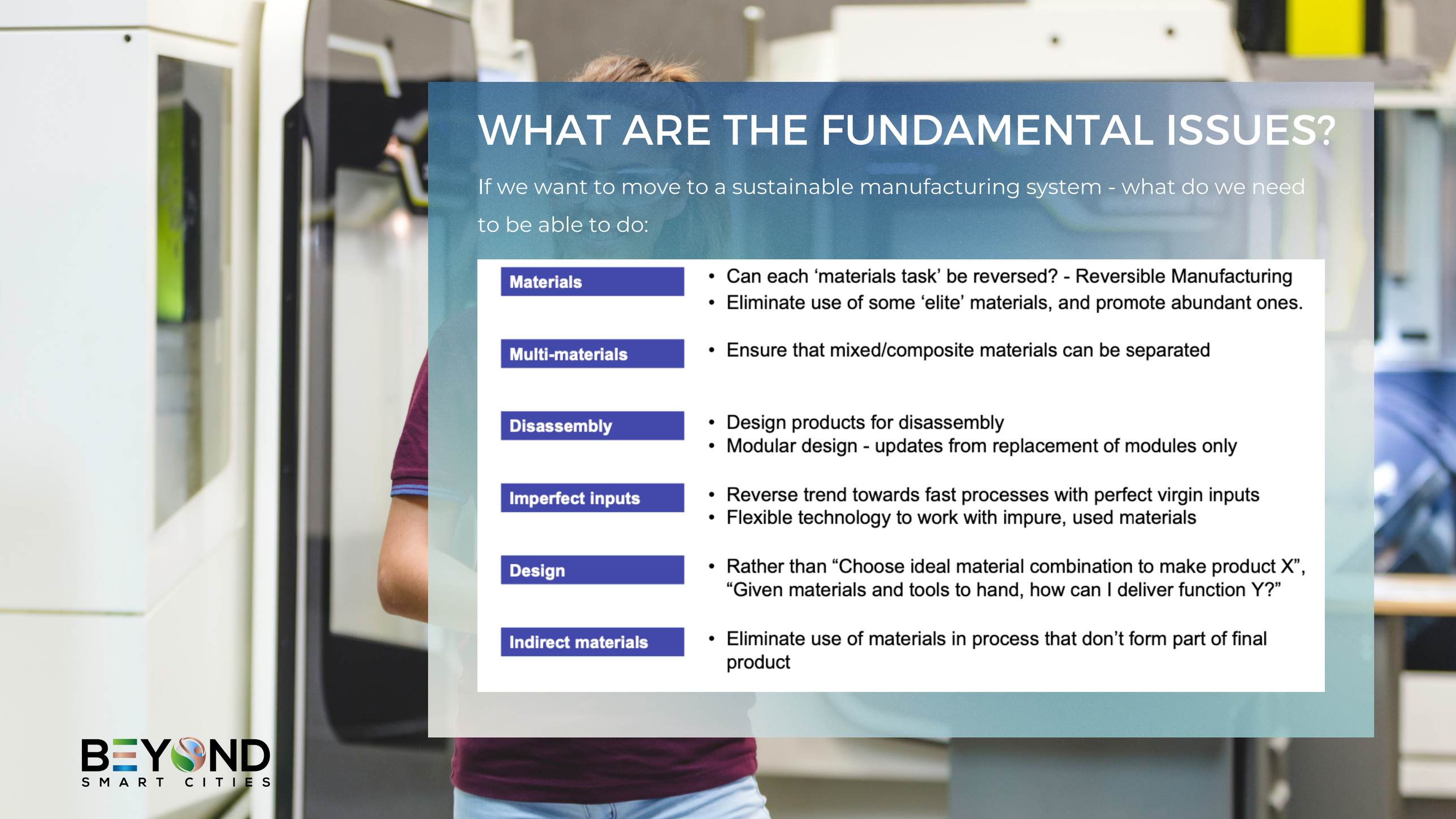
Source http://www.grida.no/climate/vital/index.htm



SUSTAINABLE MANUFACTURING IS ...
DEVELOPING TECHNOLOGIES TO TRANSFORM MATERIALS WITHOUT EMISSION OF GREENHOUSE GASES, USE OF NON-RENEWABLE OR TOXIC MATERIALS OR GENERATION OF WASTE.



BEYOND SMART CITIES



WHAT ARE THE FUNDAMENTAL ISSUES?

If we want to move to a sustainable manufacturing system - what do we need to be able to do:

Materials	• Can each ‘materials task’ be reversed? - Reversible Manufacturing • Eliminate use of some ‘elite’ materials, and promote abundant ones.
Multi-materials	• Ensure that mixed/composite materials can be separated
Disassembly	• Design products for disassembly • Modular design - updates from replacement of modules only
Imperfect inputs	• Reverse trend towards fast processes with perfect virgin inputs • Flexible technology to work with impure, used materials
Design	• Rather than “Choose ideal material combination to make product X”, “Given materials and tools to hand, how can I deliver function Y?”
Indirect materials	• Eliminate use of materials in process that don’t form part of final product

BEYOND SMART CITIES



BEYOND SMART CITIES

Online professional courses led by the world’s top specialists

You Can Find And Contact Us

Expertise in a wide variety of fields, from sustainability and energy efficiency to environmental protection and commissioning to personal enhancement and beyond.

+91 6363032722

learn.beyondsmartcities.in

55,HMR LAYOUT,CHIKABANAWAR, BENGALURU- 560090

info@beyondsmartcities.in