Technical Expert Meetings on Mitigation (TEMs-M) 2018

Industry – Implementation of circular economies and industrial waste re-use and prevention solutions.

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Session I: Policy options, technological innovations and best practices on waste-to-energy

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Challenges:

- **Policy and Regulatory**: appropriate incentives like feed-in tariffs, tipping fees, permits and approvals, off-taker agreements / grid access; norms, standards of technologies.

- **Feedstock** : availability/consistency, quality and composition of feedstock, characterization of feedstock as hazardous residues imply further permits

- **Scale and viability** : different players, actors and sources/types of financing and partnership apply as we you scale projects – viability.

- **Social inclusion**: impacting livelihood of informal sector waste pickers

- **Alignment of priorities –** waste producers needs, challenges -each having their own size of production, specific waste streams, size of communities

- **Financing –** issues and needs vary depending on context and size of projects

Main messages:

- Huge potential
- Many success stories, time for scaling up.
- Policy and regulatory innovations requires collaborative approaches
- Combining waste streams to bring project to viability.
- Need to promote technologies applicable to different scales and circumstances.
- Inclusive business models – informal waste pickers
- Increase financing tools/options available for WtE projects.
- Consider at the impact of the investment on the economy as a whole – co-benefits

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Session III: Replicating and upscaling innovations and best practices on industrial waste-to-energy and circular economy, including elements of supply chain redesign

UNIDO‘s activities in WtE.

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a)Industrial (from SMMEs to large) organic WtE projects?

- Agro industries and agriculture are sources of livelihoods for many in developing countries
- Agro-industries provide employment, incomes, in remote areas.
- Energy is a major constraint to their operations affecting their productivity and ultimately competitiveness.
- Resource efficiency and cleaner production (RECP), symbiosis, shift from linear to circular economy and become "~~pros~~umers" industrial parks.
- Opportunities for clean technology innovation and entrepreneurship

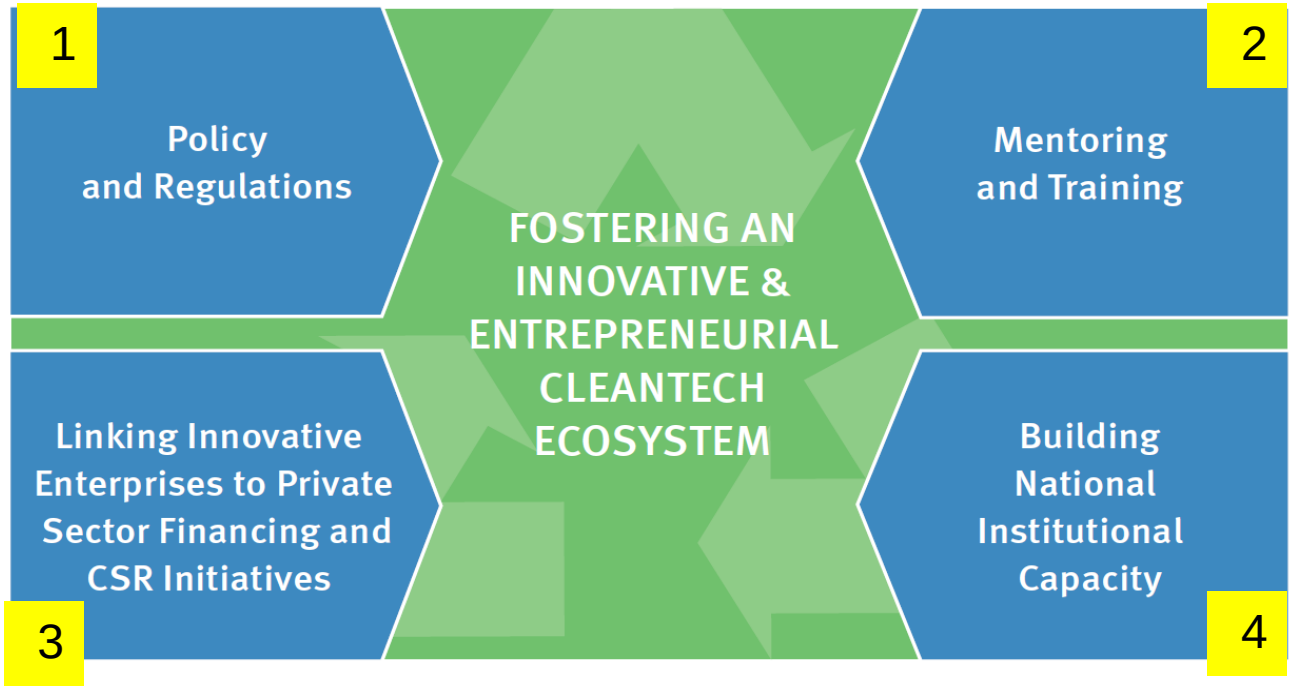
b) Municipal Solid (Liquid) Waste-to-Energy – Sustainable Cities

- High Population growth
- High rates of urbanization
- Liquid waste – biogas
- Waste management challenges

- Building Capacity of Cities to Plan WtE Projects
- Supporting Pilot WtE Projects
- Developing Business Models – Public Private Partnerships.
- Policy and Regulatory Environment
- Linking to Financing

c) Global Cleantech Innovation Programme (GCIP)

Catalyze the formation and connectivity of Innovation and Entrepreneurship Ecosystem Players



India, Pakistan, Armenia, Thailand, Malaysia, Turkey, Morocco, South Africa, Ukraine

>865 start-ups/SMEs accelerated

UNIDO support in promoting industrial WtE projects

Overall Objective - to promote innovation and market-based adoption of waste-to-energy technologies in industries by attending barriers related to:

A – Policy and regulatory issues – best practices

B – Building Capacity - market players and enablers.

C – Awareness and knowledge exchange.

D – Technology Piloting - feasibility and viability of WtE technologies and applications

E – Scaling up - Access financing / business models

F – Clean technology innovation and entrepreneurship – global market linkages

Thank You!

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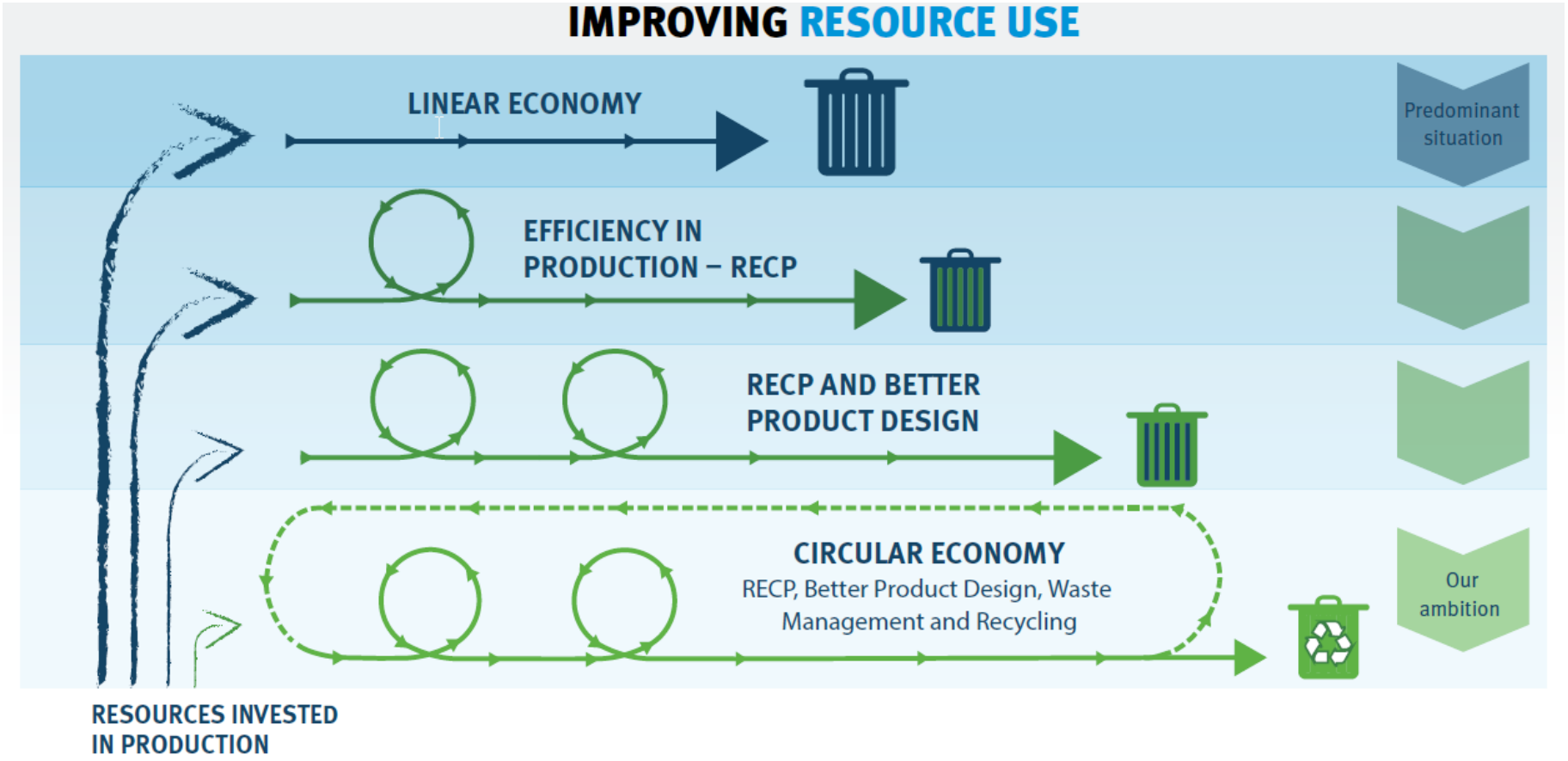
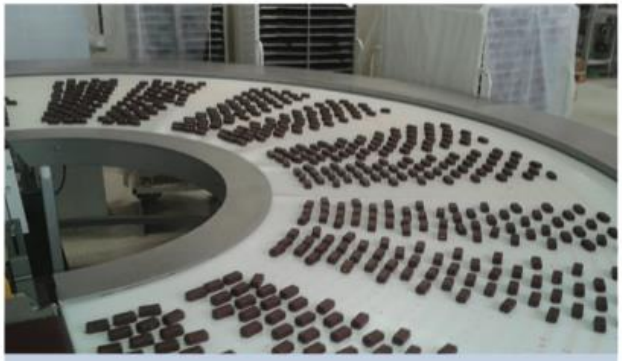

IMPROVING RESOURCE USE
LINEAR ECONOMY
EFFICIENCY IN PRODUCTION – RECP
RECP AND BETTER PRODUCT DESIGN
CIRCULAR ECONOMY
RECP, Better Product Design, Waste Management and Recycling
Predominant situation
Our ambition
RESOURCES INVESTED IN PRODUCTION

UNIDO experience



Since 2014, when UNIDO's Resource Efficient and Cleaner Production (RECP) pilot project was launched in the Republic of **Belarus**, more than 30 companies learned how they can cut production-related costs and at the same time reduce adverse environmental impacts. In one example, UNIDO helped a confectioner to use safe and sweetwater to make marmalade for chocolate fillings.

In **Serbia**, the National Cleaner Production Centre (NCPC) is a particularly strong player in implementing sustainable chemical solutions, including new business models such as Chemical Leasing.

UNIDO experience

In **Viet Nam**, UNIDO supported an eco-industrial park model, which meant companies cooperated to reduce waste and increase resource efficiency. Other ongoing UNIDO projects—in China, Colombia, Ethiopia, India, Indonesia, Morocco, Peru, Senegal and South Africa—all show the great potential of the eco-industrial park model. In an industrial zone in China, a UNIDO-supported programme helped generate synergies yielding over $10 million in savings and an over $16 million revenue increase, as well as 167,000 tons of reduced carbon dioxide and 1.4 million tons of reduced landfill.

UNIDO experience

In **Guinea**, UNIDO trained more than 4,000 young people and women in solid waste management, including waste collection and sorting, sanitation and the integrated management of public spaces. The project offers a hopeful model for addressing West Africa's most pressing environmental, economic and social problems.

The Project: *"Sustainable Cities Integrated Approach Pilot in India"*

- GEF Grant: **13.5 M USD** Co-Financing: **100 M USD**
- GEF Implementing Agency: **UNIDO**
- Executing Partners: **Ministry of Urban Development**, **Municipal Corporations (Jaipur, Bhopal, Mysore, Vijayawada, Guntur)**

- Objective/s
  - Integration of sustainability strategies into urban planning and management, to create a favorable environment for investments in infrastructure and service delivery
  - Contribute to national cities missions: Swachh Bharat (clean India initiative), 100 Smart Cities, AMRUT

Project Components

C1 Sustainable urban planning and management

C2 Investment projects and technology demonstration

- Detailed project reports for city investment projects
- Innovative waste-to-energy / clean technologies with productive use
- Business model and public-private partnerships
- Capacity of urban local bodies in promoting investment

C3 Partnerships and knowledge management platform

C4 Monitoring and evaluation

City in India	Demonstration Project
Bhopal	Landfill capping and closing, including post-closure development
Jaipur	Municipal Solid Waste-to-Energy Plant
Mysuru	Compost Plant
Vijayawada	Energy generation from STP biogas
Guntur	Energy generation from STP biogas

Opportunities:

- The case for industry to buy into the circular economy is remarkably compelling.

- The circular economy encourages inter-company exchanges and synergy-building, leading to better economic, social and environmental performance.

- On an international level, the circular economy facilitates the exchange of goods across borders by introducing standards to secondary raw materials that were previously considered waste.

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