

JICA Clean City Initiative (JCCI)

"Challenges  
of managing  
demolition  
waste (debris)  
in Ukraine"

Tokyo, 2024/07/02

An example of the destruction caused by russia's armed invasion against Ukraine

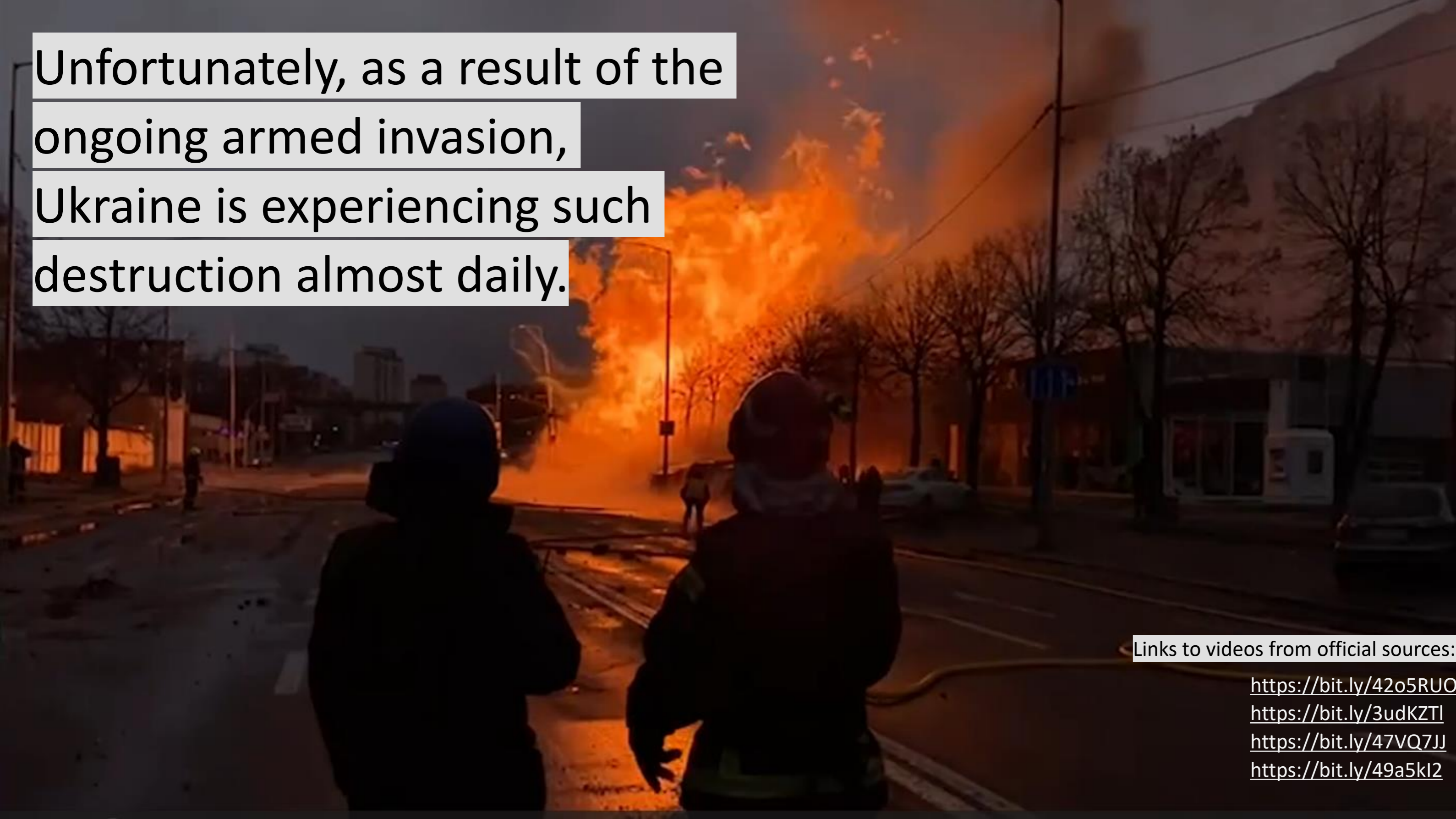




An example of the  
destruction caused  
by russia's armed  
invasion against  
Ukraine



Unfortunately, as a result of the ongoing armed invasion, Ukraine is experiencing such destruction almost daily.



Links to videos from official sources:

<https://bit.ly/42o5RUO>

<https://bit.ly/3udKZTl>

<https://bit.ly/47VQ7JJ>

<https://bit.ly/49a5kl2>

# Comparison of demolition waste (debris) and disasters waste

## SIMILARITY

## DIFFERENCE

**Demolition waste  
(debris)**

there are  
almost no  
differences

**Disasters waste**

The generation of waste occurs in an uncontrolled manner

Most of the waste is mixed, which complicates the waste management process

Generating a large amount of waste in a short period of time

May contain hazardous waste

**May be contaminated with explosive substances**

Most of the composition: concrete, reinforced concrete, brick, wood, plastic, glass, metal

Most of the composition: wood, concrete, stones, metal



# Overview of the current situation in the field of debris management in Ukraine



# Approximate DESTRUCTION SCALE

**280 000 +**

Damaged buildings and structures  
(including multifamily buildings,  
apartments)

**> 100 000**

Buildings beyond repair

**> 600 000**

Tons of debris at temporary  
storage yards

**Millions of  
tons of waste  
have not yet  
been  
accounted for**





# CHALLENGES

- vast extent of destruction, challenging to evaluate before military activities cease
- difficulties in managing debris in war-affected areas
- shortage of skilled workers in communities
- communities' limited resources for destruction aftermath
- hazardous materials mixed in the debris





# LEGAL FRAMEWORK

Ukraine's Law  
"On Regulation of Urban Development Activities" (Section V, Article 9<sup>3</sup>)

Ukrainian Cabinet of Ministers Resolution  
"On Establishing the Procedure for Management of Waste Arising from Damage (Destruction) of Buildings and Structures due to Military Actions, Terrorist Acts, Sabotage, or their Consequence Management Works" (as of September 27, 2022, № 1073)

Developed jointly with the Ministry of Environmental Protection, incorporating international expertise (GIZ, APENA 2, Regional Development and Environment Ministry RST)

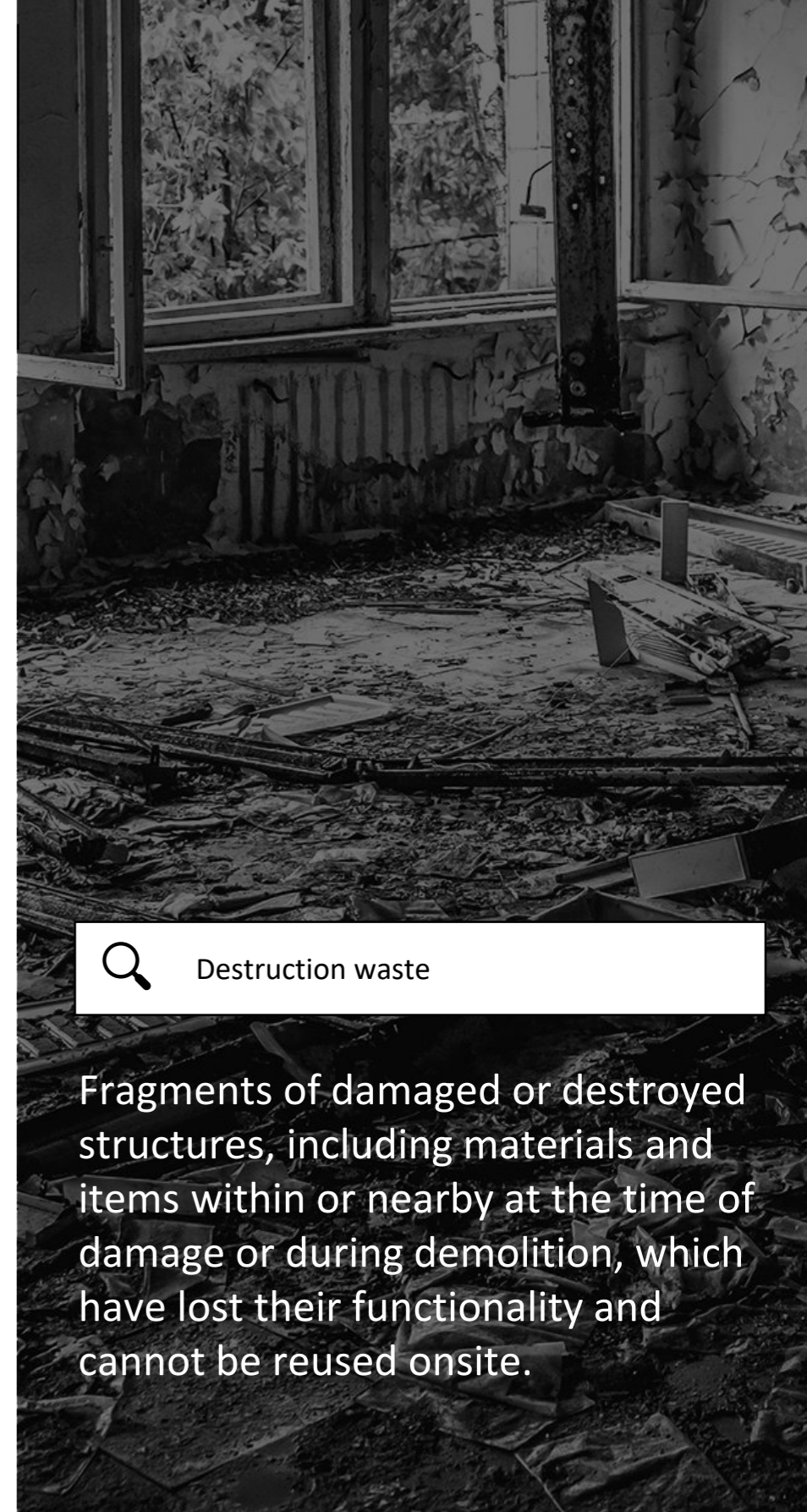
## Objectives stipulated by legislation:

- ✓ To mitigate and lessen the environmental and health impacts of such waste
- ✓ Recycling (repurposing) destruction waste components for construction use



Destruction waste

Fragments of damaged or destroyed structures, including materials and items within or nearby at the time of damage or during demolition, which have lost their functionality and cannot be reused onsite.





# LEGAL FRAMEWORK

Resolution No. 1073 of the Cabinet of Ministers of Ukraine, dated September 27, 2022 was co-developed by the Ministry of Regional Development and the Ministry of Environmental Protection

## REGULATIONS FOR DEBRIS MANAGEMENT

referring to waste generated as a result of damage or destruction of buildings and structures due to military actions, terrorist acts, sabotage, or the execution of works for the elimination of their consequences

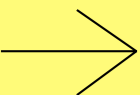


## REGULATIONS DEFINE:

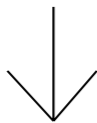
- Standard methods for assessing and recording debris volume and type
- Identification and tracking system for such waste
- Debris classification based on origin, contents, and hazardous material presence
- Guidelines for processing destruction waste (debris)
- Local government protocols for debris management (the main activities are aimed at clearing the territories)
- Arrangements for temporary storage of significant debris amounts
- Basic principles recycling of debris in construction and building materials production

# CLASSIFICATION OF DESTRUCTION WASTE (DEBRIS)

## DESTRUCTION WASTE (DEBRIS) (mixed waste)



Established list of waste components and their potential reuse in construction and the building materials industry (for manufacturing building products)



### PRIMARY

Components like rubble and parts of structural elements, door and window fillings, utility networks, etc  
(concrete, brick, plastic, wood, glass, metal)



### SECONDARY

Materials and items found inside or near the structure during damage or dismantling, such as equipment, personal items, household goods (furniture, appliances), organic materials, etc.



Aligned with the EU's List of Waste (decision 2000/532/EU)

# DESTRUCTION WASTE (DEBRIS) MANAGEMENT PROCESS



**AUTHORIZED ENTITY**

Local executive bodies of villages, towns, cities, and military administrations



**WASTE DETECTION AND RECORDING**

Inspections of damaged sites, reviewing reports from citizens, organizations, media, and emergency services (including the State Emergency Service and National Police), military units, etc.

Identifying the waste owners

Publishing waste-related information on official websites and communication with local administrations



**DESTRUCTION WASTE MANAGEMENT OPERATIONS**

Initial cleanup (collection, on-site sorting) and transportation to temporary storage

Dismantling damaged structures as needed

Final area cleanup and clearing



**TEMPORARY STORAGE SITE MANAGEMENT**

Setting up temporary waste storage facilities

Storing destruction waste for one year post-martial law

Processing and neutralizing large waste amounts

*in case of significant volumes of waste generation*



**UTILIZATION (RECYCLING)**

Repurposing destruction waste as material or energy resources

Waste disposal, including burial

Land reclamation at temporary storage sites

# DESTRUCTION WASTE (DEBRIS) TEMPORARY STORAGE



Placement decisions for temporary storage sites are made by Kyiv military (city) and regional military (state) administrations

Storage of destruction waste during martial law and for one year after its end

Processing operations are limited to non-hazardous main waste components, involving:

- component separation
- crushing
- fractioning

# DESTRUCTION WASTE TEMPORARY STORAGE



Placement decisions for temporary storage sites are made by Kyiv military (city) and regional military (state) administrations



Site planning includes areas for:

- temporary waste storage and sorting,
- processing (recycling), and storing secondary raw materials
- crushing-sorting facilities and other installations
- temporary structures for waste management activities



Sanitary protection distances:

2 km

from water bodies

0,5 km

from residential/public areas and social infrastructure

0,05 km

from forests

0,2 km

from agricultural lands, public roads, and railways

# SITE SETUP REQUIREMENTS



A solid, level foundation of concrete, asphalt, or compacted soil

with a minimum 1.5mm geomembrane layer, protected by a 0.5m layer to prevent mechanical damage



Sufficient water supply for firefighting

in case of combustible waste storage



Fire and special vehicle access

necessary if combustible waste is stored



Organized drainage

for rainwater



Accessible entrance and roads for vehicle passage



Enclosed perimeter



Proper illumination



## PROHIBITIONS:

- Storage of destruction waste outside specified temporary sites or facilities
- Mixing different destruction wastes during storage
- Storing other wastes at destruction waste sites



# SITE SETUP REQUIREMENTS



## ‘JAPAN-UKRAINE EMERGENCY RECOVERY PROGRAM’

Equipment supplied for a temporary waste facility in Kyiv region  
(Borodyanka city):

- Crushers
- Loaders
- Excavators
- Bulldozers
- Dump trucks



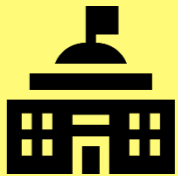
# NEXT STEPS



AUTHORIZED ENTITIES



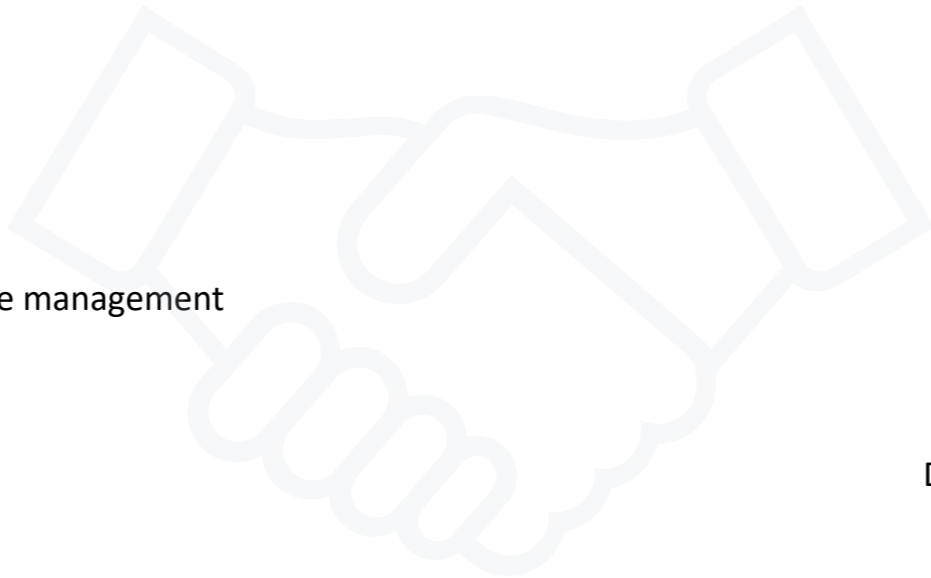
BUSINESS AND COMMUNITY ENGAGEMENT

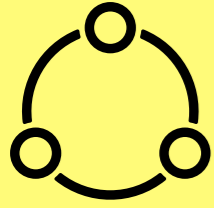


CENTRAL EXECUTIVE BODIES

- Facilitate area clearance, temporary waste storage
- Manage waste volume assessments and plans
- Determine the financial and technical needs for effective waste management
- Adopt recycling technologies for reusable waste
- Seek international support

- ← Create guidelines and legislature for construction products from recycled waste
- ← Evaluate data from local governments
- ← Establish incentives for using recycled waste in construction
- ← Determine funding needs and sources, secure international aid
- ← Set goals/KPIs for waste reuse and recycling preparation





# OPPORTUNITIES

## Destruction Waste in Circular Economy

**Destruction waste storage**

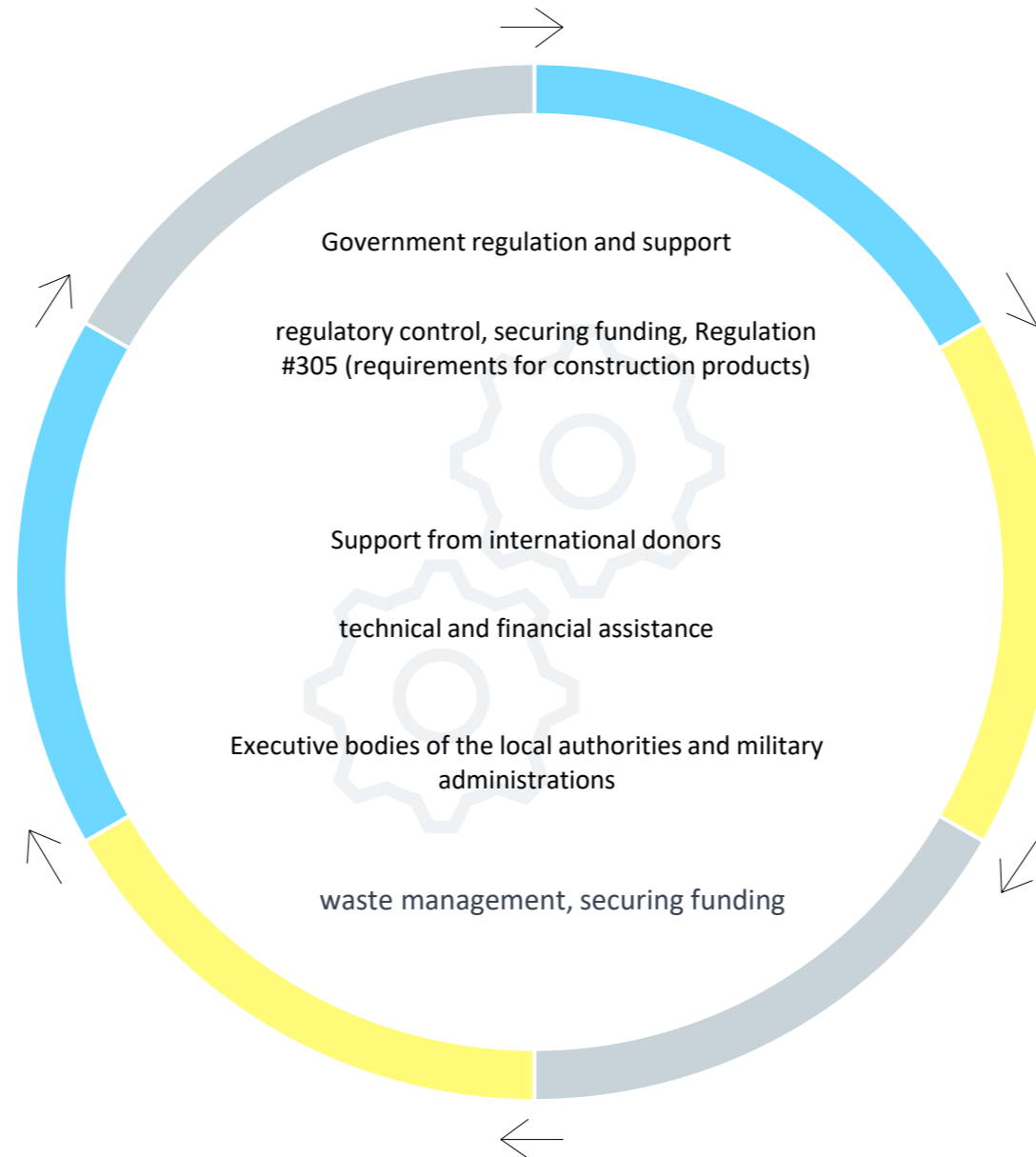
Efficient waste management to lessen environmental impact

**Combining destruction and construction waste**

Over 600,000 tons of mixed waste mainly stored temporarily (2023/12/01) Additionally, millions of debris will be generated from dismantling and after the de-occupation of the territories of Ukraine

**Construction work execution**

Organized collection of waste from construction and demolition, along with recording and preliminary sorting



**Processing and recycling destruction waste**

Converting waste into reusable components

**Secondary raw materials preparation**

Establishing standards and uses for recycled materials

**Building materials production**

Advancing and applying modern techniques in building product manufacturing, developing formulas, and adhering to safety and eco-friendliness standards per EU Regulation 305

# Experience of Japan that could be implemented in Ukraine

Regulation at the legislative level of disasters waste management (adapted to debris management in Ukraine)

Approaches to the interaction between the state and local governments on the issues of disasters waste management (adapted to debris management in Ukraine)

Approaches to the development of local disaster management plans (adapted to debris management in Ukraine)

Approaches to sorting, processing and reuse of disaster waste (adapted to debris management in Ukraine)

Requirements for specialists and personnel involved in the process of disaster waste management (adapted to debris in Ukraine)

Technologies for processing and reusing large volumes of disaster waste (adapted to debris management in Ukraine)

Integration of electronic systems and products into the process of disaster waste management (adapted to debris management in Ukraine)

ご清聴ありがとうございました！

両国の協力関係がさらに緊密で効果的なものになることを願っています



Thank you for your attention!

We hope for further close and effective cooperation between our two countries