

# Environmental and Social Framework

## ESS 3:

# Resource Efficiency and Pollution Prevention and Management



# ESS3: Resource Efficiency and Pollution Prevention and Management

Topic	Presenter	Time allocation
ESS 3 principles and overview	Bonnie Cavanough	20 Minutes
Construction Pollution Control & Waste Management	Alan Sewell	30 minutes
The World Bank and solid waste management/ ESHS Guidelines	Rieko Kubota	20 minutes
ESS in Waste Management Projects	Bradley Nolan	20 minutes

# ESS3: RESOURCE EFFICIENCY AND POLLUTION PREVENTION & MANAGEMENT

## Objectives

- Promote the sustainable use of resources, including energy, water, and raw materials
- Avoid or minimize adverse impacts on human health and the environment caused by pollution from project activities
- Avoid or minimize project-related emissions of short and long-lived climate pollutants
- Avoid or minimize generation of hazardous and non-hazardous waste
- Minimize and manage the risks and impacts associated with pesticide use





# ESS3: RESOURCE EFFICIENCY AND POLLUTION PREVENTION & MANAGEMENT

1) **RESOURCE EFFICIENCY:** Requires technically and financially feasible measures to improve efficient consumption of **energy**, **water**, and **raw materials**, and introduces specific requirements for water efficiency where a project has high water demand

## 2) **POLLUTION PREVENTION & MANAGEMENT:**

- a) **Management of Air Pollution:** Requires an estimate of gross greenhouse gas emissions resulting from project (unless minor), where technically and financially feasible
- b) **Management of Hazardous and Non-hazardous Wastes:** Requirements on management of wastes, chemical and hazardous materials, and contains provisions to address historical pollution
- c) **Management of Chemicals and Hazardous Materials:**
  - a) **Management of Pesticides:** Requires management of pesticides, preferring integrated pest management (IPM) and integrated vector management (IVM), and where pesticides are necessary, minimizing risks to human health and the environment

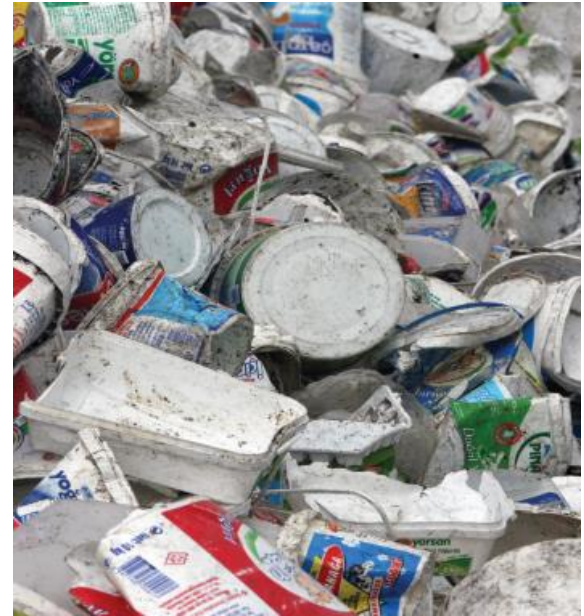
*The standard refers to national law and also Good International Industry Practice, in the first instance the world Bank EHSs.*

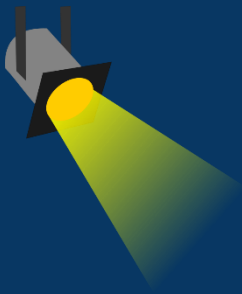


# ESS3: Resource Efficiency and Pollution Prevention and Management

## Spotlight:

- Measures to improve resource efficiency
- Water use efficiency
- Requirements to estimate gross Greenhouse Gas (GHG) Emissions
- Pesticides
- Historical pollution





# ESS3: Resource Efficiency and Pollution Prevention and Management

## 1(a). RESOURCE EFFICIENCY: **ENERGY USE**

### Applicability:

Applies to facilities or projects that consume energy in:

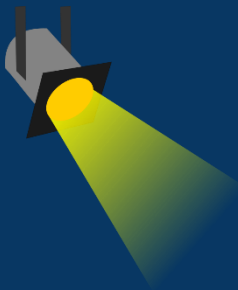
- Process heating and cooling;
- Process and auxiliary systems, such as motors, pumps, and fans;
- Compressed air systems and heating, ventilation and air conditioning systems (HVAC);
- Lighting systems

*Examples: leak elimination, insulation, electric motors (electric water pump), lighting fixtures*

### What should we do?

- Benchmarks are often provided by industry associations or international organizations or the regional UN Economic Commissions.
- The WBH-EHS guidelines contain minimum pollution prevention requirements and benchmark references.





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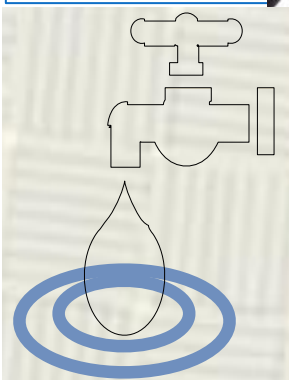
## 1(b). RESOURCE EFFICIENCY: **WATER** USE

### Applicability:

For projects with:

- Significant user of water
- Significant impact on water quality

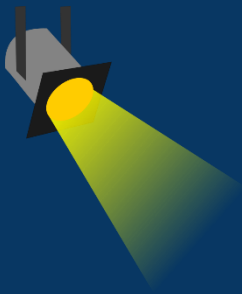
*Consider: water availability and water resource demand*



### What should we do?

- **Assess** the potential cumulative impacts of water use upon communities, other users and the environment
- **Minimize** impacts on water quality:
  - Reduce on-site and post-project runoff of polluted water,
  - Control sources of pollutants
  - Treating contaminated water before discharging into drainage systems or receiving waters
- **Apply** resource efficiency measures:

Minimize evaporation, improve irrigation systems and scheduling, promote rational use of fertilizer and better management of animal wastes



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## 1(c). RESOURCE EFFICIENCY: **RAW MATERIAL USE**

### Applicability:

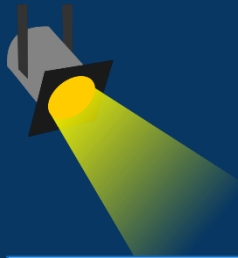
Projects that usually make significant use of raw materials include road construction, housing and urban development, mining, and chemical manufacture and processing

### What should we do?

Minimize use in the project, select the most appropriate raw materials possible, reducing and recycling wastes







# ESS3: Resource Efficiency and Pollution Prevention and Management

## 2. Pollution Prevention and Management: Air Pollution

### Applicability

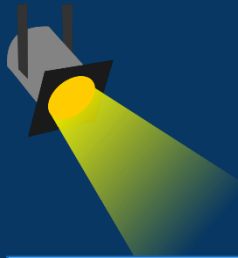
Air pollution is associated with the combustion of fossil fuels e.g., Nitrogen Oxides, Sulfur Dioxide, Carbon Monoxide, Particular Matter, and other contaminants including GHG



### What should we do?

Consider alternatives and implement technically and financially feasible and cost effective options to avoid or minimize project-related air emissions:

- Energy efficiency
- Selection of materials with less polluting emissions (lead-free paints, non-mercury bulbs, etc.)
- Proper waste mgt practices
- Renewable energy (solar, hydro, wind, etc.)



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## 2. Pollution Prevention and Management: Air Pollution

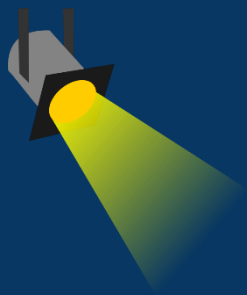
### *When and How Should Greenhouse Gas Emissions be Estimated?*

Air pollution sources should be characterized and estimated as part of environmental and social assessment. This includes estimate of gross GHG emissions from the project:

- Providing such estimation is technically and financially feasible
- Not required for projects with diverse and small sources of emissions or where emissions not likely to be significant

Where the government team does not have the capacity to develop the GHG emissions estimate, the World Bank will provide assistance





# ESS3: Resource Efficiency and Pollution Prevention and Management

## *ESS3-Specific Instruments:*

### Pest Management Plan

A Pest Management Plan is required for projects which may include activities that could **lead to significant** pest and pesticide management issues, or if financing pest control products represents a large component of the project.

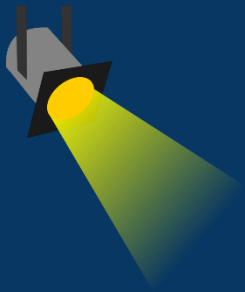




# ESS3: Resource Efficiency and Pollution Prevention and Management



**Clarification Questions?**



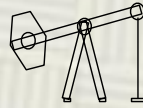
# ESS3: Resource Efficiency and Pollution Prevention and Management

## *ESS3-Historical Pollution*

### **Definition:**

Pollution from past activities affecting land and water resources for which no party has assumed or been assigned responsibility to address and carry out the required remediation

If one or more third parties are responsible for the historical pollution, the Borrower will consider seeking recourse from such parties so that such pollution is appropriately remediated. The Borrower will implement adequate measures so that historical pollution at the site does not pose a significant risk to the health and safety of workers and communities.



# Remediate the effects of historical pollution...



## Identify historical pollution...

### Footnote 5

...defined as pollution from past activities affecting land and water resources for which no party has assumed or been assigned responsibility to address and carry out the required remediation



## Undertake a risk assessment...

### Footnote 6

If the historical pollution could pose a significant risk to human health or the environment, the Borrower will undertake a health and safety risk assessment of the existing pollution which may affect communities, workers and the environment (following a risk-based approach consistent with GIIP, in the first instance the EHSGs)

## Establish a process to identify the responsible party...

### Footnote 7

If one or more third parties are responsible for the historical pollution, the Borrower will consider seeking recourse from such parties so that such pollution is appropriately remediated

## Ensure adequate measures to manage health and safety risk...

Any remediation of the site will be appropriately undertaken in accordance with national law and GIIP, whichever is most stringent

### Footnote 7

...implement adequate measures so that historical pollution at the site does not pose a significant risk to the health and safety of workers and communities