

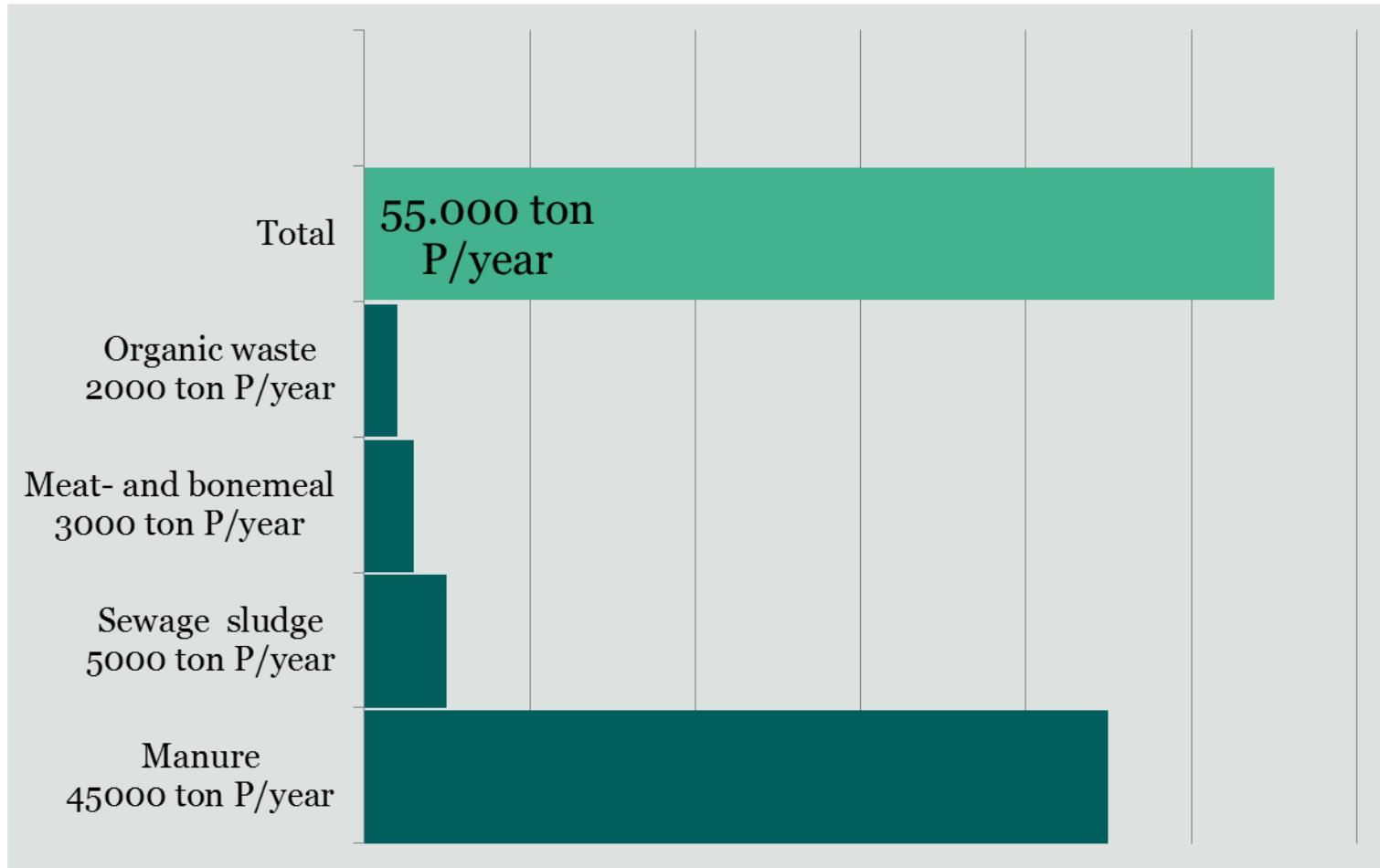


Miljøministeriet  
Miljøstyrelsen

# Strategy for phosphorous recovery in Denmark

Linda Bagge, the Danish Environmental Protection Agency

# Phosphorus in waste – Denmark 2013



# Strategy for utilization of phosphorus

Governments Ressource Strategy, 2013

## ”Denmark without waste”

**2018:**

**80% of phosphorus from sewage sludge is to be recycled though:**

- Recovery of phosphorus from the sewage sludge incineration ash as fertilizer
- Recovery by utilization of sewage sludge on agricultural soil

The Danish Ressource Strategy



[www.mst.dk](http://www.mst.dk)



# Strategy for utilization of phosphorus

Governments Ressource Strategy, 2013

## ”Denmark without waste”

**2018:**

**Organic waste from household  
and service sector collected  
and used in biogas based on  
manure:**

- The expected level for organic waste from service sector is 60% in 2018
- The expected level for house hold is 55% in 2022



# Strategy for utilization of phosphorus

Governments Ressource Strategy, 2013

## ”Denmark without waste”

### Initiatives to fulfill targets:

- Funding for developing, testing and demonstration of technologies for recovering phosphorus from sewage sludge
- Follow- up of lifecycle and socio-economic analyses of treatment requirement for sewage sludge and possibly livestock manure - so the content of phosphorus is utilized
- Possible establishment of ”phosphorus banks” for separate landfilling of ash from incineration of sewage sludge



# The Commission on Nature and Agriculture

## Recommendation:

New regulation of phosphorus from the agriculture, the suggestion is:

- Determination of national objectives and strategy for recovering phosphorus from manure and sewage sludge, including ash from incineration, should have a high priority

# Selected projects supported by the EPA

## Sustainable use of phosphorus from waste water

- A guidance to utilize phosphorus from waste water

## From waste water to phosphorus products

- Development of a method to extract phosphorus from sludge incineration ash

## Lighthouse project, Billund BioRefinery

- Based on lifecycle thinking where bio-waste from the city and country is assembled at a full scale demonstration plant for energy recovery and recycling of the nutrients, including phosphorus



# A Danish platform to support P recovery

## Planned activity

Definition of value chains  
sewage sludge, manure, org. waste

Identification of stakeholders  
sewage sludge, manure, org. waste

Kick-off workshop

## Expected output

Prioritizing of activities  
to be supported by the EPA

Facilitating collaboration  
within the different value chains

Collaboration with other  
countries

