

# **Circular Economy**

A Management Tool of Resources and  
Wastes in the Agrochemical Industry

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# ADAMA at a glance

**Leading**

Provider of off-patent crop protection products

**7<sup>th</sup>**

Largest crop protection company in the world

**\$4bn**

in Sales out of \$66bn global crop protection and non-crop markets

**3x**

Long-term historical growth of 3x the global industry's growth

**100**

Sales in over 100 countries with direct presence in all key Ag markets

**>270**

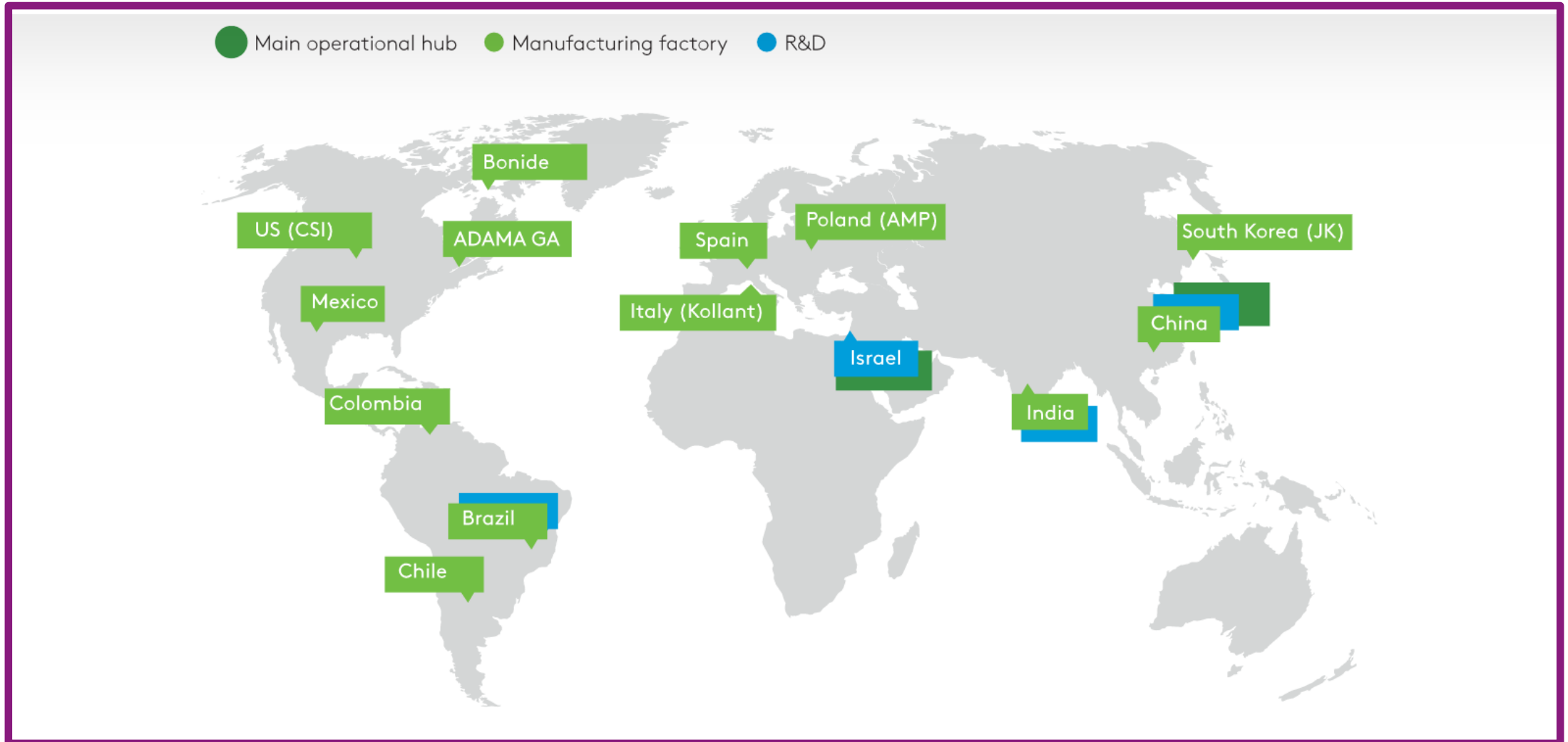
Active Ingredients, building blocks for differentiated offering

**Integrated**

Fully backward integrated production hubs in Israel and China



# ADAMA Global Presence



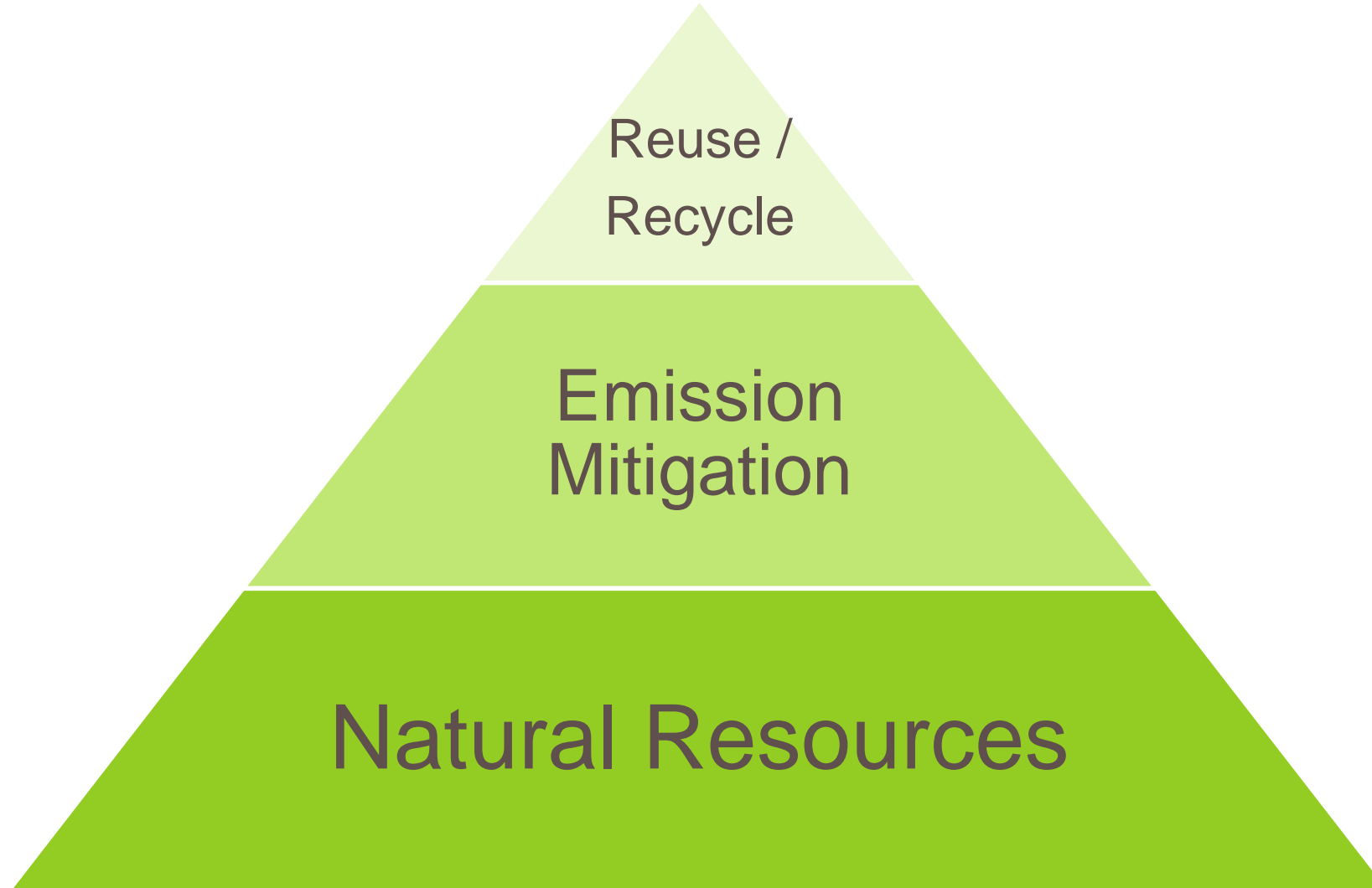
# Circular Economy - Definition

Economic approach...

diminishing the use of resources and raw materials...

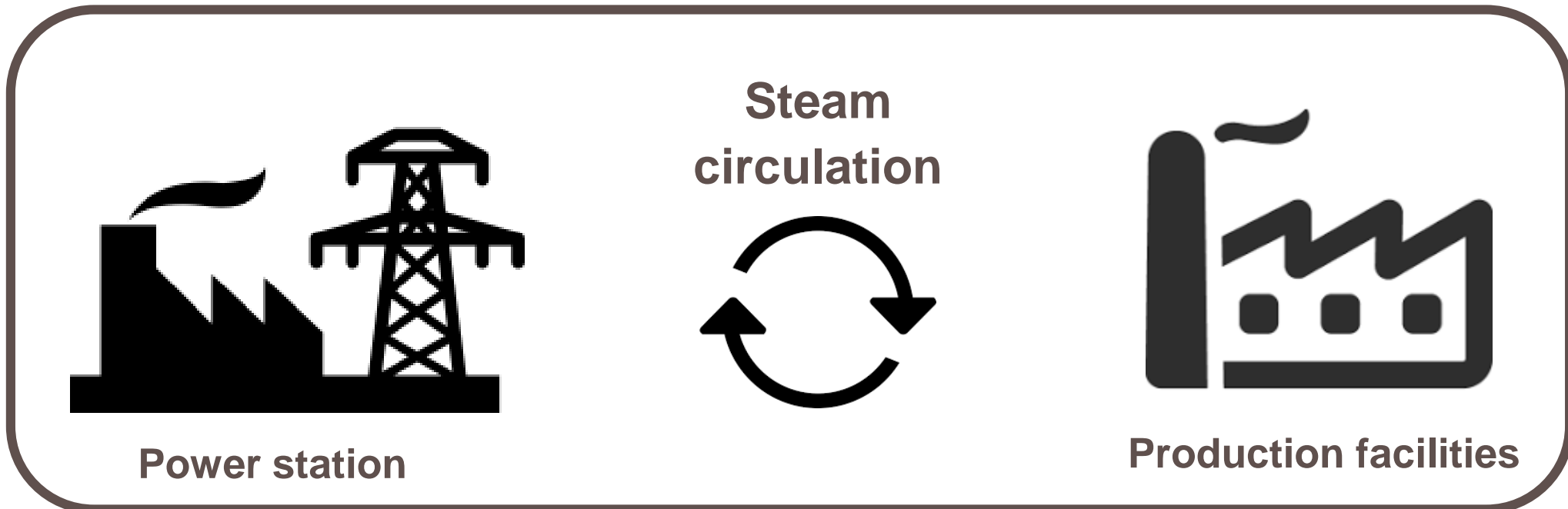
by replace, reuse and recycle by products and wastes...

# ADAMA Sustainability Approach

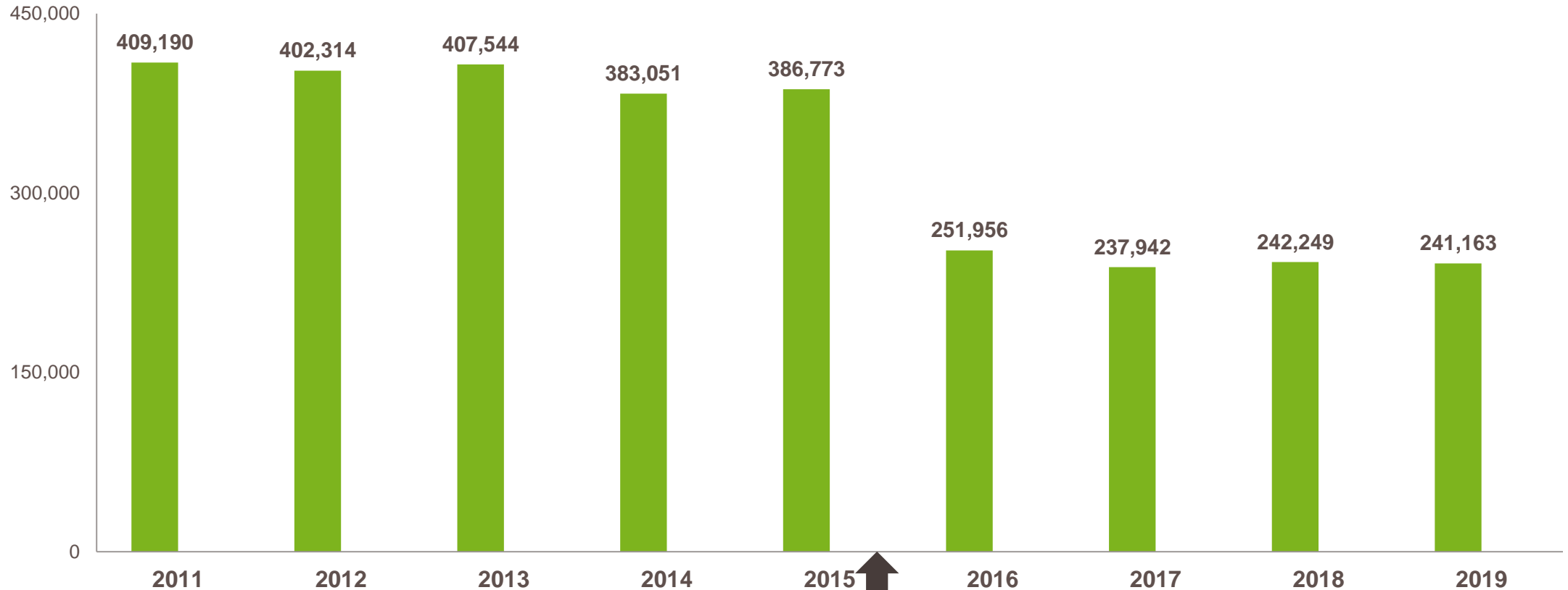


# Residual heat in cogeneration power plants

Steam used for electricity generation is reused for heating purposes at ADAMA nearby production facilities



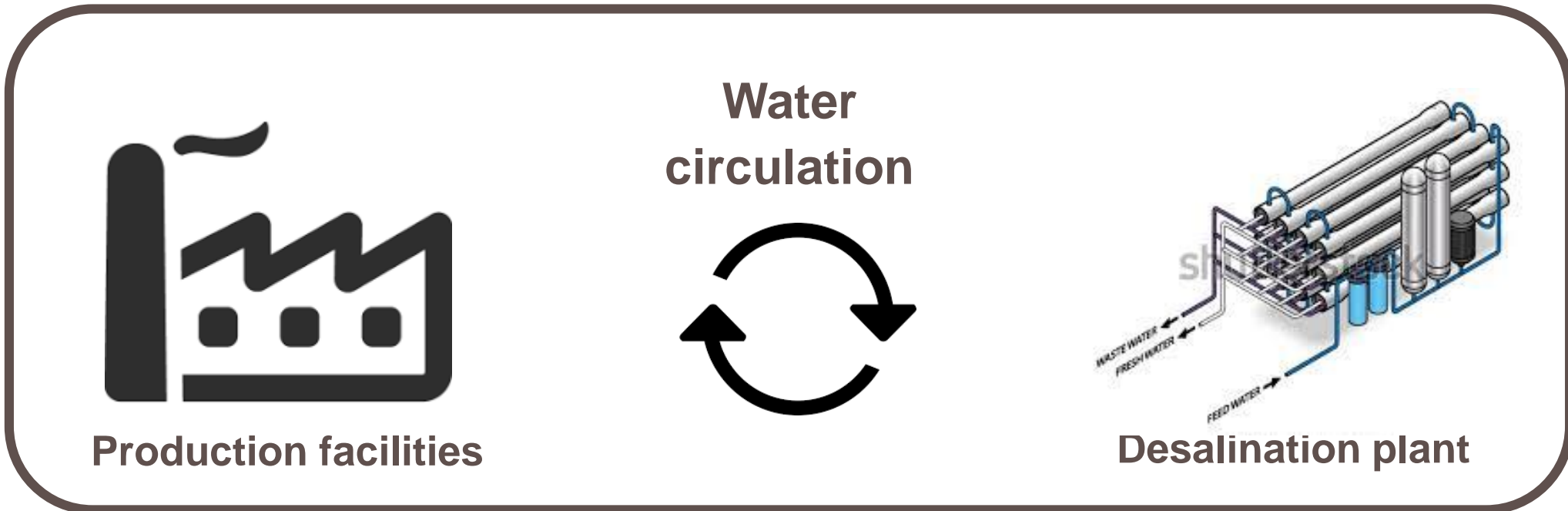
# ADAMA GHGs emission (mTon of CO<sub>2</sub>)



Switched to Co-Generation  
power plants

# Water conservation

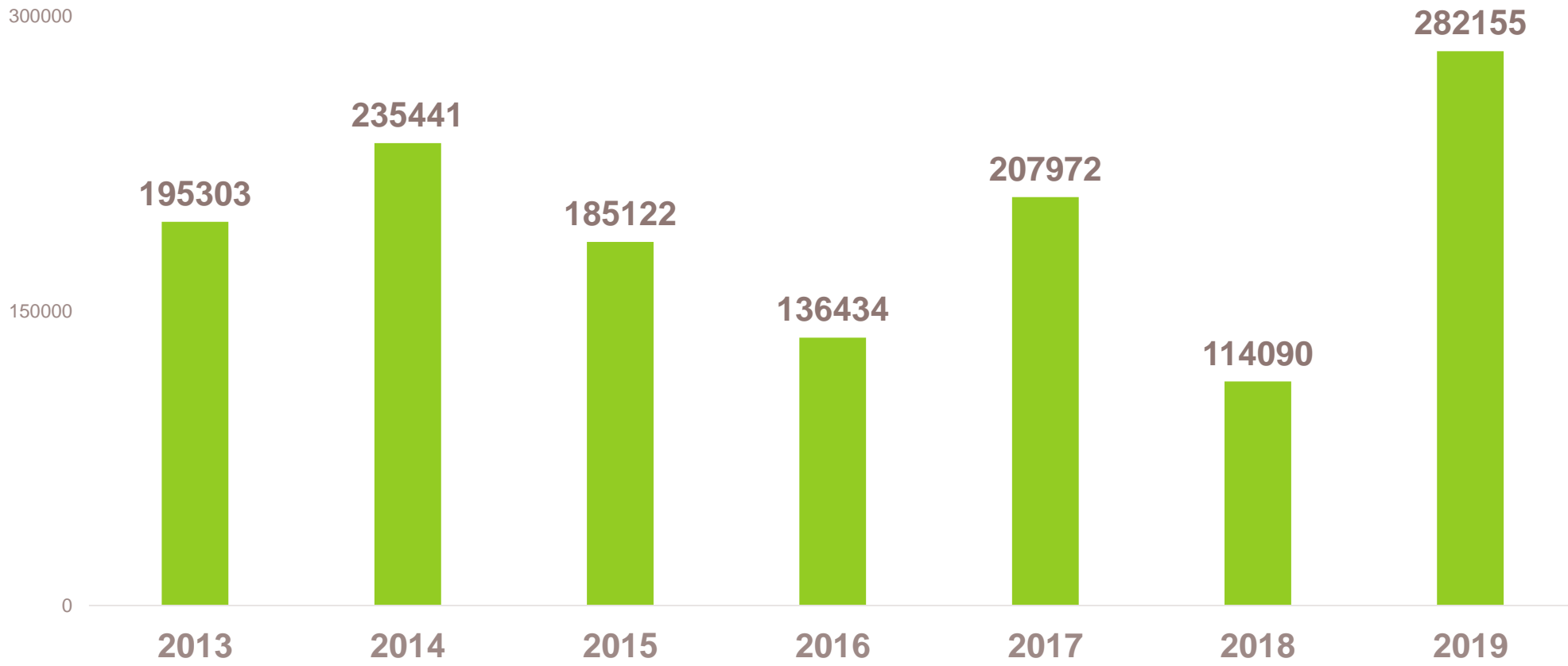
ADAMA desalinates industrial treated effluents and reuse it as operational and cooling water source







# ADAMA water reuse (m<sup>3</sup>)



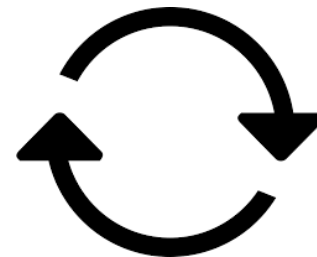
# Waste recycling

ADAMA operates washing and shredding systems of used plastic containers and bags prior reuse it as raw material in new plastic products



Production facilities

Plastic  
circulation



Shredding facility

# Recycle/ Reused non-Hazardous waste (mTon)

	2019	2020
Recycle/ Reused non-Hazardous waste (mTon)	1,639	3,830

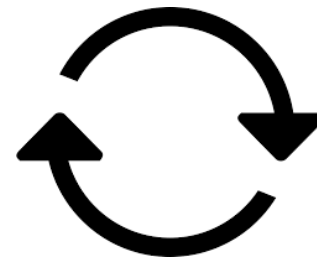
## By products

Reuse calcium phosphate mineral from ADAMA wastewater treatment plant as fertilizer



Production facilities

Minerals  
circulation



Cultivated fields



## By products (mTon)

	2020
Recycle/ Reused non-Hazardous waste (mTon)	69,478

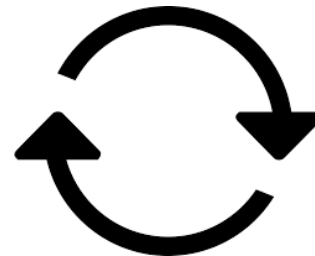
# Raw materials toxicity

ADAMA switched a high toxic profile raw material (TCE) to a lower one (Toluene) to better protect air quality, groundwater and discharged effluents



Production facilities

Raw materials  
circulation



Environment

# Toxicity profile

	Potable Water ( $\mu\text{g/L}$ )	Air Quality ( $\mu\text{g/m}^3$ )	Soil ( $\text{mg/Kg}$ )
TCE	20	2	1.6
Toluene	700	300	168
<b>Safer multiplayer</b>	<b>35</b>	<b>150</b>	<b>105</b>



# Renewable energy

ADAMA upcoming solar farm at the southern part of Israel (Desert)

## Area

150,000 m<sup>2</sup>

## Annual yield

26,000 MWH (10% of total electricity consumption)

## Milestones:

Design- May, 2021

Initiating constructions- November, 2022

Full operation- June, 2022



**Thank you**