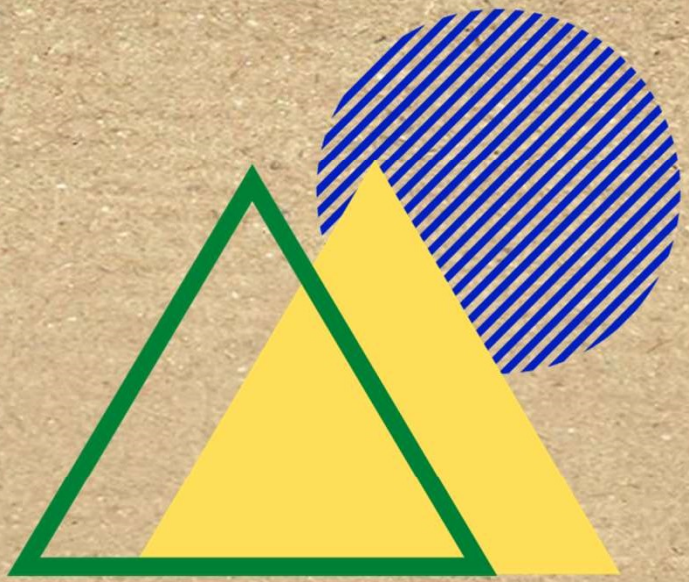


# OKÁ

# PROBLEM

# WHERE? CAIRO

- The largest city in Egypt
- The largest city in Africa
- 15,000 tons of waste per day

Source: CAPMAS (2014) Central Agency for Public Mobilization and Statistics.Census Info Egypt. Available at: http://www.censusinfo.capmas.gov.eg/

**CAIRO**
**15,000 ton/day**

**SÃO PAULO**
**18,000 ton/day**

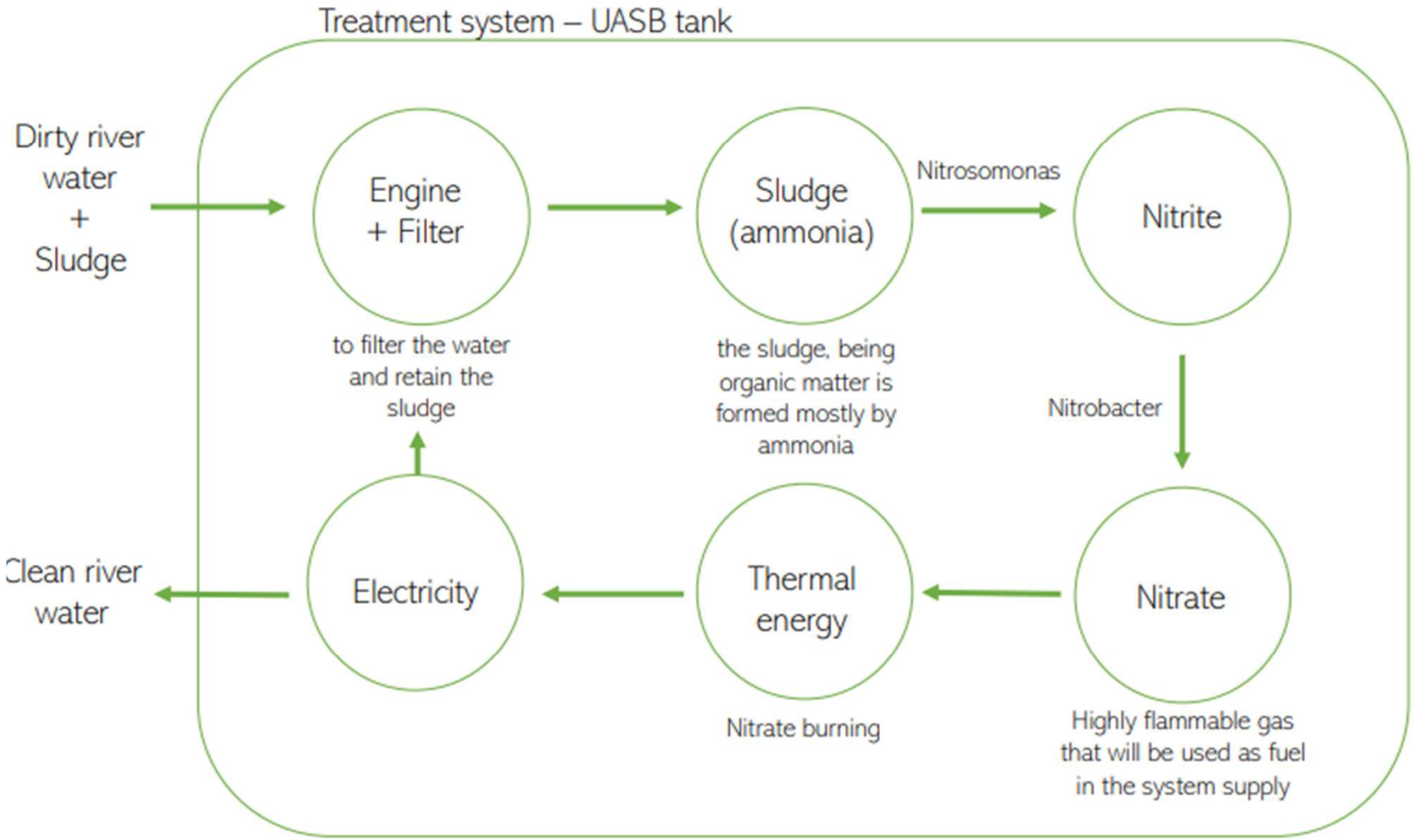
# HOW TO DEAL WITH GARBAGE IN A SMART CITY?

Sludge treatment plant
Pyrolysis plant

# SOLUTION

- Sludge
- Nitogen cycle
- Ammonia
- Supersaturated soil

# Self-sufficient sludge and water treatment cycle

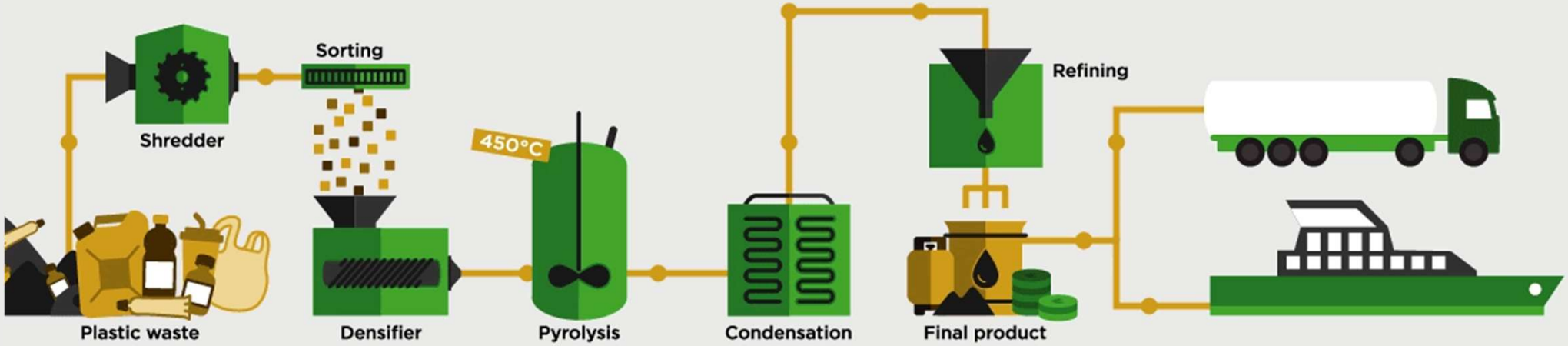



Source: https://www.snatural.com.br/reator-uasb-tratamento-esgoto/

# SOLUTION

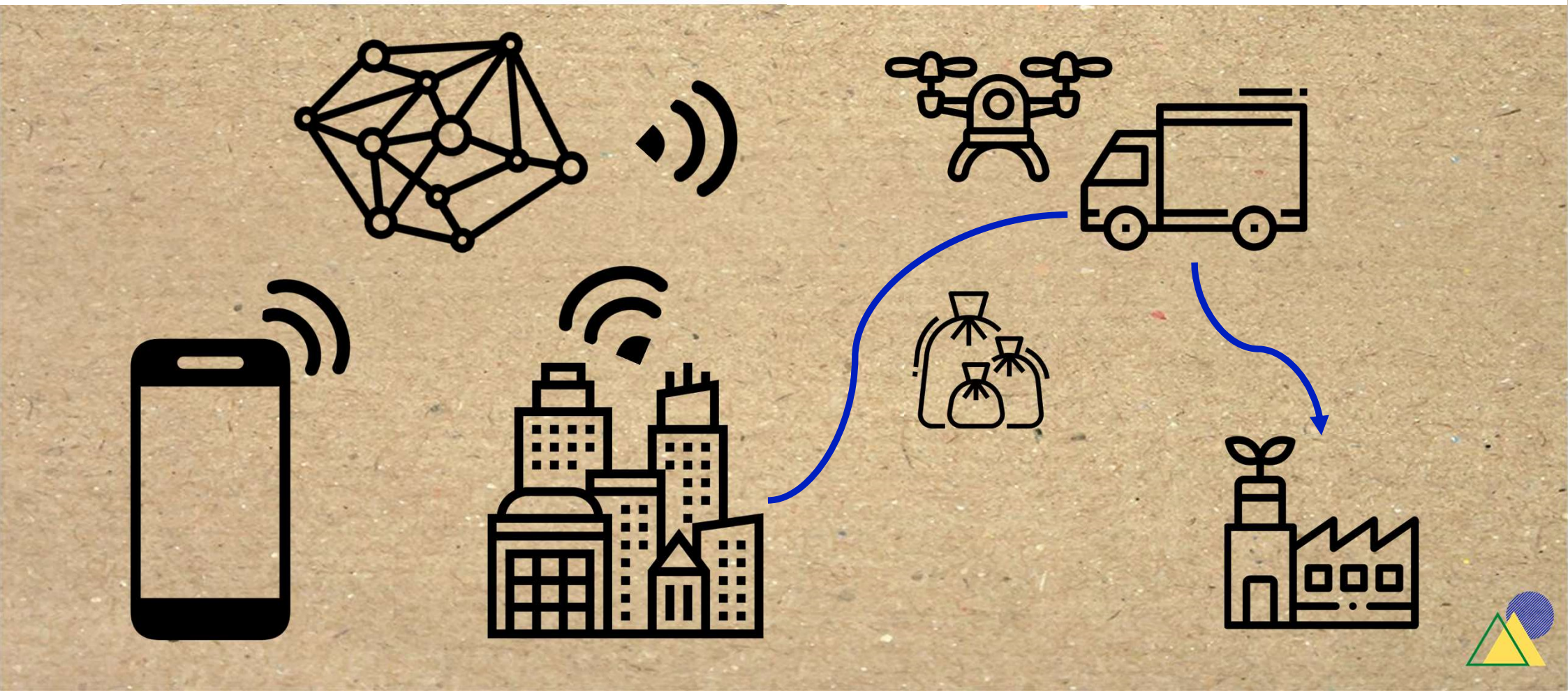
- Municipal Solid Waste - MSW
- Lack of space for new landfills
- Generate electricity by **pyrolysis**

# WHAT IS PYROLYSIS




Source: http://www.makeenenergy.com/home/business-areas/plastic-waste-conversion-plastcon/the-process-in-plastcon/

# EVOLUTION POTENTIAL



# SCALABILITY

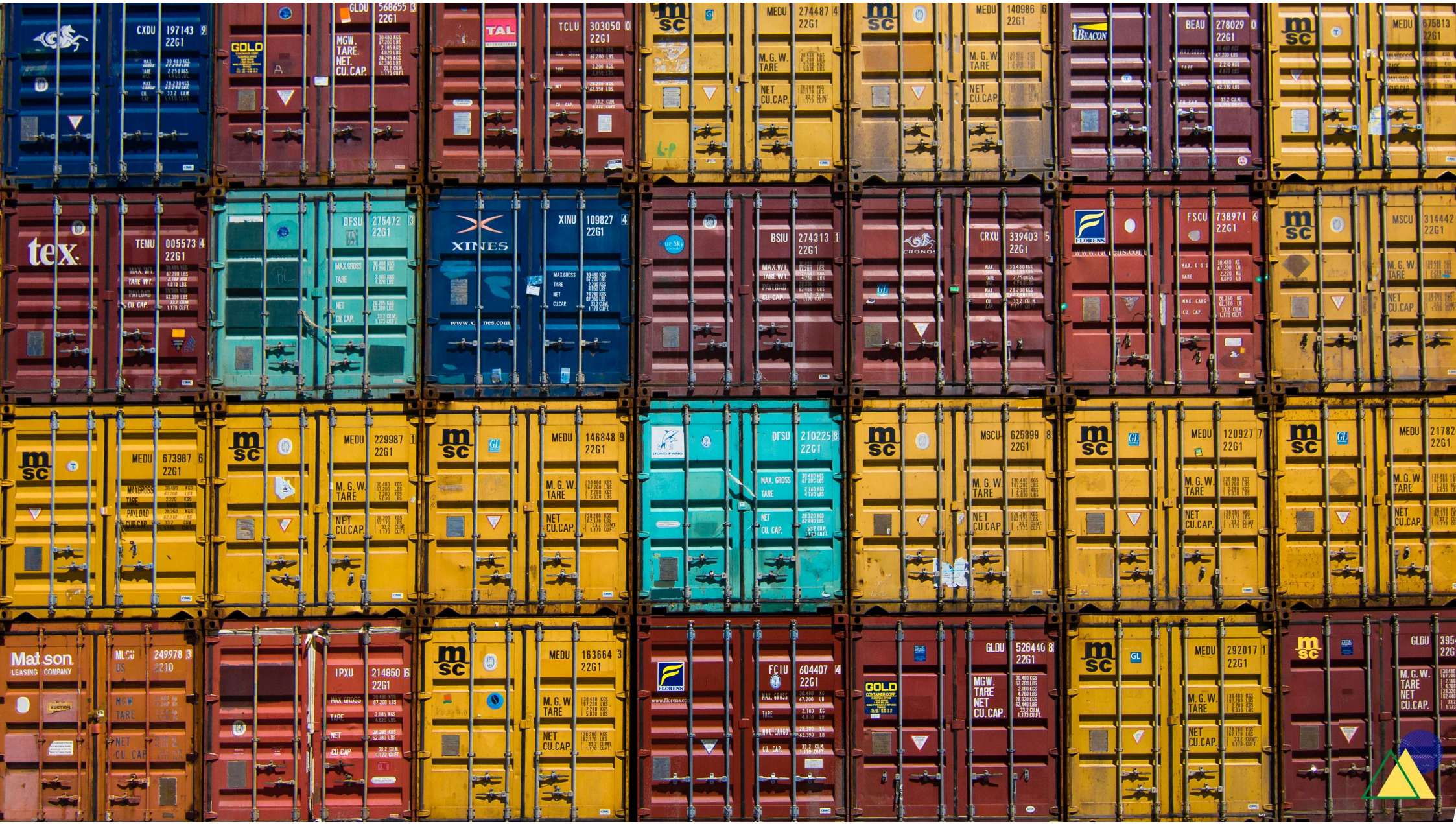
**587,000**

Tons of common garbage

**36,000**

Houses in a month

Source: https://www.prefeitura.sp.gov.br/cidade/secretarias/subprefeituras/amlurb/index.php?p=185375


CXDU 197143 9 22G1
GLDU 568655 3 22G1
MGW. TARE. NET. CU.CAP.
TAL
TCLU 303050 0 22G1
msc
MEDU 274487 4 22G1
M. G. W. TARE NET CU.CAP.
MEDU 140986 6 22G1
BEACON
BEAU 278029 0 22G1
MEDU 675813 22G1
tex.
TEMU 005573 4 22G1
DFSU 275472 3 22G1
XINES
XINU 109827 4 22G1
www.xines.com
BSIU 274313 1 22G1
MAX.W.T.
TARE WT.
PAYLOAD
CU. CAP.
CRXU 339403 5 22G1
CRONOS
FLORENS
FSCU 738971 6 22G1
MSCU 314442 22G1
MEDU 673987 6 22G1
MAXGROSS
TARE
PAYLOAD
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DFSU 210225 8 22G1
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NET
CU. CAP.
MSCU 625899 8 22G1
MEDU 120927 7 22G1
MEDU 21782 22G1
Matson
LEASING COMPANY
MLCU 249978 3 2210
US
AUCTION
MGW
TARE
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CU. CAP
IPXU 214850 6 22G1
MAX. GROSS
TARE
NET
CU CAP
MEDU 163664 3 22G1
FLORENS
www.florens.com
FCIU 604407 4 22G1
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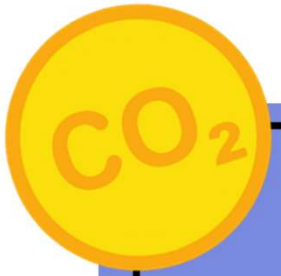
TARE
MAX. CARGO
CU. CAP.
GOLD
CONTAINER CORP
GLDU 526446 8 22G1
MEDU 292017 1 22G1
GLDU 395 22G
MGW.
TARE
NET
CU.CAP.
M. G. W.
TARE
NET
CU.CAP.

# OPPORTUNITY

Reduces:

- The amount of garbage and organic matter in rivers
- Bad smell
- Possibility of flooting
- Air pollution

# MARKET




Local governments

Private sector

# DIFERENTIAL AND IMPACT

- **Closed system**
- Energy generation
- Burning of garbage in a green way
- Sustainable engagement

# SUSTAINABILITY AND SDGs

# NEXT STEPS

- Preliminary study
  - Legislation
  - Environment conditions
  - Existing pyrolysis plants on Egypt
  - River's characteristics
- Scale
- Detailed project and budget

Source: http://www.china-doing.com/projectshow.asp?id=381&mnid=158&classname=news

# OUR TEAM

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computer engineering student

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civil engineering student

**Andrey Del Santo**

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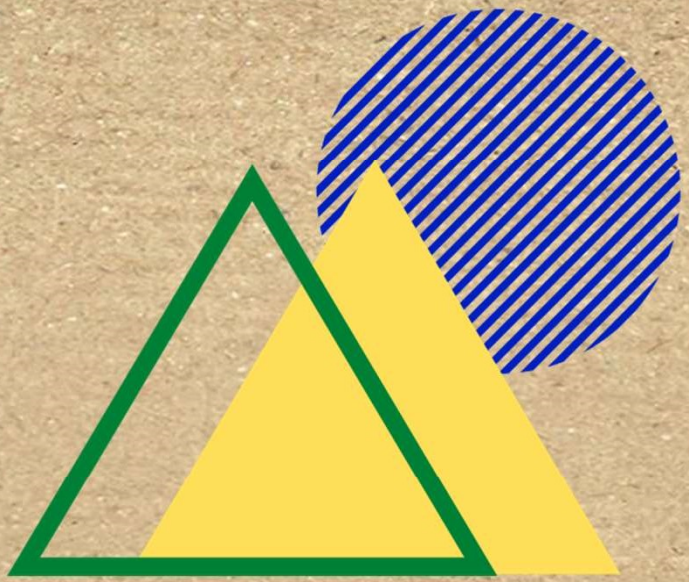
**Gustavo De Mello**

computer engineering student

**Rhuan Sartorte**

mechatronics engineering student



# OKÁ