



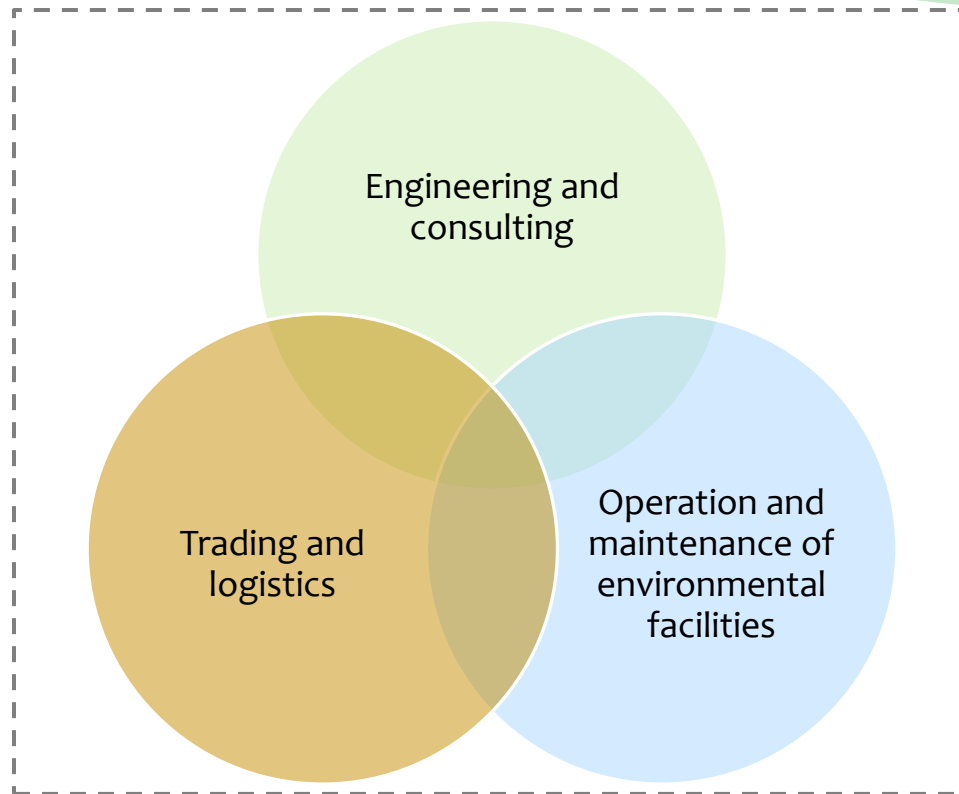
# Environmental Engineering and Services

Presentation FENUR 2015

# Our mission

ReSource International provides consulting and trading services in the field of **residual resources** and **environmental technologies**.

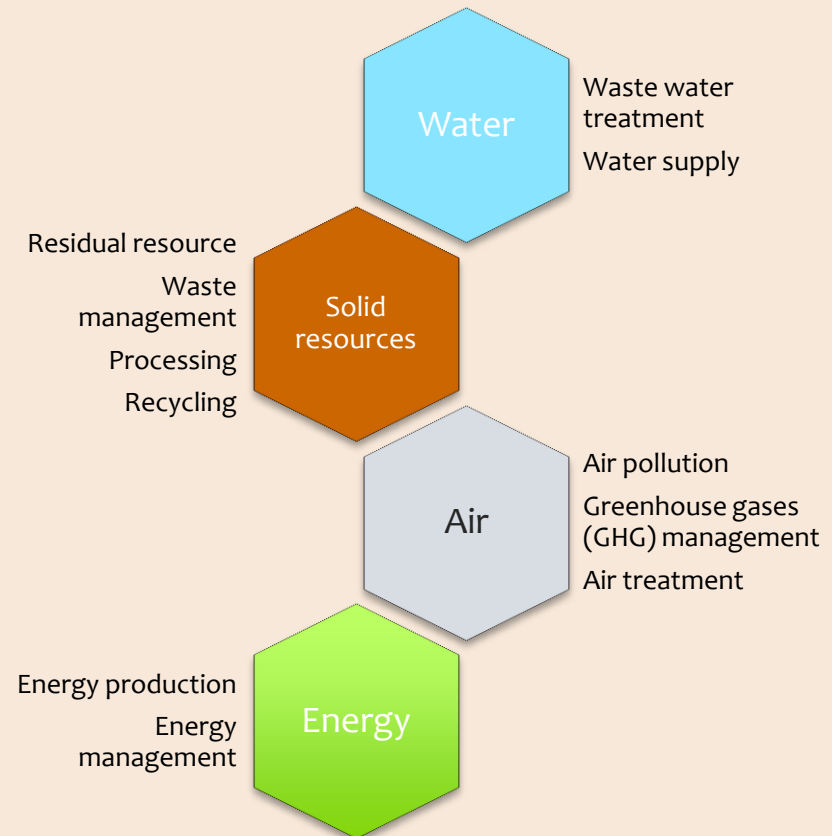
# Integrated services



Residual resources

# Environmental Engineering

- ▶ Use the principles of **engineering**, soil science, biology, and chemistry to develop solutions to **environmental** problems
- ▶ It offers tools for decisions makers and developers in order to lead towards more benefits both for the company and the environment



# Some examples

- \* Biological treatments

- \* Layout and design for biogas, biodiesel, wastewater treatment, composting facilities
- \* Sampling and analysis of organic streams

- \* Residual resource and energy

- \* Reuse and recycling
- \* Optimization of existing processes for resource and cost efficiency (energy recovery, process mapping, mass and energy balance, etc)

- \* Impact assessment

- \* GHG emissions calculation (EC directive, Voluntary schemes, etc)
- \* System approach for waste management and by-products (LC approach)
- \* Life Cycle Analysis (LCA)

# Trading and logistics

- \* Develop trading of residual resources
  - \* Feed
  - \* Renewable energy
  - \* Fertilizer
- \* Use technical and legal knowledge to help customers to market and distribute their residual resources
- \* Focus on long term synergies between producer and user

# Operation and maintenance

- \* Operation and maintenance of environmental facilities
  - \* Landfills
  - \* Composting facilities
  - \* Wastewater treatment plants
  - \* Biogas plants
  - \* Recycling plants
  - \* Etc...

# Biogas Potential tests

- \* **Substrate analysis**

- \* Composition of substrates
- \* Determination of theoretical biogas potential

- \* **Batch tests**

- \* Determination of practical biogas potential
- \* Possible to test a large number of substrate mixtures (co-digestion)

- \* **Continuous tests**

- \* „Simulator“ of full scale
- \* Long term effects of substrates
- \* Inhibition



# The biogas lab

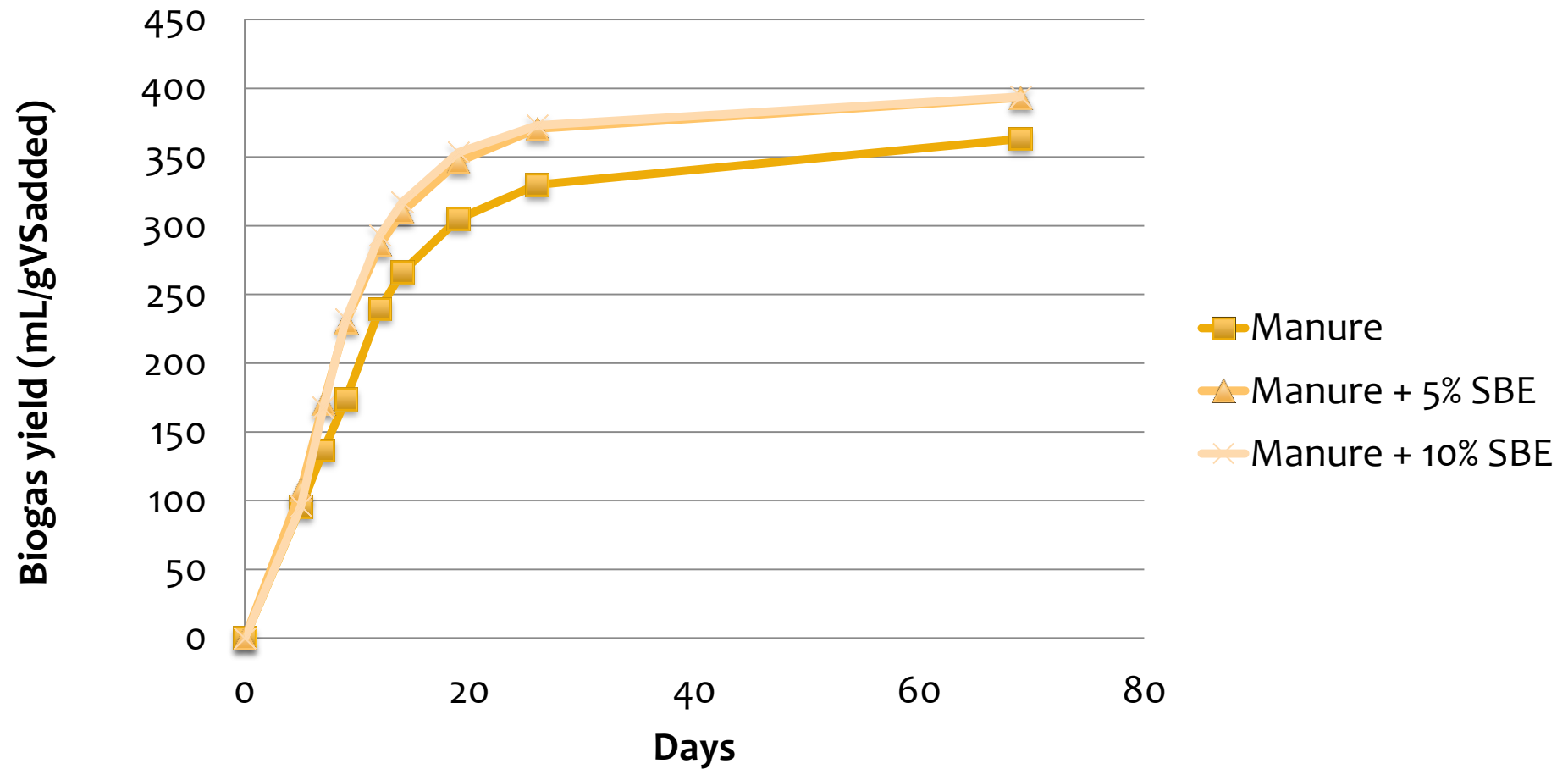


CSTR bioreactors



Batch bioreactors

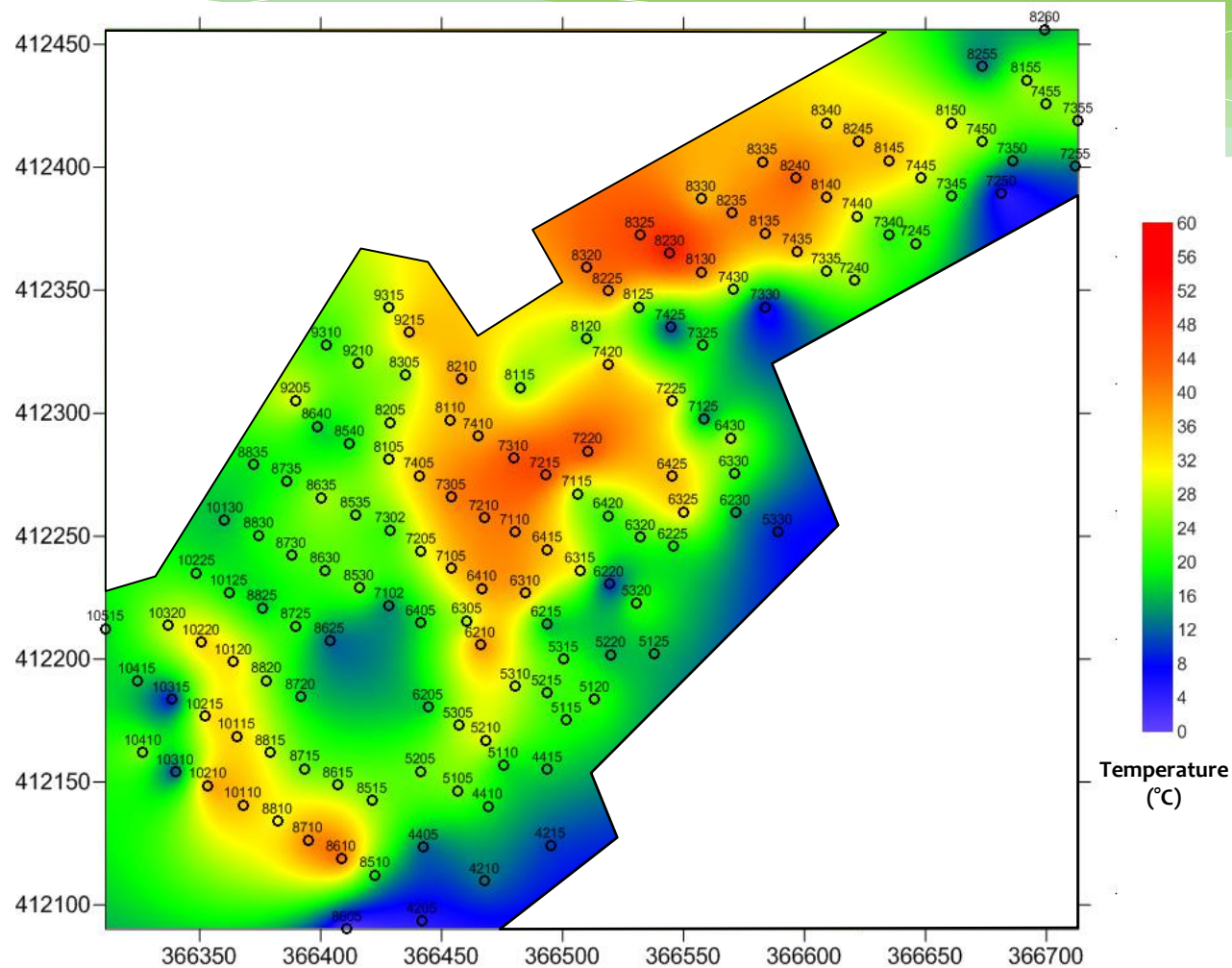
# Co-digestion manure and SBE



# Landfill gas collection

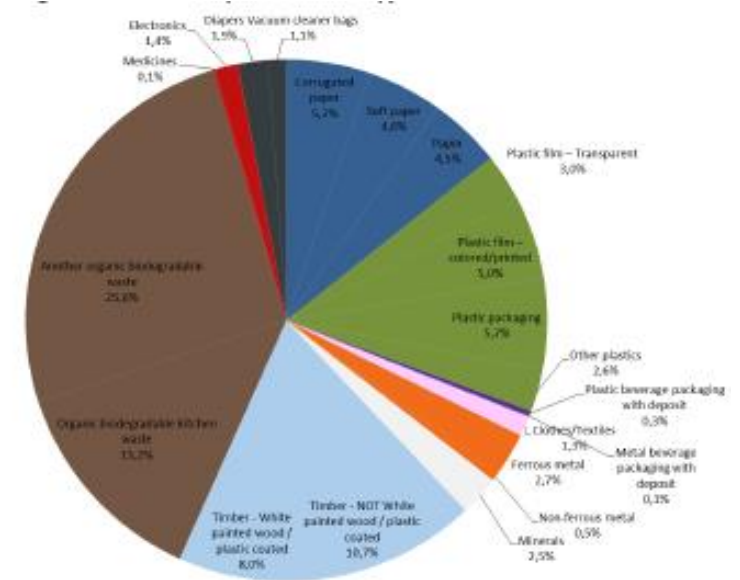
- \* Landfill site of Reykjavik area, Álfsnes
- \* Data collection and treatment
- \* Development of new methods (Modelization, landfill leachate recirculation, data treatment)

# Landfill monitoring



# Waste analysis

## \* Waste analysis and process validation



# Project development

- \* RSI is interested in developing **innovative ideas** in the field of environmental and residual resource management
- \* Several projects are already on progress and we are open for new partnerships



# Innovative biogas upgrading



- \* In 2013 and 2014 RSI received funding from the Innovation Center of Iceland
- \* The process aims at the production of biomethane and biodiesel by combining biogas upgrading with micro-algae growth
- \* Technology can be adapted to other industries such as waste water treatment plant or geothermal plants (CO<sub>2</sub> mitigation)



# Contact

## **Nicolas Marino Proietti**

CEO and Head of development

Mechanical and Environmental Engineer MSc

Tel: (+354) 842 5864

Email: [nicolas@re-source.is](mailto:nicolas@re-source.is)

Web: [www.re-source.is](http://www.re-source.is)

