PROJECT BIOVALOR

Generating value with agroindustrial waste

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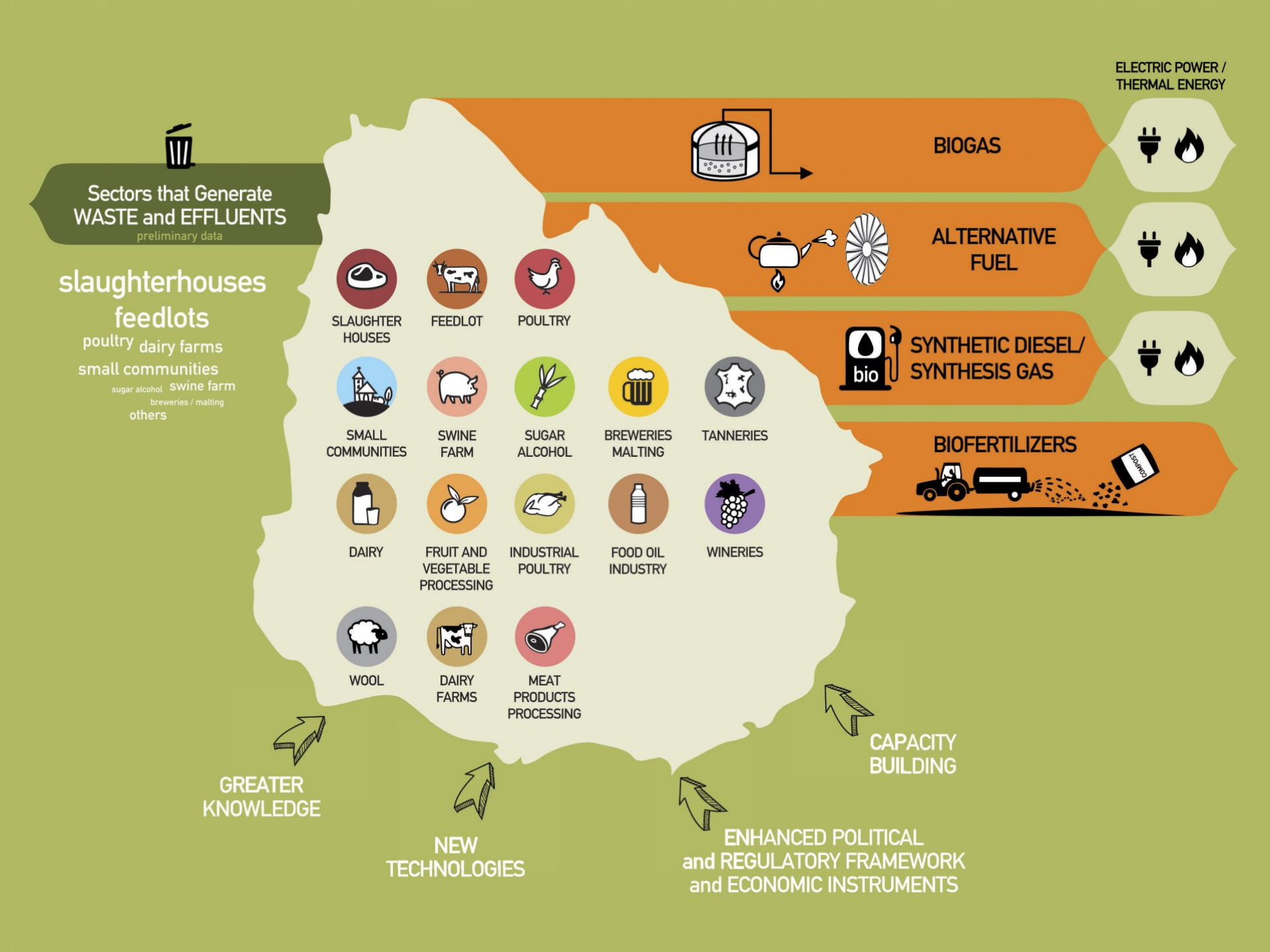
URUGUAY

Technical expert meeting on mitigation (TEM-M 2018)
Bonn Climate Conference
1-2 May 2018

MIEMDNE Dirección Nacional de Energía · MVOTMA Ministerio de Vivienda Ordenamiento Territorial y Medio Ambiente · DINAMA Dirección Nacional de Medio Ambiente · Ministerio de Ganadería Agricultura y Pesca República Oriental del Uruguay · José Artigas Unión de los Pueblos Libres Bicentenario.uy · ONUDI Organización de las Naciones Unidas para el Desarrollo Industrial · fmam Fondo para el Medio Ambiente Mundial


ELECTRIC POWER / THERMAL ENERGY
Sectors that Generate WASTE and EFFLUENTS
preliminary data
slaughterhouses
feedlots
poultry
dairy farms
small communities
sugar alcohol
swine farm
breweries / malting
others
BIOGAS
ALTERNATIVE FUEL
bio
SYNTHETIC DIESEL/ SYNTHESIS GAS
BIOFERTILIZERS
COMPOST
SLAUGHTER HOUSES
FEEDLOT
POULTRY
SMALL COMMUNITIES
SWINE FARM
SUGAR ALCOHOL
BREWERIES MALTING
TANNERIES
DAIRY
FRUIT AND VEGETABLE PROCESSING
INDUSTRIAL POULTRY
FOOD OIL INDUSTRY
WINERIES
WOOL
DAIRY FARMS
MEAT PRODUCTS PROCESSING
GREATER KNOWLEDGE
NEW TECHNOLOGIES
ENHANCED POLITICAL and REGULATORY FRAMEWORK and ECONOMIC INSTRUMENTS
CAPACITY BUILDING

Strategy with Biovalor

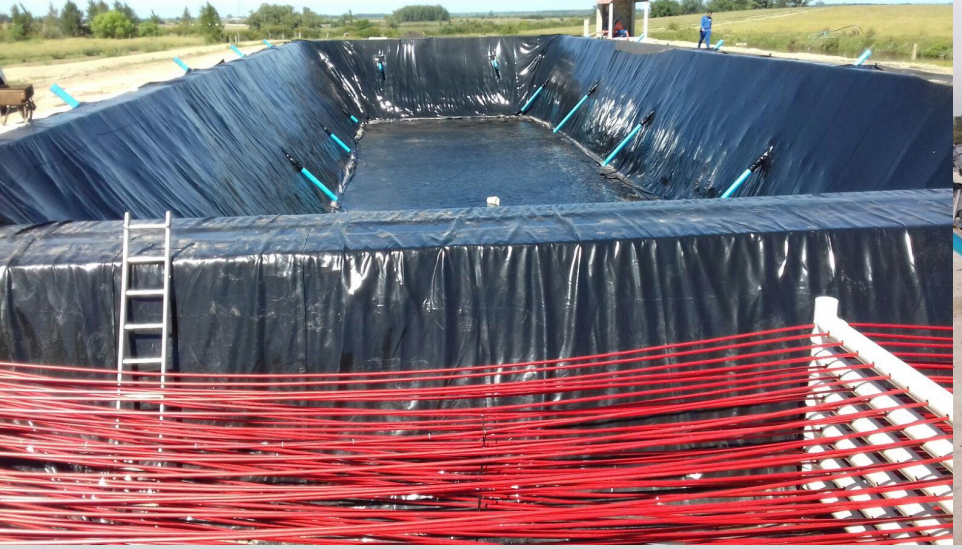
TECHNOLOGIES DEVELOPMENT PLAN of low carbon technologies for waste valorization

Generate technical information for the definition of specifications according to each technology

Implement pilot projects to validate the technologies to the national reality

Generate local capabilities to the design, operation and maintenance of the different technologies

Identify regulatory and economical instruments that promote the selected technologies



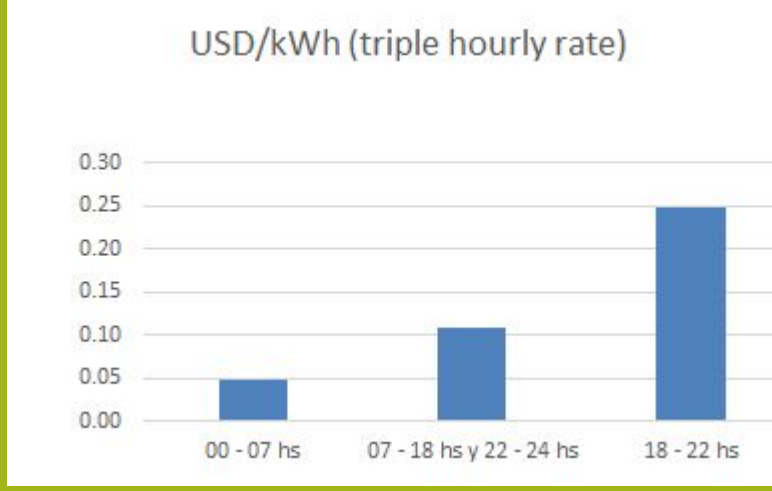
RINCON DE ALBANO PROJECT

Project description	Anaerobic digestión – diary farm – 500 cows
Kind of waste	Manure
Total investment	USD 200.000 total USD 100.000 Biovalor support
Total waste	23.725 ton/year
Energy	40.000 kWh/year
Emisions reduction	276.389 kg CO_{2eq}/year

ONTILCOR PROJECT

Project description	Waste as alternative fuel Boiler of slaugtherhouse combusting ruminal contents
Kind of waste	Ruminal content
Total investment	USD 939.000 total USD 75.000 Biovalor support
Total waste	5.280 ton/year
Emisions reduction	446.516 kg CO2eq/year

Enablers



- **Electric microgeneration decree**
  Power < 150 kW
  Feed-in grid maximum is the same as power you consumed
  Triple hourly rate – energy management to feed in higher price hours

- **Investment promotion act**
  For big scale project in cleaner production, exoneration on economic activities tax

- **Government commitment to renewables energy sources and green economy**
  Energy Mix and National Energy Policy, BIOVALOR, PAGE, future National Waste Act

Barriers

Scale factor: analyse of different business model to biogas – Only economic aspect

Dairy farm
500 cows
Local biogás

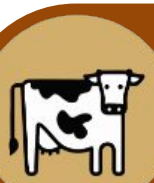
- Not profitable
- Energy Saved: 12.000 USD/year

Swine farm
4000 pigs
Local biogás

- Profitable
- Energy Saved: 20.000 USD/year + energy sell to energy company 500 USD/year

Very small diary farm + diary industry

- Self-sustaining without recovering of investment
- Fat residues disposal saved: 30.000 USD/year
- Energy saves: 128.000 USD/year



Small farmers each biogás and transport of biogas

- Not profitable
- Only incomes from electric energy sale

Biogas from wasterwater treatment to boiler

- Profitable
- Energy saved: 188.000 USD/year

Barriers

- **Investments risks, doubt on technologies**
  Need of incentives to factor in the environmental aspects

- **Controversial: Low feed-in tariff on electric renewable energy**
  50-60 USD/MWh spot electric prices

- **Other aspects**
  Normative regarding liquid biofuels alternatives
  Low environmental controls for small producers (more controls for industries)

FORO de Economía Circular

2 DÍAS

25 ORADORES

350 ASISTENTES

2 TALLERES

ÁREA DEMO

COMUNIDAD

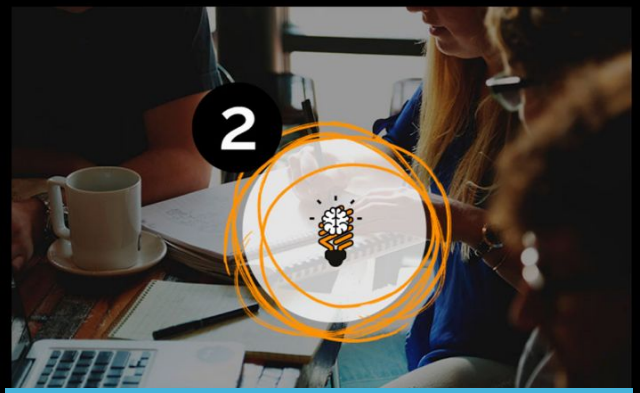
www.foroeconomiacircular.org

PROGRAMA

OPORTUNIDADES CIRCULARES

"Hacia una Economía Circular en Uruguay"

5 inspiring event



Idea Validation

Project Implementation

PROYECTO BIOVALOR
Generando valor con residuos agro-industriales

ANDE Agencia Nacional de Desarrollo
el desarrollo entre todos

MIEM
MINISTERIO DE INDUSTRIA, ENERGÍA Y MINERÍA

MVOTMA
Ministerio de Vivienda Ordenamiento Territorial y Medio Ambiente

MINISTERIO DE GANADERÍA AGRICULTURA Y PESCA
REPÚBLICA ORIENTAL DEL URUGUAY

ONUDI

fmam

www.oportunidadescirculares.org


PROJECT
BIOVALOR
Generating value with
agroindustrial waste
Thank you
very much!
MIEMDNE
DIRECCIÓN NACIONAL DE ENERGÍA
MVOTMA
Ministerio de Vivienda
Ordenamiento Territorial
y Medio Ambiente
DINAMA
Dirección Nacional
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MINISTERIO DE GANADERÍA
AGRICULTURA Y PESCA
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PARA EL DESARROLLO INDUSTRIAL
fmam
FONDO PARA EL MEDIO AMBIENTE MUNDIAL
INVERTIMOS EN NUESTRO PLANETA

Uruguay Data

- Total extension of 176.000 Km^2
- Total population 3.440.157 in 2014
- GDP per capita 16.908 USD (2017)
- Main productive activities

agriculture (soy and cereals), cattle and related industries (meat and wool processing mainly), forestry, dairy industry and tourism

- Unemployment rate 7,9 % (2017)
- 98% of population has access to drinking water and 99 % has access to electricity

GEF PROJECT

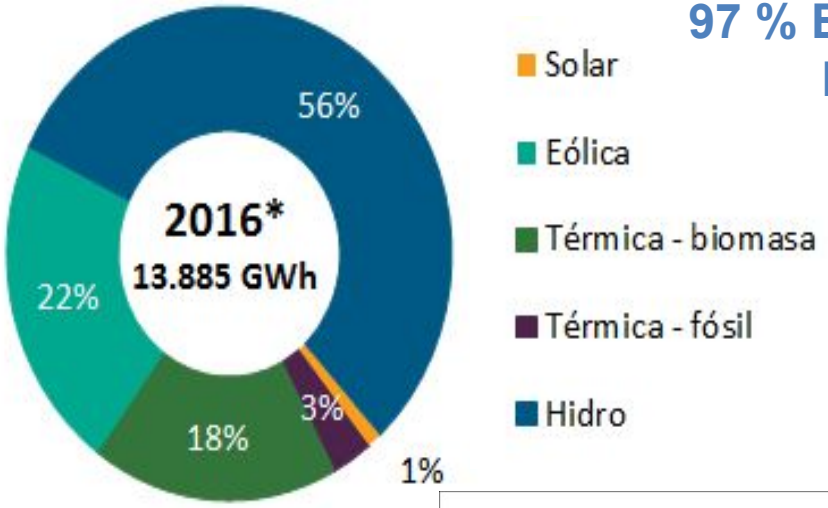
"Toward a green economy in Uruguay: stimulating sustainable production practices and low emission technologies in prioritized sectors"

Objective:

Transform *the different kinds of* ***waste*** *generated in the* ***agro-industry production chains*** *in Uruguay into various types of* ***energy and/or other byproducts*** *with the aim of reducing GHG emissions, while contributing to the development of a low carbon sustainable production model supported by an adequate technology development and transfer.*

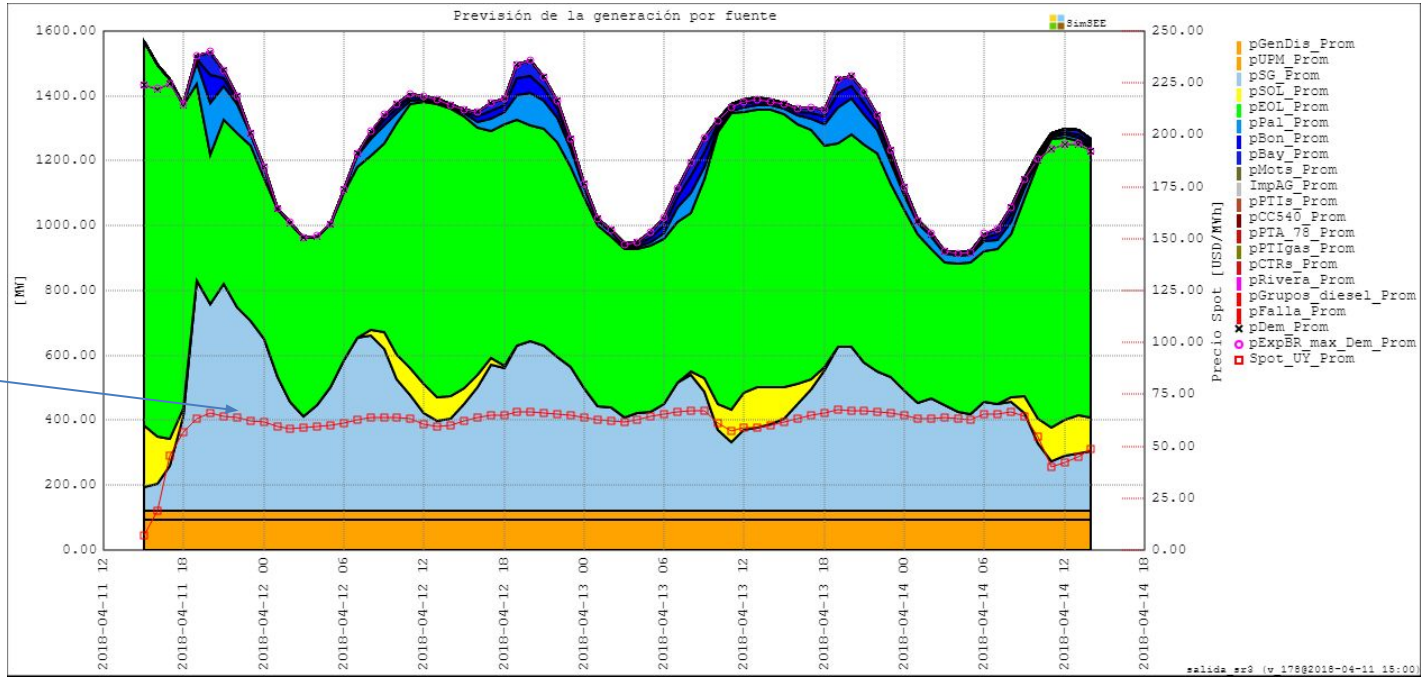
Barriers and enablers

Source: www.miem.gub.uy



97 % Electricity Renewable

Between 50 – 60 USD/MWh



Source: www.adme.com.uy