



PIB Biobased Energy Ukraine
leading Dutch technologies for integrated solutions

“Biomass from Agriculture and Forestry as Source for Local Energy Efficient Solutions – Dutch technologies”

(Біомаса від сільського і лісового господарства, як джерело
для місцевих енергоефективних рішень - голландською
технологією)

Bio-energy Seminar, Kiev, 21 September 2016

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Biomass from Agriculture and Forestry (1) ?



Briquette of pressed reed



Harvested chopped reed

Biomass from Agriculture and Forestry (2) ?



*Organic wastes from
greenhouses and
restaurants*



*Grass as a source for
valuable materials*

Biomass from Agriculture and Forestry (3) ?



*Sugar beet wastes as a
source for valuable
materials and chemicals*



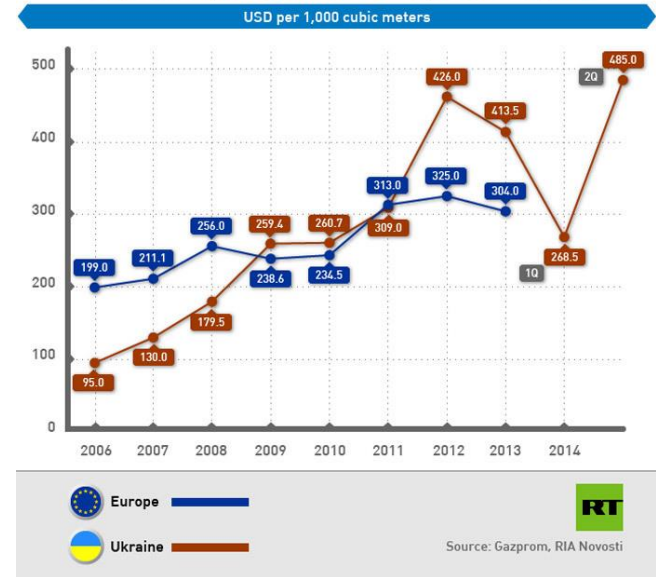
*Wood wastes for local
energy production*

Developments/Ukraine:

- Partnership Agreement with EU
- Financing by IMF en World Bank
- Large awareness of the urgency for energy saving



Gazprom export prices for Europe and Ukraine

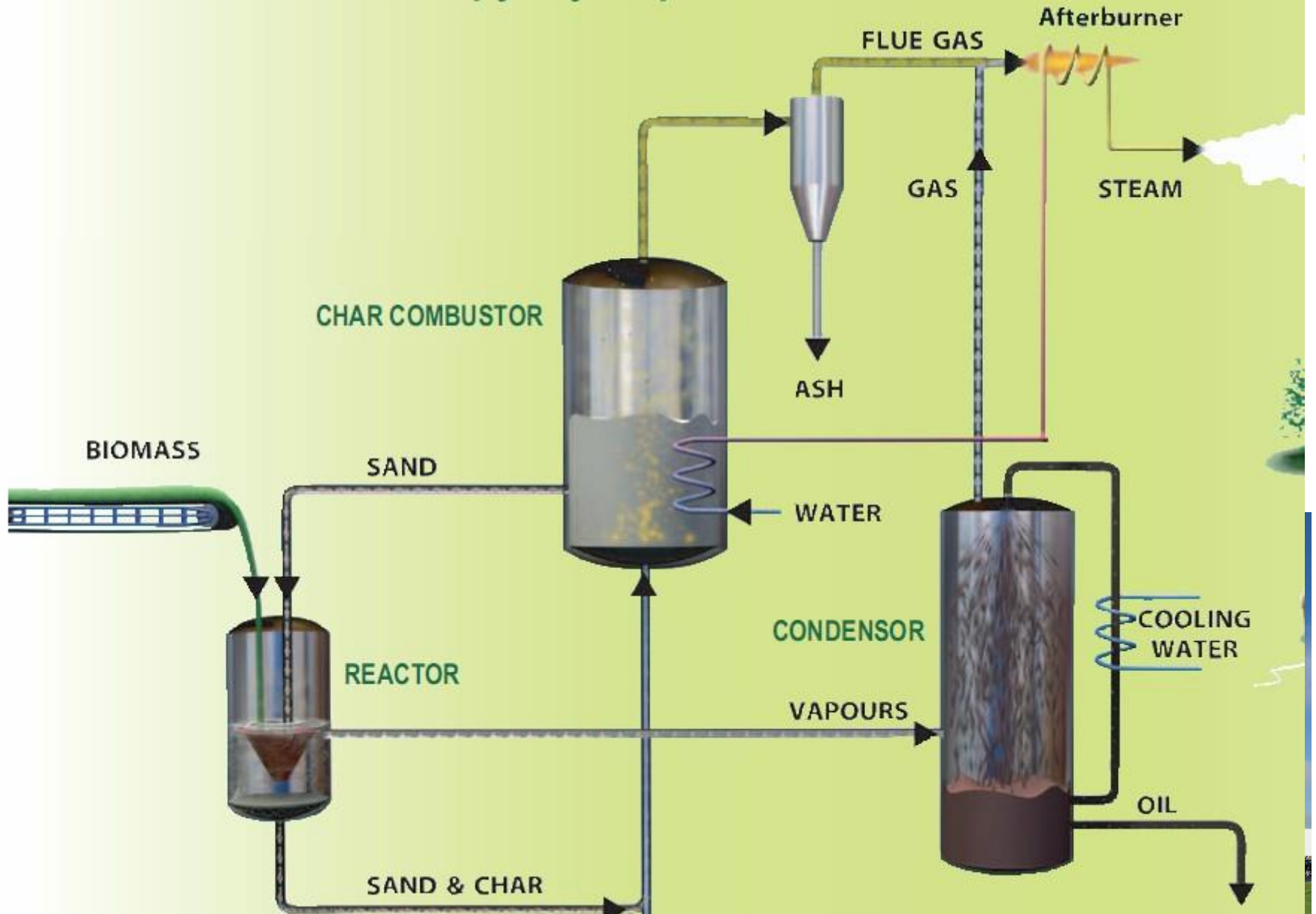


KIEV, August 20. Ukraine's newly-established energy crisis management centre is launching an awareness campaign to urge households to cut natural gas consumption in all possible ways and to switch to **alternative fuels** whenever possible. Deputy Prime Minister Vladimir Groisman was appointed to chair the centre.

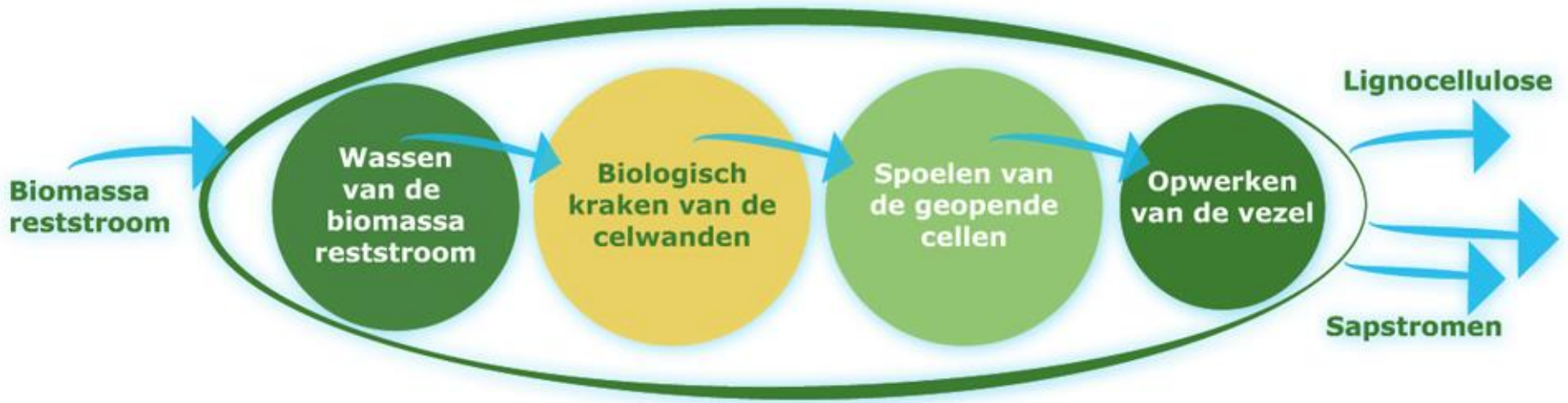
Technology from NL (1) : pyrolysis



The BTG-BTL pyrolysis process

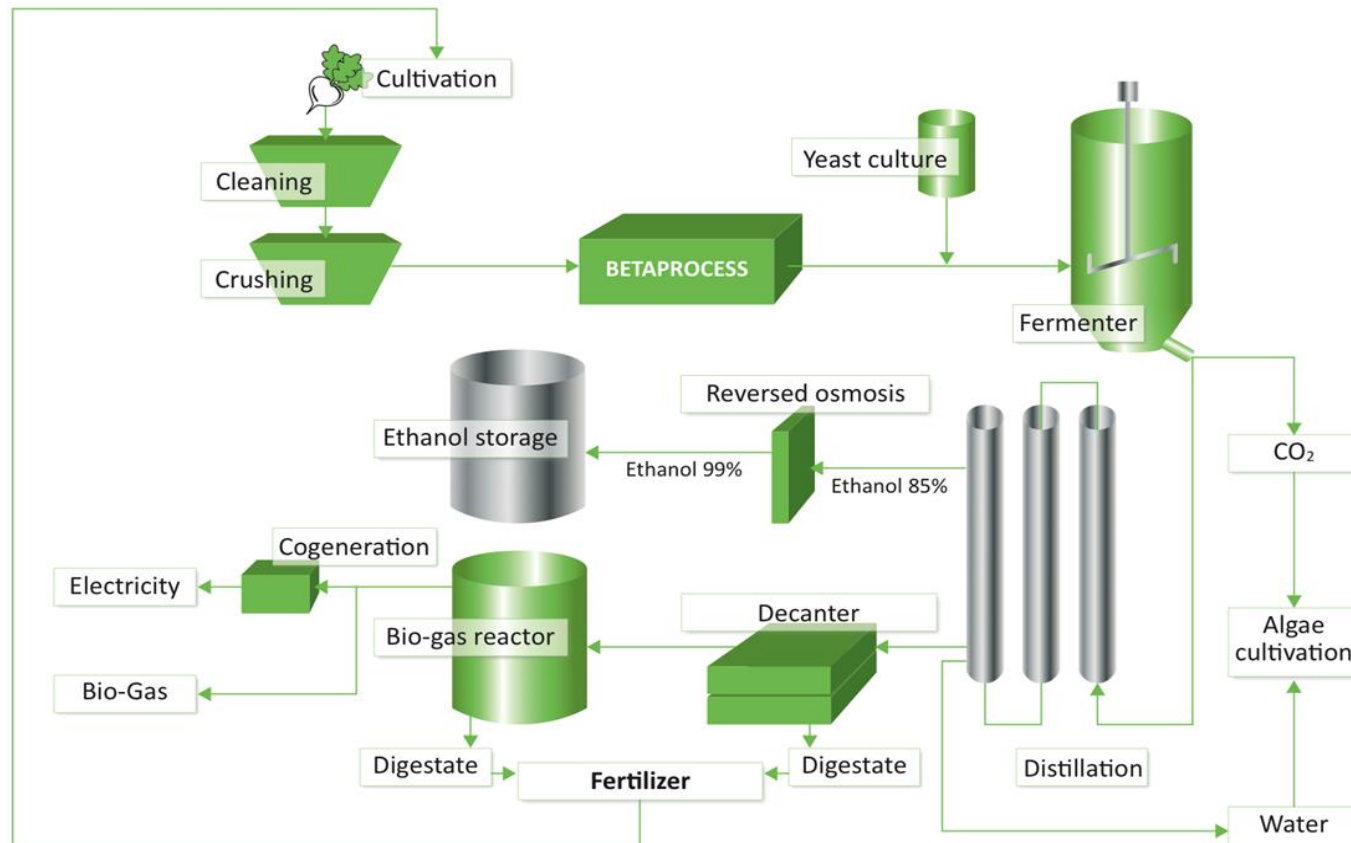


Technology from NL (2) : from grass to valuable material



*Decomposing the grass
and valorization for
products*

Technology from NL (3) : direct production of electricity, fertilizer and biogas from beet sugar (wastes) - beta process



Technology from NL (5) : digestion of wastewater sludge



Technology from NL (4) : high efficient biomass boilers



In the regions of Ukraine there are many small and independent energy consumers, such as schools, hospitals, kindergartens, communal centres, hotels etc, which generate their own energy. Almost all of them use fossil fuel, either natural gas or coal. The problems they face are threefold:

- ***cost of energy resources in Ukraine is increasing rapidly;***
- ***almost every power plant uses fossil fuel, has inefficient operation and causes local pollution and relatively high CO₂-emissions;***
- ***district heating networks are at unsatisfactory state and require capital repairs but lack the finance for modernization.***
- ***As a result, many schools, kindergartens, hospitals and alike face shortage of heat during winter time***

Fully automated biomass boilers with loading bunker for continuous and lasting operation.

ESCO approach for financing, service & maintenance







: Biomass boilers (high efficiency), conform EU standards

: Valuable chemicals from grass & other wastes

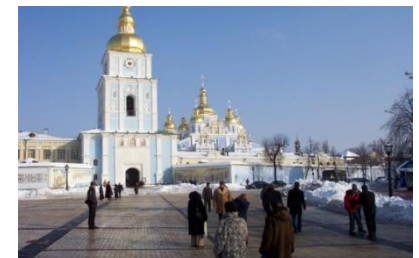
: Digestion technology for production of biogas

: Pyrolysis technology for production of bio-oil (biofuel)

: Recovery of valuable materials from beet (sugar) waste

: Joint Research projects (EU funding)

: Business training



PIB partners are looking for:

- **cooperation with UA partners in international tenders**
- **manufacturing of equipment in Ukraine**
- **investments projects in (bio)energy sector**
- **R & D projects /cooperation with universities (EU funding)**
- **sales representatives in Ukraine**
- **etc**

Велике спасибі!

THANK YOU VERY MUCH !