Ukraine Biogas Update of the Global Methane Initiative (GMI)

Global Methane Forum
Washington, DC, USA

29 March 2016
Bioenergy Association of Ukraine
Renewable Energy Agency
Biogas Update (Preconditions)

- **Energy**
  - High energy intensity of Ukrainian economy, unreasonably large consumption of natural gas
  - The critical dependence of Ukraine on NG supplies from external markets, including Russia
  - Unstable NG prices, tendency of increasing for all categories of consumers
  - Developed transport infrastructure of NG including both main pipelines to EU and distribution pipelines network, providing 75% of the population of Ukraine.

- **Agriculture**
  - Large potential of biogas production from agribusiness waste and residuals (3.2 bill nm³ CH₄)
  - Large potential of biogas production from silage (corn, sweet sorghum, grass, etc.) using available arable land (at least one million hectares) (3.3 billion. nm³ CH₄)
  - Large potential of agriculture efficiency improvements (up to 30 billion. nm³ CH₄ per annum)
  - Large number of agricultural holdings having potential for large-scale projects

- **Transport**
  - Tradition of CNG use as transport motor fuel, developed CNG infrastructure

- **Policy**
  - Commitments to increase RES share in the structure of energy production and consumption
  - Commitments to reduce GHG emissions
Ukraine Biogas Regulatory Update

- Implementation of national plans/directives
  - *Ukraine adopted the National Renewable Energy Action Plan with general target for RES as 11% by 2020 in the gross final energy consumption (290 Mwₑ of electrical capacity from biogas)*, October 2014

- Regulatory updates

- New trends in the biogas sector
  - *Increase in production*
  - *Decrease GHG emissions*
Specific project updates (agriculture and food industry)

- **Feedstock**
  - *Pig and cattle manure*
  - *Chicken litter*
  - *Sugar beet pulp*
  - *Maize and sugar sorgo silage*
  - *Food industry wastewater*
  - *MSW (LFG)*

- **Biogas use**
  - *Electricity (feed-in-tariff)*
  - *Heat*

- **Capacity**
  - *Up to 5.0 MW<sub>e</sub>*
  - *Up to 6000 m³/h*

- **Technology**
  - *Germany*
  - *The Netherlands*
  - *Denmark*
  - *Ukraine*
Specific project updates (MSW landfills and waste dumps)

- **Project types**
  - *Demo projects* - SCS Engineers, USA (within M2M/GMI activities)
  - *Flaring under Kyoto JI Projects*
  - *Green tariff system*

- **Capacity**
  - *Up to 2.0 MW<sub>e</sub>*
  - *Up to 2000 m<sup>3</sup>/h*

- **Technology**
  - *HOFGAS flaring, Switzerland*
  - *Biogas Ltd. UK*
  - *GE Jenbacher*
  - *Ukrainian developers*
Biogas Project Outlook

- Challenges to emission reduction projects in Ukraine:
  - Weak energy prices
  - Soft carbon market
  - Others
    - general bad economical situation
    - military crisis in the Eastern region of the country

- Anticipated and planned projects
  - Anaerobic treatment of agriculture and food industry waste and residuals (chicken litter, sugar beet pulp, etc.)
  - Biomethane production and export in EU
Biogas Project Outlook (2)

- Approaches to overcoming challenges
  - *Implementation of the Strategy for Sustainable Development "Ukraine – 2020" that includes:*
    - reforms of the energy sector
    - energy efficiency program for agriculture
    - land reforms
  - *Elaboration of specific incentive mechanisms for biomethane production*
  - *Creation of a national registry for biomethane production and consumption to confirm the source of its origin*
  - *Capacity building*
    - Technology transfer
    - Training and workshops
  - *Agreements and/or partnerships*
Contact Information and Announcements

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- **Announcements** –