

State of Biogas in the World: 2017

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Clean Energy Solutions Center

CleanEnergySolutions.org

Finance.CleanEnergySolutions.org

The Clean Energy Ministerial launched the Clean Energy Solutions Center as a major initiative in 2011.

The Solutions Center:

- Helps developing governments design and adopt policies and programs and identify finance measures that support the deployment of clean energy technologies.
- Partners with 35+ international energy and finance organizations to provide a range of resources, from web-based information to webinars and trainings.
- Offers the **Ask an Expert** service, which connects governments with a global network of 50+ energy and finance experts for direct technical assistance to develop **solutions to policy and finance barriers** to clean energy.



Energy Efficiency Energy Access
Finance Mechanisms Renewable Energy
Smart Grid Transportation Utilities

Ask an Expert: Our Experts in Action

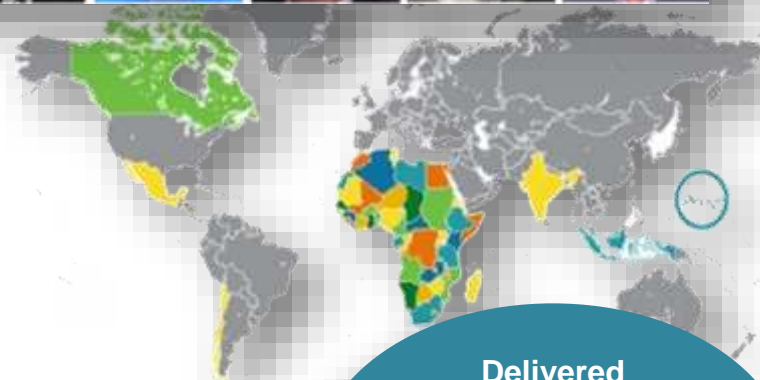
CleanEnergySolutions.org



Benefits of the Ask an Expert Service

- **Quick** and **Easy** access to assistance.
- **No cost** for assistance and no commitment.
- **Objective** assistance from experts is **personalized** to help governments meet local clean energy goals.
- **High-quality** assistance includes:
 - Access to a **collaborative network** of over 50 vetted, international experts with authority on clean energy policies and financing.
 - Independent **review** of assistance to ensure quality.

To request assistance, go to
cleanenergysolutions.org/expert



Delivered
no-cost assistance
for more than 250
requests from over
100
countries/regions.

Expert support available to developing countries

- Request can come from staff or officials at all levels of government – national, regional, local.
- Service also supports organizations working with governments.

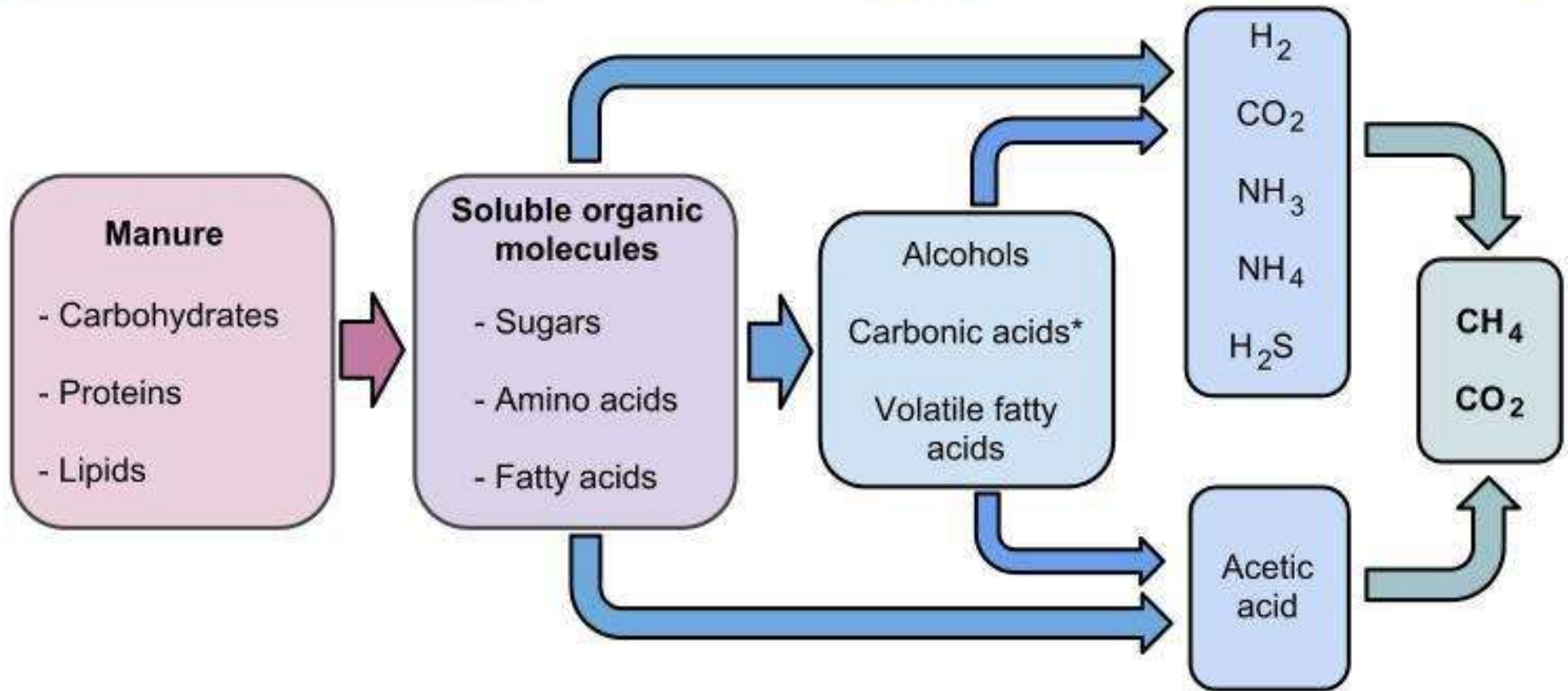
What is biogas?

Hydrolysis

Acidogenesis

Acetogenesis

Methanogenesis

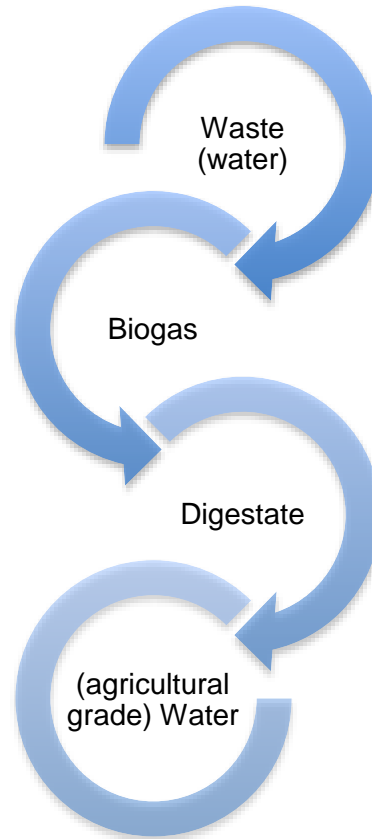


Source: Rea 2014

Scales of Biogas



From Water to Water



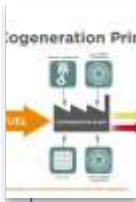
Uses for Biogas



Cooking



Heating

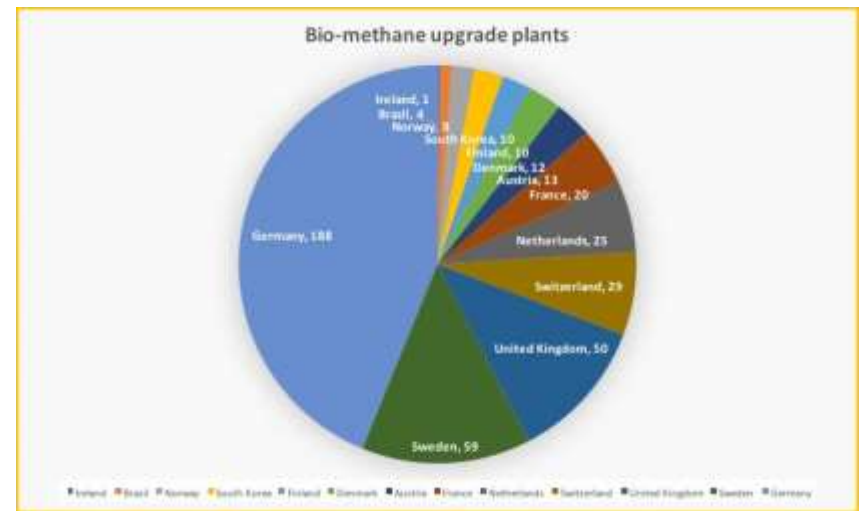
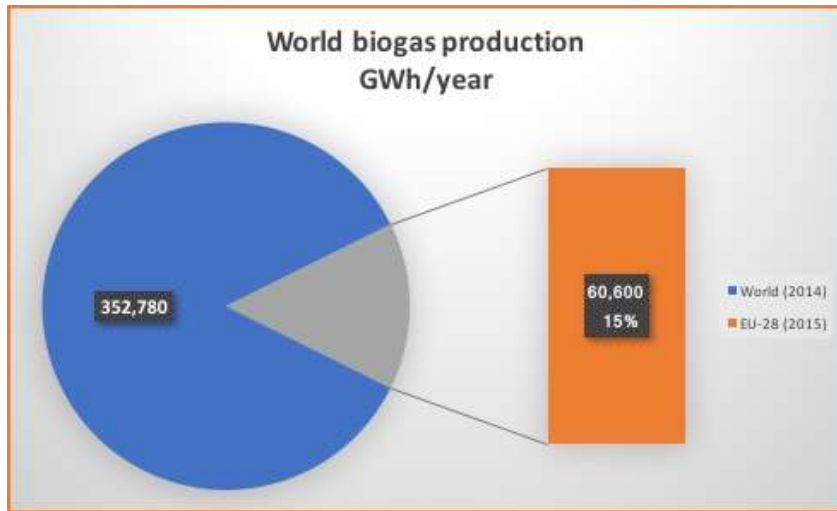


Cogeneration

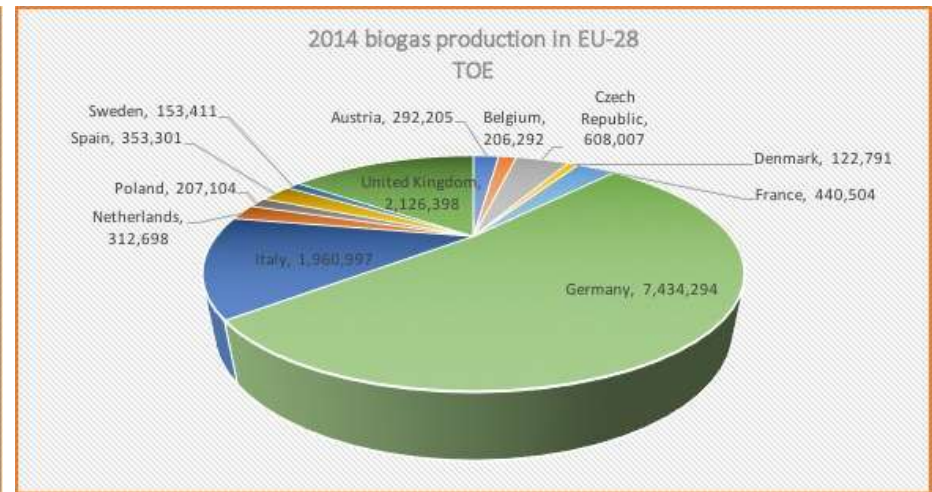
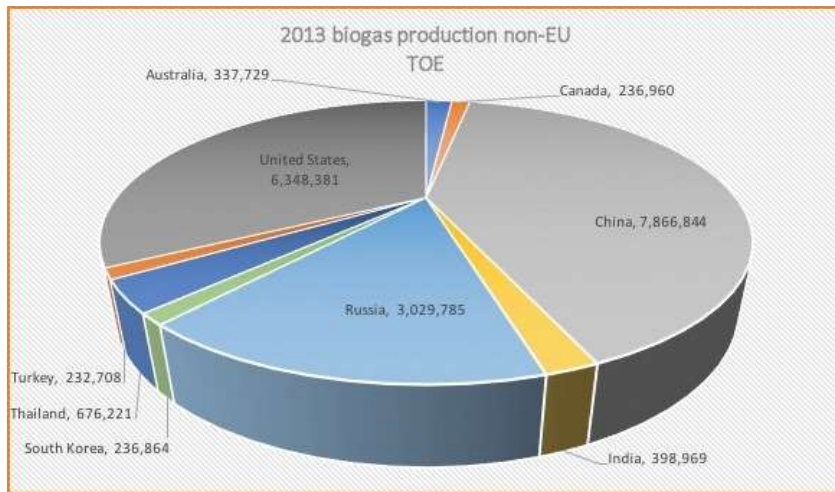


Transport

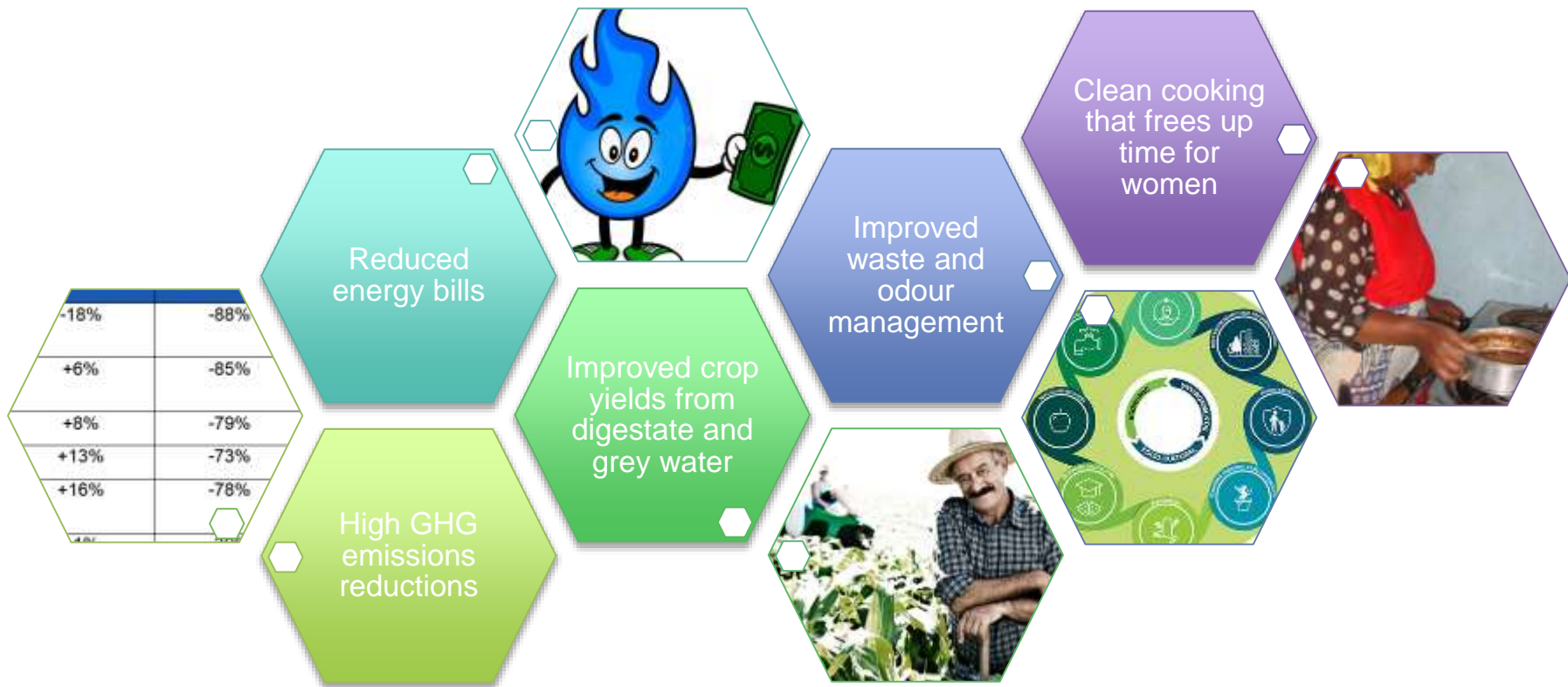
Current Production Globally



Current Production Globally



Biogas Benefits



Biogas Production Challenges

Technical

- Feedstocks
- Sizing of plants

Financial

- Feedstocks
- Access to finance

Policy

Cultural

Biogas Use Challenges

Technical

Financial

- Upgrading to methane
- Gas transportation
- Vehicles & ships

Policy

Cultural

Biogas Policies

General biogas policies

- Support technology transfer for commercial biogas technology providers
- Establish quality standards for biogas technologies and for installers including regular maintenance procedures
- Promote biogas among potential consumers and entrepreneurs
- Provide direct financial support to reduce the cost of biogas digesters at all scales
- Train financial institutions about biogas technologies to reduce perceived investment risk
- Invest in R&D for biogas production technologies as well as uses for heating, cooling, and transportation, upgrading, compression and liquefaction, infrastructure and storage
- Establish regulations for biogas installations that facilitate rather than impede projects
- Establish regulations for the use of digestate
- Monitor and track data regarding existing production

Household, Small- and medium-scale biogas

- Train masons for household digesters
- Establish regulations that allow for streamlined standardization of technologies that use biogas such as small-scale CHP units
- Promote, facilitate, and support community-based biogas projects that use several types of biogas energy for self-consumption
- Support on-farm biogas production and consumption
- Support co-location of businesses with CHP along regional and national bio-methane grids as well as on-farm rural locations

Large-scale biogas

- Encourage and support use of co-products such as CO₂ for algae production or sale to industry
- Invest in regional and national biogas grids
- Facilitate priority supply of bio-methane to natural gas grids
- Facilitate trade between regional, national and international bio-methane and natural gas grids
- Support Certificate of Origin programmes that include GHG data
- Establish long-term, feed-in tariffs for biogas, bio-methane, electricity, and heating
- Support vehicle transition programmes for individuals and businesses to encourage the switch to bio-methane
- Support LBM infrastructure at ports
- Support LBM and CBM fuelling infrastructure in cities, peri-urban areas and along major transportation networks

GRAZIE!

For more information, please contact:

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