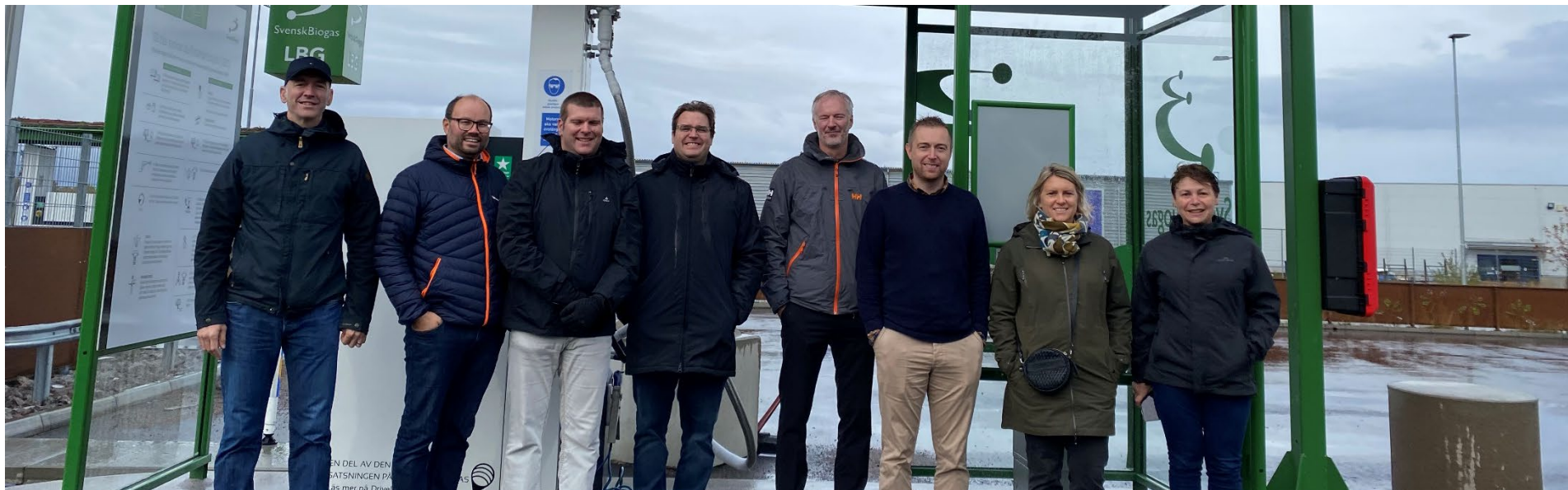


Aktuelles aus IEA Bioenergy Task 37 „Energy from Biogas“



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Zürcher Hochschule für angewandte Wissenschaften
Fachgruppe Umweltbiotechnologie und Bioenergie

To **increase knowledge** and **understanding** of **bioenergy systems** in order to facilitate the deployment of:

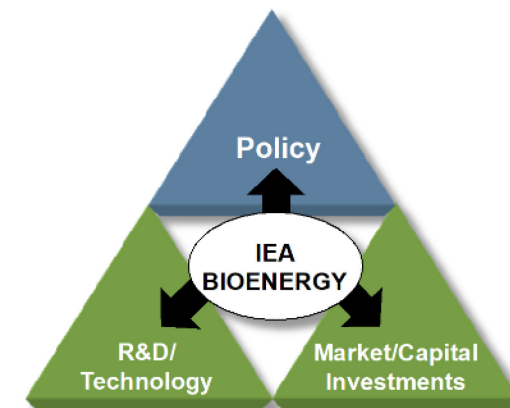
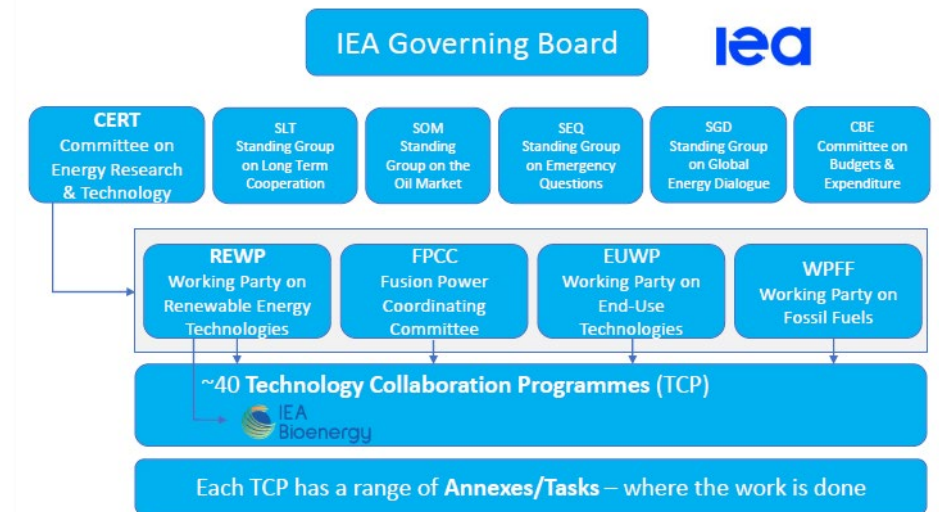
- environmentally sound
- socially acceptable and
- cost-competitive bioenergy systems

Key Role:

Independent collaborative body focused on delivering clear and verified information on bioenergy

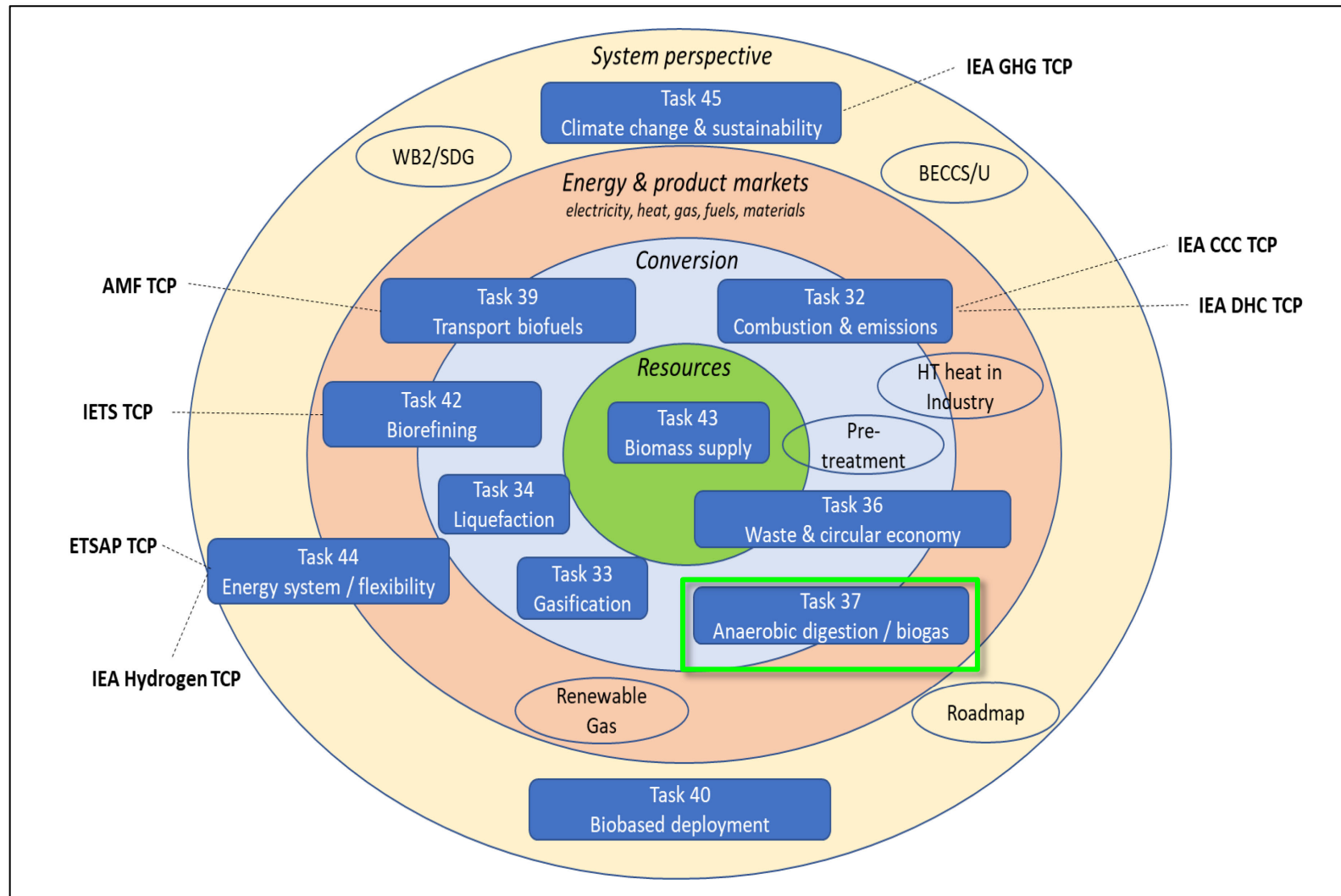
Technology Collaboration Programme
(TCP) functioning within a framework created
by the **International Energy Agency (IEA)**

Work programme carried out through **Tasks**
and **Special Projects**, covering the full value
chain from feedstock to final energy product
26 members: *15 European countries + EC,
US, CND, BR, China, India, Japan, Korea,
AUS, NZ, SAfr*



IEA Bioenergy

Technical Collaboration Programme (TCP)



Mitgliederländer

TASK 37 - 2023 – 17 Mitgliedsländer

Country	Representative
Australia	Bernadette McCabe (Teilnahme noch unklar)
Austria	Bernhard Drosig
Brasil	Rafael González Felipe Marques Renata Abreu
Canada	Maria Wellisch Andrew McFarlan Hank Trim
China	Renjie Dong
Denmark	Teodorita Al Seadi Kurt Hjirt Gregersen
Finland	Saija Rasi
France	Julien Thual
Germany	Jan Liebetrau (Taskleader) Peter Kornatz
India	Harshad Velankar
Ireland	David Wall
Italy	Marco Pezzaglia
Netherlands	Bert van Asselt
Norway	Kari-Anne Lyng
Sweden	Jonas Ammenberg
Switzerland	Hajo Nägele
United Kingdom	Oliver Harwood

Ziele des TASK 37

Energy from Biogas

- Eine von 10 IEA Gruppen zur **Förderung der internationalen Zusammenarbeit** zwischen Behörden, Forschung, Industrie & Anwendern im Bereich Bioenergie.
- Ziel ist der **regelmässige Austausch** zu aktuellen Entwicklungen zur gesamten Wertschöpfungskette der Produktion & Nutzung von Biogas.
- Themenfelder:
 - Bereitstellung & Logistik von Substraten (Energiepflanzen, Reststoffen, Abfällen und Abwässern)
 - mikrobiologische Umwandlung (inkl. Vor- & Nach-Behandlung)
 - Aufbereitung & Nutzung der Energieprodukte (Biogas, Biomethan)
 - Aufbereitung & Nutzung der stofflichen Produkte (Gärgut, org. Dünger).

Arbeitsmodus TASK 37

Energy from Biogas

- 2-4 jährliche Task Meetings vor Ort oder virtuell
- Technische Workshops zu definierten Themen
- Print- resp. Webprodukte in Form von:
 - vertieften Studien (Technical Reports),
 - Informationsbroschüren (Case Stories),
 - Erfolgsgeschichten (Success Stories)
 - Anlagenliste (Plant List).

Was kommt für die Schweiz dabei heraus?

Informationen für und aus der Schweizer Branche

Vernetzung und Informationsaustausch mit:

- Industrie
- Verbände / Interessensgruppen
- Behörden
- Politik
- Forschung

Wie erfolgt der Informationsaustausch?

- Persönlicher Austausch mit Branchenvertreter:innen
- Teilnahme an Branchenveranstaltungen und Vernetzungsanlässen
- Berichterstattung
- Veröffentlichungen

1. Drivers for Successful and Sustainable Biogas Projects: International Perspectives.
2. Integration of Anaerobic Digestion into Farming Systems in Australia, Canada, Italy and the UK.
3. Potential utilization of manure to generate biogas in seven countries.
4. Renewable Gas – discussion on the state of the industry and its future in a decarbonised world.
5. Perspectives on biomethane as a transport fuel within a circular economy, energy, and environmental system.

Technischer Bericht

Perspectives on biomethane as a transport fuel within a circular economy, energy, and environmental system



Perspectives on biomethane as a transport fuel within a circular economy, energy, and environmental system

IEA Bioenergy: Task 37
December 2021



Technology Collaboration Programme
by IEA



Figure 1. A schematic illustration of biogas solutions, where different types of feedstocks are converted in AD plants to biomethane fuel and biofertilizers for use in agriculture. In addition, carbon dioxide is separated and may be used for different purposes. Illustration: Mattias Schläger.



Figure 13. A filling station supplying liquid biomethane. A truck is fueling liquid biomethane to the left, while the picture to the right shows the storage of the liquid biomethane with a cryogenic tank and a vaporizer for the part of the biomethane which is filled as compressed biomethane.



Figure 10. Example of a swap body transport in Linköping, Sweden. The container holds compressed biomethane at 200 bar. In this case the truck used is fueled by liquid biomethane. It is a Volvo, 460 hp.

Source: Erik Nordell, Tekniska Verken, Sweden.

Box 2: Compressed vs. Liquefied Biomethane Transport

Gaseous biomethane - compressed (15°C, 250 barabs)

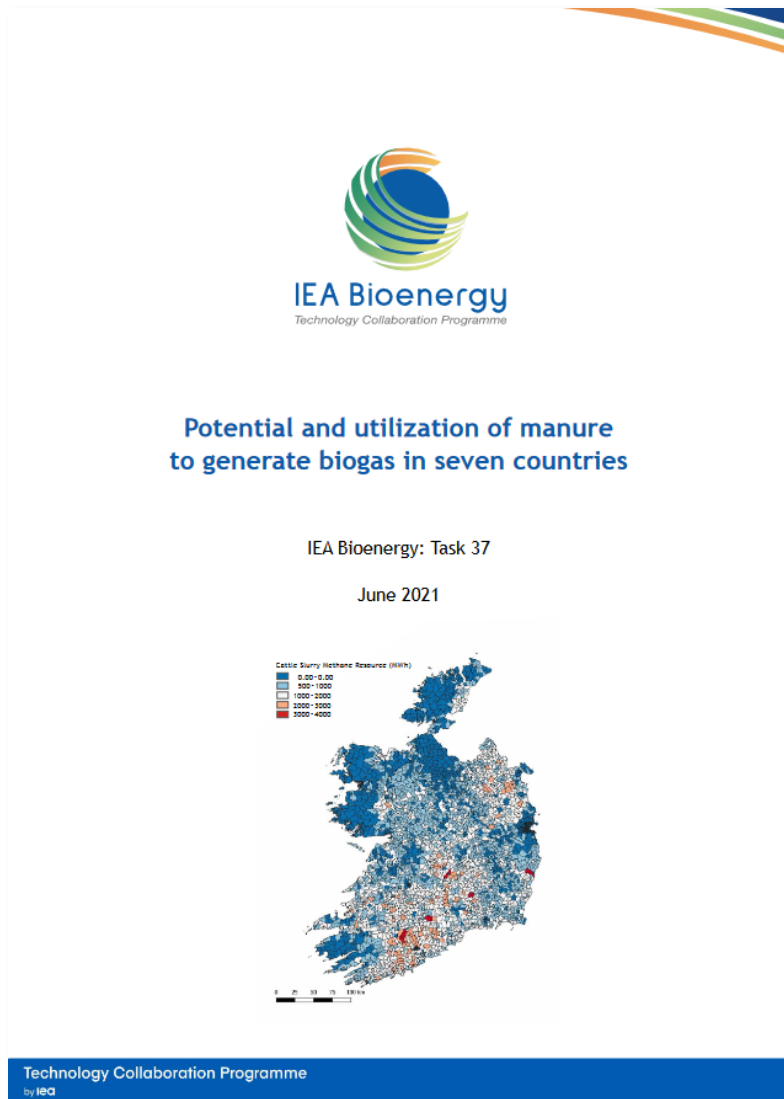
Biomethane volume: 1 m³
Methane concentration: 97%vol
Methane volume: 1 * 0.97 = 0.97 m³
Methane density: 186.88 kg/m³
Methane mass: 0.97 m³ * 186.88 kg/m³ = 181.27 kg

Liquid biomethane (-162°C, 1.01325 barabs)

Biomethane volume: 1 m³
Methane concentration: 99.995%vol
Methane volume: 1 * 0.99995 = 0.99995 m³ (50 ppm CO₂)
Methane density: 424.14 kg/m³
Methane mass: 0.99995 m³ * 424.14 kg/m³ = 424.12 kg
Liquid biomethane mass/
Compressed biomethane mass = 424.12/181.27 = 2.34

Technischer Bericht

Potential and utilization of manure to generate biogas in seven countries



To synthesise, the strategies for manure utilization need to reflect:

- Farming structure, in particular herd size and characteristics of animal husbandry to be targeted (say intensive dairy farms);
- Long term perspective for animal husbandry in the region;
- The particular target sector for biogas utilization (electricity, green gas, transport biofuel, district heating);
- Cost structure for utilization of specific manure type with particular end use of biogas;
- Potential co-substrates and the regional impact on the utilization of these co-substrates in AD facilities;
- Support mechanisms which reflect long term operation of agricultural facilities which will have a lasting positive impact;
- Development of animal husbandry (renovated or newly constructed dairy farms) which optimizes manure handling for usage in AD facilities;
- Impact of the measures on greenhouse gas reduction.

1. Assessment of co-benefits of biogas in a circular economy system
 2. Detailed assessment of an optimised utilization of manure
 3. Decarbonisation of food and beverage industry
 4. Energy and transport fuels from renewable gases
 5. Efficacy of continuous tests
 6. How to reduce the methane slip at biogas systems and landfill
 7. Economics and abatement costs
-
- Case Stories
 - Country Report
 - Intertask: Synergies of green hydrogen and bio-based value chains deployment
 - Newsletter (Arthur Wellinger)
 - Webinars & Workshops

TASK 37

Impressionen - Projekttreffen



Projekttreffen Mailand/Italien 2022

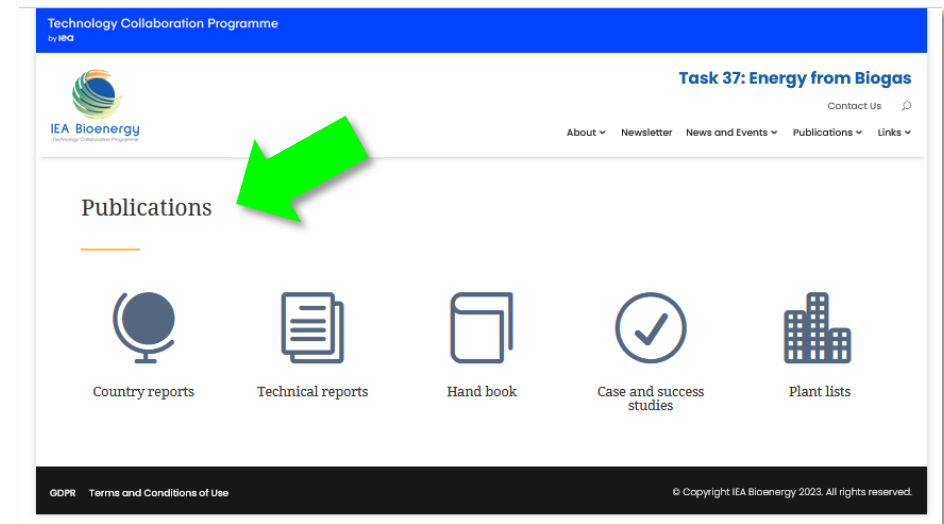
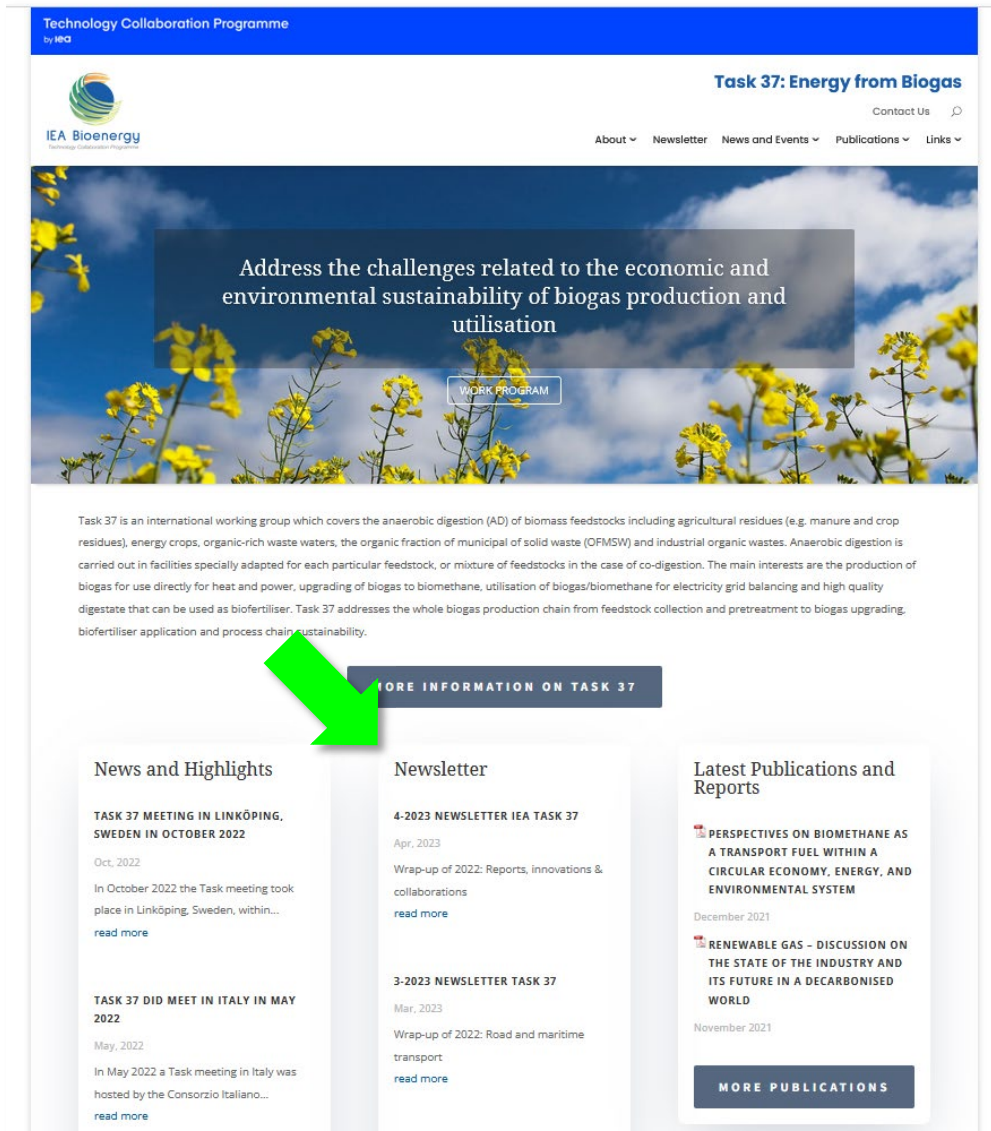
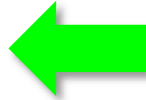


Projekttreffen Linköping/Sweden 2022



Neue Website verfügbar

<https://task37.ieabioenergy.com/>





Herzlichen Dank für Ihre Aufmerksamkeit!

BfE TASK 37 - Finanziert durch das Bundesamt für Energie (BfE)

IEA Bioenergy Task 37 Delegierter

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